

Gila National Forest Draft Revised Forest Plan

Draft Environmental Impact Statement

Catron, Grant, Hidalgo, and Sierra Counties, New Mexico

Volume 3: Appendices A through K



Cover Photo: West Fork Gila River

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**Gila National Forest
Draft Revised Forest Plan
Draft Environmental Impact Statement
Catron, Grant, Hidalgo, and Sierra Counties, New Mexico**

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Abstract: To comply with the National Forest Management Act and address changes that have occurred over the past 30 years, the Gila National Forest proposes to revise their existing land and resource management plan. This programmatic draft environmental impact statement documents analysis of impacts of five alternatives developed for programmatic management of the 3.3 million acres administered by the Gila National Forest. The analysis displays anticipated progress toward proposed desired conditions, as detailed in the Draft Revised Forest Plan, as well as the potential environmental and social consequences of implementing each alternative. Alternative 1 is the no-action alternative, which is the 1986 Forest Plan, as amended. Alternative 2 is the proposed revised plan and is reflected in the accompanying Draft Revised Forest Plan. This alternative addresses the needs for change since the forest plan was published and is the agency's proposed action. It promotes the Gila's niche of: dispersed recreation, traditional uses, and restoration. Alternative 3 maximizes mechanical restoration of grassland and open-canopy woodlands, while alternative 4 maximizes mechanical restoration of forests and both alternatives limit the use of fire and emphasize access to traditional recreational, cultural, and historical uses of the forest. Alternative 5 emphasizes natural processes and maximizes wilderness recommendations.

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Appendix A. Response to Comments

Reserved for Final Environmental Impact Statement. It will include response to comments received on the Draft Environmental Impact Statement.

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Appendix B. State and Transition Modeling Process

Introduction

This appendix picks up where the draft environmental analysis left the discussion of analysis methodology for upland vegetation, fire ecology and fuels. It describes the state-and-transition model structure and the development of model inputs or parameters in which Gila National Forest staff played a role.

Model Structure

While there are similarities between them, each upland ecosystem type has its own model structure. Within that structure, states are defined by combinations of the dominant life form, tree size, canopy cover, storiedness and/or ecological status. Storiedness is applied only to forest/timber type ERUs and describes the number of canopy layers. Single storied conditions are indicative of even-aged dynamics, while multi-storied conditions are indicative of uneven-aged dynamics. Ecological status only applied in grassland ERUs. Ecological status is a measure of species composition. These combinations or state classes, are a standardized part of the regional base models as described in the following tables.

Table 1. State class definitions and model structure

Size Class	Seedling/Sapling	Small	Medium-Large	Very Large
Diameter (inches)	0-5	5-10	10-20	20+
Canopy Cover	Non-tree	Open	Closed	
Percent	<10	10-29.9	30+	
Storiedness	Single-storied	Multi-storied		
Number of layers	1-2	3+		
Ecological Status	High	Low-Moderate		
Percent Similarity to Site Potential	66+	<66		

Inputs and Assumptions

Model inputs include the initial, or current state class distribution and transition pathways between states. The following narrative defines these parameters and describes their development. The parameters themselves are housed within the models, which are included in the project record.

Initial Conditions

Initial conditions are the existing state class distributions specific to each Ecological Response Unit (ERU), or vegetation type. In other words, initial conditions describe how much of a given vegetation type is in a particular state class. The state class assignment used for the assessment was not used for this analysis. The work was redone due to lack of procedural documentation from the assessment.

For the environmental analysis, area was assigned to each state class using a recent adjusted forest boundary, ERU version 5 map product (USDA FS 2014b), Mid-scale Existing Vegetation geospatial mapping products (USDA FS 2009) that describe dominant lifeform^a, size class and canopy cover,

^a This dataset describes dominant lifeform as tree, shrub, herbaceous, or sparsely vegetated.

the Southwestern Regional Office storiedness geospatial product (Triepke 2017b), the Gila National Forest draft Terrestrial Ecological Unit Inventory (TEUI) draft dated January 2017 (USDA FS 2019),^b and ecological status analysis conducted for the assessment phase of revision (USDA FS GNF 2017). The first four datasets were processed in ArcMap using a series of “identity” and “dissolve” functions to create an end product of polygons containing all the attributes necessary to define state classes by ERU.

The data was then exported to Microsoft Excel. While not explicitly necessary for this process, the TEUI was included to facilitate correct usage of the ecological status analysis conducted during the assessment phase of revision for the grasslands. It was also used to identify if any adjustments might be needed in light of limitations imposed by differences in mapping protocols. The data was exported from the resulting geospatial product into Microsoft Excel to facilitate the remainder of the process.

The TEUI dataset was used as training data in the development of the remotely sensed ERU map product. Training data is field-collected data that essentially tells the computer how to interpret the satellite imagery. The Regional Office TEUI staff that mapped the Gila National Forest, the Regional Supervisory Soil Scientist, and Gila National Forest soil scientists assigned each map unit or map unit component (the characteristics) to a single ERU (the label) for this purpose. Unfortunately, computers and people aren’t perfect, and this did not consistently translate to the end product; portions of a few map units ended up in the wrong ERU. In upland ERUs, this represents relatively small acreages that were excluded from seral state assignment.

Differences in mapping protocol, spatial resolution and the time at which the geospatial products were completed relative to the recent forest boundary adjustment sometimes produced conflicted information or gaps that were addressed by establishing the following ruleset.

- In grassland ERUs, if a TEU did not have enough information to be analyzed for ecological status in the assessment phase of revision, assign ecological status consistent with the majority of map units within that ERU that were assessed.
- Where storiedness is described as “not tree” but Mid-scale Existing Vegetation values indicate an area is tree dominated, use a combination of the most recent satellite imagery available, Gila National Forest Fire History and Monitoring Trends in Burn Severity datasets to determine the relative accuracy of the storiedness and Mid-scale Existing Vegetation datasets at random locations within each ERU. The most accurate dataset guides the assignment of state class.
- Where not all Mid-scale Existing Vegetation data are populated, but canopy class is, assume tree or shrub dominance.

Additionally, the assertion made by the Interdisciplinary Team during the assessment that Gambel Oak Shrubland was not a valid ERU in the Gila National Forest was maintained. However, for the assessment these acres were split roughly equally between Mixed Conifer-Frequent Fire and Mixed Conifer with Aspen because the TEUI mapped some of these acres as being dominated by Gambel oak and New Mexico locust and the rest by aspen and New Mexico locust in the absence or near absence of Gambel oak. A more robust examination of the TEUI data revealed that all of these acres are best classified as a state class in the Mixed Conifer-Frequent Fire^c and were assigned to that

^b This dataset is not entirely complete nor readily available to the public in its entirety. For more information related to its completion and availability, please contact the Southwestern Regional Office.

^c Based on TEUI climate classification information.

ERU. Once the seral state assignments were made, the proportion of each state class in each ERU was summed. The resulting tabular data was joined to the original geospatial analysis to create a map product.

This process established the initial or current state class distribution for all ERUs, but a few required further refinement due to considerations built in to the model. The Mixed Conifer with Aspen includes considerations for aspen succession and elk pressure. Heavy elk pressure has been shown to have a detrimental impact on aspen regeneration. During the assessment, the interdisciplinary team determined 60 percent of Mixed Conifer with Aspen should be modeled with aspen succession and without heavy elk pressure, but 40 percent should be modeled without aspen succession and with heavy elk pressure. The basis for this determination included distribution of this ERU in the forest and the teams' collective observation that heavy elk pressure is generally restricted to the northern portion of the forest was the basis for this determination, which was carried forward to populate the model for the environmental assessment. The differences between these successional pathways is that with heavy elk pressure, aspen regeneration eventually fails and the species leaves the system. With lighter use, aspen is able to remain in the system.

A similar procedure was conducted for the Mixed Conifer-Frequent Fire and Ponderosa Pine Forest models, but for different model considerations. Both models include uncharacteristic states induced by stand-replacement fire. After stand-replacement fire, the plant community is usually dominated by grasses, forbs and/or shrubs before it eventually shifts to seedlings and saplings. The uncharacteristic state in these models reflects persistent grass/forb/shrub dominance due to large stand-replacement patch sizes and a resulting lack of a seed source for tree regeneration. During the assessment, the interdisciplinary team determined that from their collective experience and observations, the total area in post-fire state classes should be split equally between the characteristic and uncharacteristic state in both models. This was also carried forward to populate these two models for the environmental analysis.

Assumptions and Limitations

The assumption of uncharacteristic states in the Ponderosa Pine Forest and Mixed Conifer-Frequent Fire may very well be valid under predicted future climatic conditions. Tree regeneration is episodic in the Southwestern climate as very specific weather patterns and timing between weather patterns is necessary to generate a good seed crop and provide sufficient water for germination and establishment. These conditions are predicted to occur less frequently in the future. Additionally, in large high-severity fire patches, seed trees may or may not be present within dispersal distance. This increases the amount of time for trees to become established. On the other hand, successional processes take a long time. The McKnight Fire that occurred in the Black Range Mountains in the 1950s is a good example. Conifer regeneration was not observed in the brush fields that developed in areas of stand-replacement fire for 50 to 70 years, but was observed shortly before the area re-burned in the 2013 Silver Fire.

A limitation is imposed by the polygon sizes used to assign seral state classes in the absence of a regionally accepted scaling process. Essentially, layering all these spatial datasets together creates very small polygons as a basis to assign seral state classes, frequently less than a half-acre in size. Consider the following example as an illustration of the issues this creates: A polygon less than a half-acre in size in the Ponderosa Pine Forest ERU that is not tree dominated should be assigned to a post-disturbance bare ground/grass/forb/shrub state class that is not part of the desired condition. However, this is more likely to be grassy opening in a pine stand that is part of the desired condition.

While the number of small polygons is large, the percentage of ERU acres these areas represent is small and the effect on the analysis is likewise small.

Another limitation of the data is that the Mid-scale Existing Vegetation mapping products pre-date the large wildfires of 2012 and 2013. To update those products in time to support plan revision on the Gila National Forest, the Regional Office averaged fire severity effects over the existing polygons, rather than creating new polygons based on actual effects. This is part of the reason the ruleset presented in the procedural discussion was necessary. This primarily impacts the forested/timber type ERU data. The effects on the analysis are not quantifiable until a more robust Mid-scale update is conducted and the two products can be compared.

Finally, TEUI map units have multiple components, each with their own combination of dominant soil types, potential vegetation communities and climatic characteristics. Map unit assignments to ERUs that were made to support production of the ERU map were made based on the potential vegetation community of the dominant component, in part because TEUI map units are represented spatially as a whole, with no differentiation between components. Consider the following example: TEUI map unit 174 is an association with four components, the potential vegetation community would place half of the map unit area in Ponderosa Pine Forest and the other half in Mixed Conifer-Frequent Fire. Because the dominant component, representing 30 percent of the map unit is best described as Ponderosa Pine Forest, the entire map unit area is placed in that ERU.

In an association like this map unit, often the differences in potential vegetation communities is climate related and driven by aspect—that is whether a slope is north or south-facing. This limitation is likely significant for associations, but is not as large of an issue for other types of TEUI map units given that they either have a single dominant soil/vegetation combination with relatively minor inclusions, or may vary in terms of soil characteristics but not climate or potential vegetation communities. The effect of TEUI map unit design on the analysis of ERU characteristics conducted for forest planning may be insignificant, or significant. No robust examination has been conducted and therefore the influence on the outcomes of this analysis cannot be quantified or stated with certainty. It is assumed the influence is insignificant.

Transition Pathways

In the model, area moves between state classes on transition pathways. Transition pathways represent a disturbance or natural growth in the absence of disturbance. The parameters required for transition pathways include: a transition type or name; an annual probability for that transition type; a “from” state class; “one or more “to” or destination state classes; and if more than one destination state classes are appropriate, a proportion of the area in the “from” state class moving to each destination state class.

This section discusses all of these parameters organized under subheadings for each transition type. Only the transition types with one or more parameters that were adjusted from the regional base models by forest staff during the assessment or environmental analysis, or otherwise populated by forest staff are included.

Wind/Weather Stress

Parameters for wind and weather stress were developed by Regional Office staff as part of the base models. They are only included for Colorado Plateau/Great Basin Grassland, Mixed Conifer with Aspen, and PJ Woodland. However, wind and weather stress is an important and active process in

every ERU. In consultation with the Regional Analyst, who determined these could be ignored without significantly influencing outcomes, these transitions were turned off for all alternatives.

Insect and Disease Mortality

All insect and disease mortality parameters had been provided by Regional Office staff for revision efforts on other forests in the region. Around the time the Gila National Forest began plan revision, the decision had been made that Regional Office staff would no longer provide these parameters. Probabilities were to be calculated based on existing aerial detection survey data by forest staff. For the assessment, survey data was obtained from the Regional Office by a forest Geographic Information Systems (GIS) analyst for the period of record 1996-2014. The number of acres of mortality per survey year for each ERU was extracted and an annualized probability value was then calculated using a spreadsheet tool provided by Regional Office staff. An attempt to acquire subsequent years of data was made for this environmental analysis. That attempt was ultimately unsuccessful. The responsibility for maintaining insect and disease data has recently been moved from the regional level to the national level. As a result, the data is not as readily obtained in the format needed.

In consultation with Regional Office forest health survey and detection staff, it was determined that a few more years of data would not likely have a measurable effect on the probabilities or the modeling results. All alternatives contain probabilities calculated during the assessment. The expertise and experience of Regional Office Forest Health staff were utilized to adjust these probabilities to different state classes and parameterize destination states and proportions. This was done using knowledge of the insect species and disease that impact trees in each ERU, and the biology of these species-leaning on insights about whether those agents typically use smaller or larger trees, in more open or closed stands. The assessment models were reviewed to ensure consistency with this work and adjustments were made where errors or oversights were identified.

Invasive Species

Parameters for invasive plant species are only included in regional base model for Semi-Desert Grassland. These were developed by Regional Office staff working with the Coronado National Forest. Invasive species are a large issue in this ERU on the Coronado, which necessitated building in both invasion and treatment transition pathways between states. Such is not the case on the Gila National Forest. While non-native and invasive species are present in some locations, they are not driving the trajectory of upland ecosystems, and there is no information or data to suggest that any one grassland type on the Gila National Forest is at more or less risk of invasion than the other. These transition pathways were turned off for all alternatives.

Wildfire

Wildfire transitions in the regional base models are parameterized with ERU specific low, moderate or mixed and high severity wildfire probabilities from a regional data summary that includes all national forests in the Southwestern Region. In order to characterize current fire regimes, the data summary included ERU map, Monitoring Trends in Burn Severity (MTBS) (1996-2014) and Rapid Assessment of Vegetation Condition after Wildfire (RAVG) (2015) datasets. Also, part of the regional base models, work by Weisz and others (2009), provides information to guide parameterization of destination states and proportions. This data summary describes the relationship between fire severity classes (low, moderate/mixed or high) and canopy cover classes.

During the assessment, the IDT wanted to demonstrate the collective observation that due to its legacy of wildland fire management, wildfire plays out differently on the Gila National Forest than it does elsewhere in the region. In the assessment models, this was attempted by differentiating wildfires managed under a suppression strategy and wildfires managed for resource benefit into two different transition types with different probabilities. Proportions and/or destination states differed only in one or two state classes in two different models. Ultimately, the assessment models demonstrated no or negligible differences between wildfire management strategies in terms of effects on the ground. However, it did have an unintended consequence - an artificial inflation of how much wildfire occurred in the model. It also misrepresents the nature of natural ignitions. Natural ignitions are not something that can be planned in terms of where, when, number of acres ultimately affected or how often they occur.

For the environmental analysis, wildfire transitions were not differentiated based on whether the fire management strategy is suppression or resource benefit. Instead, the Gila National Forest specific wildfire probabilities were used instead of the regional average to reflect the difference between wildfire on the Gila National Forest as opposed to elsewhere in the region. This was done for all ERUs with three exceptions. In Mixed Conifer with Aspen and Spruce-Fir Forest regional probabilities were used. These two ERUs have an infrequent, high-severity fire regime and occupy a relatively small number of acres in the forest. It was determined that using 20 years of data from approximately 52,000 acres would not adequately represent a current fire regime, especially in light of the 2012 Whitewater Baldy Complex and 2013 Silver Fires which burned significant area in both these ERUs; the Gila-specific probabilities are a misrepresentation of what might be occurring in terms of fire rotation or frequency. The regional probabilities offer a more robust, but still limited window into the current fire regime for the purposes of state-and-transition modeling. As currently mapped, PJ Woodland occupies the largest number of acres in the forest. However, similar to Spruce-Fir Forest and Mixed Conifer with Aspen, it is an infrequent, high-severity disturbance ecosystem. Given its larger areal representation, the Gila National Forest-specific probabilities were used.

Similar to Mixed Conifer with Aspen and Spruce-Fir Forest, PJ-Evergreen Shrub and Madrean Piñon-Oak Woodland occupy a relatively small area and are associated with a smaller volume of data specific to the forest. However, as it is mapped on the Gila National Forest, Madrean Piñon-Oak Woodland differs from how it is conceived in the ERU framework. Differences in vegetation potential due to soil characteristics and associated implications for a more variable fire regime led to the decision to use the Gila National Forest-specific wildfire probabilities. On the other hand, no such clear differences between PJ-Evergreen Shrub as mapped on the Gila National Forest and elsewhere in the region led to the decision to use the regional probabilities to increase the volume of data supporting this transition pathway.

Destination states and proportions were developed using on-the-ground knowledge and expert opinion guided by the cover-severity relationships established in the data summary provided by Weisz and others (2009). Given that state classes are defined by both cover and size class, expert knowledge is necessary to determine destination states in terms of size class changes. Field experience in the forest also facilitates developing these inputs where there is more than one potential outcome. For example, some area in a seedling/sapling or small closed canopy state class may move to a seedling/sapling or small open state class or a medium-large open state class as a result of a mixed severity fire depending on whether the larger trees were present in the stand. This was not fully considered as part of the IDT parameterization of the assessment model and was revisited in development of the environmental analysis.

Additional assumptions related to parameterizing wildfire transitions for all alternatives included in this analysis include the following:

- In the grassland models, which describe early seral states as recently burned/sparingly vegetated, fire does not occur in these states due to lack of fuels.
- In early seral states dominated by grass/forb/shrub cover, fire of any severity maintains grass/forb/shrub cover dominance.
- In all ERUs except Mixed Conifer with Aspen and Spruce-Fir Forest,
 - ◆ High-severity fire only occurs in closed canopy states.
 - ◆ Low-severity fire does not occur in seedling/sapling or small closed canopy states. Neither does low severity fire occur in medium to very large closed canopy states in ecosystems dominated by woodland tree species as canopy heights are typically lower than in ecosystems dominated by timber tree species.
 - ◆ Low-severity fire can occur in single story (even-aged) medium to very large closed canopy states in forest/timber type ecosystems due to the relatively density and continuity of ladder fuels. Low severity fire in multi-storied closed canopy states, does not occur due to higher density and continuity of ladder fuels, which tends to favor mixed and high severity fire.
 - ◆ In frequent-fire ERUs, mixed severity fire occurs in seedling/sapling and small open or closed canopy state classes and in medium-large and very large closed canopy state classes, but does not occur in medium-large and very large open canopy state classes. This is due to differences in fuel characteristics and the relative susceptibility of different age-classes to experience mortality.
- In Mixed Conifer with Aspen and Spruce-Fir Forest ERUs, low severity fire does not occur in closed canopy states or in aspen dominated states as dominant species are fire-intolerant. Mixed/moderate and high severity fire occurs in all tree-dominated state classes.
- Funding is not a constraint naturally ignited wildfires occurring under conditions that help the forest move toward desired conditions.

Research has suggested that allowing more mixed severity fire in historically frequent, low severity fire ecosystems is necessary if fire is to act as a restoration tool, which necessitates more risk. Under alternative 1, management has minimized risk by managing natural ignitions for resource benefit under weather and fuel conditions that favor low severity fire, and suppressing natural ignitions where mixed and high severity fire were more likely. Under alternatives 3 and 4, management continues to minimize risk under weather and fuel conditions that favor low severity fire and it is assumed that leads to roughly the same annual, per acre probability of wildfire under each severity class as is represented under alternative 1.

Under alternatives 2 and 5, it is assumed that management is less risk adverse, leading to more acres experiencing wildfire. While the intention is to allow more acres of low and mixed severity fire on the landscape, when and where it makes both ecological and operational sense, it is unlikely that management can completely control the severity distribution of the additional wildfire. Some proportion of high severity is likely to accompany low and mixed severity. This is the increased risk. To reflect both the increased number of acres experiencing wildfire and the increased risk, a transition multiplier was applied. A transition multiplier increases the probability that a transition pathway will occur in the model. While the proportional probability of each severity class is likely to

change under both of these alternatives, there is no way to quantitatively estimate those changes given annual patterns of weather conditions and ignitions, and comfort levels of different individuals in leadership. Therefore, it was necessary to assume that the current wildfire probabilities would remain proportionally the same between severity classes and the same transition multiplier was applied to each severity class^d. However, the value of this transition multiplier varies by ERU and between alternative 2 and alternative 5.

Under alternative 2, transition multiplier values were calculated by comparing the average number of acres experiencing beneficial wildfire under the no-action alternative (2007-2017) and the number of acres that would have experienced fire under the historic average fire rotation interval^e. The transition multiplier represents the percent increase that would be necessary for the number of acres experiencing wildfire to reach the midpoint between the two. For alternative 5, transition multipliers were calculated in much the same way, except instead of using the midpoint, the difference itself was used to calculate percent increase. For Mountain Mahogany Mixed Shrubland, Madrean Piñon-Oak Woodland, PJ-Evergreen Shrub and PJ Woodland, which have no objectives, the median percent increase was applied as a transition multiplier. This approach to the transition multipliers provides some recognition of the spatial nature of fire. Even if not targeted with plan objectives, these vegetation types are likely to experience more wildfire under both alternatives 2 and 5. Spruce-Fir Forest and Mixed Conifer with Aspen were excluded from calculation of the median value, as they are highly unlikely to be found in spatial association with woodland ERUs.

No approach is without shortcomings, and in this case, Juniper Grass Woodland required deviation from the approach described above. As calculated, Juniper Grass Woodland would have a transition multiplier in excess of 40,000 under alternative 2 and double that under alternative 5. The next largest value was for Semi-Desert Grassland at 50 and 100 for alternatives 2 and 5 respectively. The decision was made to use the Semi-Desert Grassland values for Juniper Grass Woodland under the rationale that some ceiling had to be put in place within the model. Fifty to 100 hundred times more fire was perceived to be less unrealistic than 40 to 80 thousand.

Prescribed fire

While the assumptions developed for wildfire transition pathways and the data-driven cover-severity relationships are relevant and applied to prescribed fire transitions, probabilities are not. For the assessment, area or acre limits were used in conjunction with a fixed probability that remained the same for every severity class in every state class in every ERU.

Area limits only determine the total number acres for a given prescribed fire severity class - for the ERU as a whole. They cannot express that prescribed fire is not equally likely in every state class, in

^d As discussed in the main body of the DEIS, MTBS data indicates that on the Gila NF, there is currently no trend away from the contemporary fire regime variables that area used to inform wildfire probabilities. These include fire severity distribution at a landscape level.

^e For ERUs with objectives, the low end of the historic average fire rotation interval was used to establish the maximum number of acres to be treated under alternatives 2 and 5 - with limited exceptions. Under alternative 2 and at the Forest Supervisor's discretion, the maximum objective for Mixed Conifer with Aspen and Spruce-Fir Forest reflect the total number of acres each occupies on the Forest. The desired fire effects are to build patch diversity and reduce surface fuels in the hopes of protecting these ERUs into the future. The Forest Supervisor's intention to using the total number of acres to cap the objective is to remove limitations, provide greater flexibility to maximize what windows of opportunity that might be had to utilize multiple, small, low severity fire entries under the right conditions.

every alternative. To address this, probabilities were developed for use in conjunction with area limits, which allows for these differences to be expressed in the model. In addition to the assumptions applied to wildfire transitions, a blanket assumption applied to all alternatives for prescribed fire. Prescribed fire is limited to low and mixed severity. There is no transition for high-severity prescribed fire in any alternative.

Alternative 1 area limits are defined by average annual actual accomplishments by ERU between 2007 and 2017. Only the acres funded by congressionally appropriated dollars were used to calculate these area limits. No acres accomplished with partner dollars are included to demonstrate the plan is within the fiscal capacity of the forest. This is a requirement of the 2012 Planning Rule. Forest staff and leadership believe that partnership dollars cannot be taken for granted. Competition for those dollars is high, and their availability can vary widely based on numerous factors. The pool of congressionally appropriated dollars for vegetation treatments between 2007 and 2017 was also used in a fiscal capacity exercise to develop plan objectives under each alternative and strongly influenced the development of area limits by alternative. These funds were re-allocated between treatments types based on treatment cost estimates and the theme of the alternative. While this exercise was not intended to be construed as a literal estimation of vegetation management practices, it served as a basis to ensure objectives were sufficiently flexible that they there would be a good chance of having the funds to meet them.

Alternative 2 reflects a restoration theme that strives to balance the use of treatment tools in consideration of: providing products to people and market conditions; human health, life and property; and the number of acres that can be treated with a particular tool given the cost. Area limits also reflect the forest supervisor's relative ranking of priority ERUs. Alternatives 3 and 4 reflect restoration themes that emphasize providing products to people, and reflect differences in stakeholder concerns for particular ERUs and the benefits they provide to people. They also reflect stakeholder concerns about the use of wildfire, whether prescribed or naturally ignited. Alternative 5 reflects a restoration theme that emphasizes prescribed and naturally ignited wildfire.

The themes of the alternatives also influence which state classes targeted with prescribed fire, and with what severity. Under alternative 1, closed-canopy woodland and woody encroached grasslands conditions have been avoided. Only open-canopy conditions have been targeted. In forested/timber types, both open-canopy conditions and medium to very large, single-storied, closed-canopy states have been targeted. Despite the closed-canopy conditions, the relative scarcity of ladder fuels under single-storied conditions leads to greater surety in maintaining low severity fire effects under the weather and fuel moisture conditions typical of prescribed fires. This is reflected in the parameterization of associated probabilities for the No Action alternative. Probabilities were also distributed between mixed and low severity based on the relatively limited data for prescribed fire available in the Gila National Forest's MTBS dataset over the period of record 1985-2017. This distribution is approximately 10 percent mixed severity and 90 percent low severity. Destination states and proportions were populated using the same methodology as was used for wildfire transitions.

Alternatives 3 and 4 models were parameterized identically to alternative 1 in terms prescribed fire with the exception of area limits. The maximum number of acres stated in the plan objectives for these alternatives were used to set area limits and are much lower than the other three alternatives. The models for alternatives 2 and 5 vary both from the previously discussed alternatives, and have both similarities and differences of their own. Both alternatives 2 and 5 expand the state classes targeted with prescribed fire to include those that have been avoided in the past. This means allowing

for more mixed severity fire, which comes with additional risk. As with naturally ignited wildfire, conditions and the comfort levels of those in leadership will vary and will ultimately determine what additional risk, if any, is taken. However, for the purposes of this analysis, it was assumed that under alternative 2, the amount of mixed severity prescribed fire on the landscape would double from roughly 10 percent^f of prescribed fire acres to 20 percent. Under alternative 5, that increase would double again. Under this assumption, probabilities and area limits were adjusted.

Finally, prescribed fire treatments in the areas currently mapped as Wildland Urban Interface (WUI) were considered. These acres were separated out from their individual ERUS in the budget re-allocation exercise conducted in objective development. This was intended to convey the importance of human values in these areas and to encourage no less than the current investment in WUI treatments. Approximately seven percent of the forest is currently mapped as WUI and the acres are fairly well distributed across ERUs. Only 5 percent of the WUI has been treated with prescribed fire between 2007 and 2017. Through the modeling process, it was determined that any adjustment made to area limits to include WUI would have a negligible effect on the ecological outcomes reflected by the models. Furthermore, prescribed fire in the WUI depends on site-specific concerns, and can be highly influenced by the preferences of adjacent landowners. No adjustments to area limits were made for prescribed fire transitions in the WUI.

Prescribed Cutting Methods

Prescribed cutting methods commonly referred to as mechanical treatments; although not all prescribed cutting methods require the use of heavy equipment such as skidders, haulers, et cetera. The regional base models do not reflect the full suite of available methods. The number of transition types supported in the regional base models were optimized to lessen the workload and still provide a reasonably robust way to obtain the information necessary to fulfill important requirements of the National Forest Management Act (NFMA) related to forest product or biomass volume calculations. These state-and-transition pathways are supported by Forest Vegetation Simulator (FVS) model runs conducted by regional office staff. These FVS model runs and associated tools for processing VDDT model outputs facilitate the calculations necessary to fulfill NFMA requirements (Boening 2014; Youtz and Vandendrieche 2015). This is discussed in further detail in Appendix C -Timber Suitability and Estimated Vegetation Management Practices. Actual prescribed cutting methods have and will continue to vary to fit site-specific management goals under all alternatives.

Mechanical treatment transition pathway parameterization is similar to prescribed fire, but does not have the support of regional data summaries. Transition type (prescribed cutting method), destination state, proportions and probabilities all rely heavily on the expert opinion of the forest silviculturist and vegetation/fuels program manager. All mechanical treatment transition pathway parameters in the assessment models were reviewed and updated where necessary for the environmental analysis based on the input provided by the before-mentioned individuals. These inputs include prescribed cutting methods, the percentage of the time they are used in each ERU and state class, and the state classes targeted. Updates reflected improved understanding of modeling concepts gained since the assessment and adjustments to reflect the narrower timeframe being used to represent current management in alternative 1 (2007-2017) as opposed to the assessment (1996-2014). The updated inputs were used to calculate probabilities and do not vary by alternative per the forest silviculturist's input, except in the grassland ERUs under alternatives 2 and 3. With respect to the grasslands,

^f Based on the limited data for prescribed fire available in the MTBS dataset's full period of record as of September 11, 2018.

current management has been targeting both open and closed canopy conditions but the emphasis has been on open canopy encroached states. Alternative 2 reflects a more aggressive approach and focuses equally on both open and closed canopy encroached states. Alternative 3 is the most aggressive, inversely targeting closed canopy encroach states as compared to alternative 1.

Area limits were also calculated for each prescribed cutting method based on silvicultural input in conjunction with the number of acres to be treated under each alternative. As with prescribed fire, the number of acres used to calculate area limits reflects the actual accomplishments between 2007 and 2017 for each ERU under alternative 1, with the remaining alternatives being parameterized based on the budget re-allocation exercise and theme of each alternative as previously described. However, acres treated in the WUI were included, as opposed to prescribed fire. This was due to socioeconomic considerations and the fulfillment of NFMA requirements. Area limits were established for each ERU based on the proportion of the WUI they occupy as currently mapped and the minimum number of acres stated in the WUI objective.

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Appendix C. Timber Production Suitability, Estimated Vegetation Practices and Projected Harvest Levels Methodology

Introduction

This appendix picks up where the draft environmental analysis left the discussion of analysis methodology for timber, forest and botanical products. It adds detail to the timber production suitability process and estimated vegetation practices, as well as the calculations involved in the sustained yield limit (SYL), projected timber sale quantity (PTSQ) and projected wood sale quantity (PWSQ). The basic process was outlined in the draft environmental impact statement.

Timber Production Suitability

Legal Criteria

Lands not suited for timber production due to legal factors include designated wilderness areas, wilderness study areas, research natural areas, and eligible Wild River segments. The spatial data used is from the Gila National Forest corporate dataset. Timber harvest for the purposes of timber production is prohibited on these lands. The ability to use timber harvest as a tool depends on the particular law that establishes the prohibition.

Designated Wilderness and Wilderness Study Areas

Motorized equipment is specifically prohibited in congressionally designated wilderness areas by the Wilderness Act of 1964 (16 U.S.C. 1 1 21 (note)). Similarly, the New Mexico Wilderness Act of 1980 requires that the two Gila National Forest wilderness study areas designated by that law must be managed to protect the wilderness characteristics that they possessed at the time of designation, subject to valid existing legally established rights and uses (16 U.S.C. 1 1 31 (note)). Although the Gila National Forest's 1986 Plan did not recommend these areas to congress for designation, and existing motorized and other uses at the time the Act was passed are allowed to continue, timber production would not be consistent with the requirements of the law. Consistency with these mandates must be maintained until Congress provides updated management direction through legislation, which may include releasing these lands to forest uses other than wilderness, designating them as wilderness, or some other management guidance. Existing wilderness areas on the Gila National Forest are the Gila, Aldo Leopold and Blue Range Wildernesses, which collectively cover 792,584 acres. Existing wilderness study areas are the Hell Hole and Lower San Francisco Wilderness Study Areas. These areas cover 27,660 acres.

Designated Research Natural Areas

Research Natural Areas (RNAs) are designated as such by the Chief of the Forest Service under the Code of Federal Regulations (CFR) 251, Subpart A, Section 251.23 (1966). These areas are established to provide adequately for the research necessary to serve as a basis for the management of forest and range land in each Forest Service Region. Projects, activities and uses not related to research or education are not permitted and the unmodified condition of these areas must be maintained, except where measures are required to maintain a plant community that the area is intended to represent. Neither timber production nor timber harvest are allowed under the

regulations. The Gila River Research Natural Area at the Gila River Bird Area is the only existing designated Research Natural Area in the forest, which covers 393 acres.

Eligible Wild and Scenic River Segments

Most eligible Wild and Scenic River segments identified on the Gila National Forest are located within existing designated wilderness areas, which are removed from the suitable timber base by the Wilderness Act of 1964 as previously described. Forest Service handbook direction (1909.12 Chapter 80) requires that Forest Service-identified eligible rivers must be protected to maintain their free flowing nature and outstandingly remarkable values, unless a determination of non-suitability is made. Forest Service decision makers may authorize site-specific projects and activities within Forest Service-identified eligible river corridors when those projects and activities are consistent with maintaining free flow and the outstandingly remarkable values associated with the particular site. A suitability study may also be undertaken to resolve conflicts between mandates for management of eligible rivers and other resource management concerns. The width of the corridor receiving these protection measures is generally one-quarter mile on each side of the river, averaging no more than 320 acres per mile for the length of the segment. Congress has the authority to adjust from these generalities.

There are three classifications of eligible Wild and Scenic rivers, Wild, Scenic and Recreational, with Wild being the most restrictive, Scenic being somewhat less, and Recreational being comparatively permissive in the range of allowable developments and management actions. Cutting of trees and other vegetation is not permitted for eligible rivers receiving a preliminary classification as Wild, except as consistent with a primitive recreation experience, to accommodate valid existing legally established rights and uses, or to protect identified outstandingly remarkable values. Such exceptions may include trail maintenance, wildfire suppression, or fires managed to restore or maintain habitat for threatened, endangered, or species of conservation concern or to restore the natural range of variability. A range of additional vegetation management and timber harvest practices are allowed along eligible rivers with a preliminary classification of Recreational or Scenic, if these practices are designed to protect users, outstandingly remarkable values, or protect, restore, or enhance the river environment, including the long-term scenic character.

Timber production is not compatible with the preliminary classification of Wild, and thus these eligible stream corridors are not suited for timber production based on the legal criteria, regardless of where they occur. There are a total of 224.11 miles of eligible Wild and Scenic Rivers with a preliminary classification of Wild, representing approximately 71,715 acres.

Technical Criteria

The Gila National Forest interdisciplinary team's rationale to the technical factors under which land is deemed not suited for timber production is described in the following subsections. These areas include those where the technology does not exist to harvest timber without causing irreversible damage to soil, slope or other watershed conditions, those where there is no reasonable assurance of adequate restocking, and lands that are not forest lands.

Irreversible Damage to Soil, Slope or Other Watershed Condition

The term "irreversible damage" is not defined in the directives. The interdisciplinary team interpreted "irreversible" to mean impairment of soil and watershed processes and functions that would take longer than a human lifetime to recover. The primary processes and functions of concern are soil stability, soil water holding capacity, water infiltration and redistribution, and nutrient

cycling. Accelerated soil loss or compaction can alter all of these watershed functions. However, the extent and magnitude of accelerated soil loss and/or compaction due to vegetation management activities can be usually be mitigated through selection of the appropriate harvesting system and equipment, and implementation of best management practices (BMPs). Therefore, zero acres were removed from suitability under this criterion.

No Reasonable Assurance of Adequate Restocking

The term “final regeneration harvest” describes any timber harvest designed to promote regeneration of desirable and/or commercial tree species. The primary commercial forest tree species is ponderosa pine, although other forest tree species such as Douglas-fir also have commercial value. The term “adequate restocking” is defined for the Gila National Forest in the following table.

Table 2. Minimum restocking criteria to determine adequacy of lands for timber production

Management System	Final Regeneration Harvest Type	Forest Type (ERU)	Adequate Restocking Criteria* (Trees per Acre)
Even Aged	Final Shelterwood Removal	Ponderosa Pine Forest and Ponderosa Pine-Evergreen Oak	>100 seedlings
Even Aged	Final Shelterwood Removal	Mixed Conifer-Frequent Fire and Mixed Conifer with Aspen	>150 seedlings
Uneven Aged	Last Group Selection Entry	Ponderosa Pine Forest and Ponderosa Pine Evergreen Oak	>10 trees above 10" DBH** and >30 seedlings
Uneven Aged	Last Group Selection Entry	Mixed Conifer Frequent Fire and Mixed Conifer with Aspen	>10 trees above 10" DBH** and >35 seedlings

*Minimum stocking is based on sites capable of producing 50+ cubic feet per acre. Sites with lower productivity would likely have fewer seedlings per acre.

**Diameter at breast height

Natural regeneration or restocking of stands depends on weather patterns that support a good cone crop, and subsequent weather patterns that permit the germination and establishment of seedlings and saplings. In the Southwestern climate, it may be decades before favorable conditions support natural regeneration. Artificial regeneration, by way of planting trees, varies in its success depending on climate and weather, soils, topographic characteristics of the site (e.g., elevation, aspect, slope, and topographic position), planting density, seedling protection and other factors.

The Gila National Forest IDT identified lands where there is “no reasonable assurance that lands could be adequately restocked within 5 years of final regeneration harvest” using the TEUI climate classification, which takes climate, topographic characteristics and soils into consideration. Using this classification, moisture-limited sites were removed from suitability. On sites such as these, ponderosa pine establishment and survival under the current climatic regime is episodic and site indices are low. Site indices are a measure of site productivity based on tree height, diameter and age.

These areas are represented by TEUs 87, 102, 131, 151, 186, 188, 274, 501, 553, 554, 573, 574, 575, 585, 605, 610, 618, 681, 687, 691, 693, 694 and 698.

Lands that are not Forest Lands

The Forest Service national directives define “lands that are not forest lands” as those lands which are less than 10 percent occupied by forest trees of any size or that formerly had such tree cover and are currently developed for non-forest uses. Lands that were formerly occupied by tree cover, but do not presently have tree cover, should be identified as non-forest unless the land will be naturally or artificially regenerated into forest cover in the near future.

To identify lands developed for non-forest uses, the IDT used the Gila National Forest’s corporate dataset to include acreage under transmission lines with rights of way over 120 feet and major US highways and rights of way. The remaining lands developed for non-forest uses are either less than 120 feet in width, or are otherwise limited in acreage and are not included in the spatial display or volume calculations. Using the forest’s ERU geospatial layer, shrublands, grasslands, woodlands and riparian areas were also removed under this criterion.

Compatibility with Desired Conditions and Objectives in the Plan

Lands removed under this step of the suitability analysis were identified and described previously in Volume 1, Chapter 3 under the Timber, Forest and Botanical Products Analysis Methodology heading. They are those lands where cutting trees for the purposes of timber production is not compatible with the desired conditions for Inventoried Roadless Areas, recommended wilderness areas, soil and watershed resources or with the vegetation objectives. Rather than reiterating what has already been discussed, the TEUs associated with desired conditions for soil and watershed resources are identified. These are: 174 (Datil soils) only where it occurs on slopes greater than 15 percent; 108, 150, 278, 312, 313, 633, 635, 636, 638, 657, 661, 662, 671, 675, 676, 678, 685, 686 and 696 (soils with little or no soil development or erosional landforms) only where they occur on slopes greater than 25 percent. All other TEUs not used under other suitability criteria on slopes greater than 40 percent were determined to be not suited for timber production because the greater cost per acre to cut trees on these acres would detract from the achievement of vegetation objectives.

NFMA (2012 Planning Rule) Required Calculations

This section provides more detail regarding the National Forest Management Act (NFMA) required calculations for sustained yield limit (SYL), projected timber sale quantity (PTSQ) and projected wood sale quantity (PWSQ).

Sustained Yield Limit

Southwestern Regional Office staff developed the basis for calculating the SYL based on the so-called “regionally consistent desired conditions for vegetation”. These are the desired conditions contained in the draft plan and its alternatives. This basis is only sound for the set of conditions as described. If desired conditions vary significantly from the regionally consistent desired conditions, a new SYL calculation would be required (Youtz and Vandendrieche 2015).

Using Forest Inventory and Analysis (FIA) plot data from region-wide sites Regional Office staff determined were representative of the region as a whole, the Forest Vegetation Simulator (FVS) was calibrated for the following variables by vegetation type and site index:

- Diameter growth
- Stand density mortality
- Tree senescence mortality

- Seen tree defect
- Merchantable cubic feet volumes
- Merchantable board feet volumes
- Natural tree regeneration

The FVS model was then run over time periods sufficient for volume projections to stabilize. The annual average volume after projections stabilize is then used in conjunction with number of suitable acres in each ERU to calculate annual and decadal values for the SYL (Youtz and Vandendrieche 2015).

Estimated Vegetation Practices

The general prescribed cutting practices and acres of harvest are calculated based on the silvicultural input provided for the state-and-transition modeling as described in Appendix B: State-and-Transition Modeling Process, the objectives in the draft plan and each of its alternatives, and the state-and-transition model outputs. It is recommended that the interested reader refer to Appendix B prior to continuing with this appendix.

The number of prescribed cutting methods supported in models were optimized to lessen the workload and still provide a reasonably robust way to obtain the information necessary to fulfill important requirements of the National Forest Management Act (NFMA)(Boening 2014). Cutting methods are further grouped for reporting requirements to include regeneration harvest to promote establishment of additional age-classes, uneven-aged intermediate thinning and uneven-aged stand improvement/selection harvest¹. Based on the expert opinion of the forest silviculturist and vegetation/fuels program manager, state-and-transition model inputs were developed for each ERU based on which cutting methods are likely to be used, how often particular vegetative conditions (state classes) would be targeted with a particular cutting method, and how vegetative conditions are likely to change as a result of each cutting method, immediately after harvest. This information was then related to the number of acres of each ERU proposed for treatment under each alternative to complete the state-and-transition model inputs.

Model outputs include the number of acres treated per year by state class and cutting method. The 100-year model run output files were used to summarize each of the first two decades.

Projected Timber Sale Quantity and Projected Wood Sale Quantity

To calculate PTSQ and PWSQ, the same state-and-transition model output files and summarization process described above was used. The number of acres of each prescribed cutting method by vegetation type and pre-treatment conditions were entered into a Microsoft Excel calculator built by Regional Office staff (Weisz et al. 2011). This calculator tool contains volume coefficients coming from the FVS model outputs previously described.

Limitations

The FVS model it is not directly sensitive to future fluctuations in the climatic variables that influence tree growth, such as temperature patterns, rainfall patterns and atmospheric carbon dioxide levels. Instead, growth is estimated by relationships between the tree's size, crown ratio and position in the stand that are based on equations developed from field-collected data (Crookston and Dixon 2005).

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Appendix D. Documentation of the Analyses of At-Risk Species

Crosswalk between At-Risk Species Habitat Characteristics/Ecological Conditions, Potential Stressors, and Plan Components

At-risk species are identified as federally recognized threatened, endangered, proposed, and candidate species, as well as potential species of conservation concern (SCC). Further, SCCs are defined in the 2012 Planning Rule as “a species, other than federally recognized threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species’ capability to persist over the long-term in the plan area.” Table 3 is a crosswalk used to show plan components that meet at-risk species’ habitat needs and provide for species ability to persist. Detailed information on individual species can be found in Chapter 8 and Appendix G of the Gila National Forest Final Assessment Report ([link](#)). The Gila National Forest at-risk species are as follows[§]:

Amphibians: Arizona toad, Chiricahua leopard frog*

Reptiles: Narrowheaded gartersnake*, Northern Mexican gartersnake*

Birds: Gila woodpecker, Lewis’s woodpecker, Southwestern willow flycatcher*, Mexican spotted owl*, Yellow-billed cuckoo*

Fish: Rio Grande sucker, Roundtail (Headwater) chub, Gila chub*, Loach minnow*, Spikedace*, Chihuahua chub*, Gila trout*

Invertebrates: “Gila” mayfly, *Capnia caryi*, Bearded mountainsnail, *Oreohelix metcalfei acutidiscus*, *O. m. hermosensis*, *Ashmunella cockerelli*, Cockerell holospira snail, Gila springsnail, Iron Creek woodlandsnail, Marsh slug snail, Mineral Creek mountainsnail, Morgan Creek mountainsnail, New Mexico hot springsnail, Nitocris fritillary butterfly, *Ashmunella cockerelli argenticola*, *A. c. perobtusa*, *A. tetrodon animorum*, *A. t. inermis*, *A. t. mutator*, *Oreohelix metcalfei radiata*, *O. m. concentrica*, Silver Creek woodlandsnail, Sonoran snaggletooth snail, *Taenionema jacobii*, *Alexicles aspersa*, Western bumblebee, Whitewater Creek woodlandsnail

Mammals: Arizona montane vole, Gunnison’s prairie dog, lesser long-nosed bat, Mexican gray wolf*, New Mexican meadow jumping mouse*

Plants: Arizona crested-coralroot, Chiricahua Mountain mudwort, Cliff brittlebrush, Davidson’s cliff carrot, Gooding’s onion, Greene milkweed, Heartleaf groundsel, Hess’s fleabane, Metcalfe’s penstemon, Mimbres figwort, Mogollon clover, Mogollon death camas, Mogollon hawkweed, Mogollon Mountain lousewort, Piños Altos flame flower, Porsild’s starwort, Ray Turner’s spurge, Wooton’s hawthorn, Wright’s catchfly (campion), Wright’s dogweed, Yellow lady’s-slipper

Plan components in the last column of table 3 relate to chapter 2 of the Draft Forest Plan. As a footnote of the table, there are codes for vegetation types. Additionally, coding for plan components in the final column are DC = Desired Condition, and the number following DC, Standard, or

[§] An * after a species indicates that it is federally listed.

Guideline relates to the number of the plan component from the Draft Forest Plan. For example, to find Soils – DC 1a, the reader would go to the Draft Forest Plan, chapter 2, Soils section, and scroll down to Desired Condition 1a to see the related plan component.

Table 3. Crosswalk used to show plan components that meet at-risk species habitat needs and provide for species ability to persist

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Tree dependent: Gila woodpecker, Lewis’s woodpecker, Mexican spotted owl*, <i>A. c. argenticola</i>, <i>A. t. animorum</i>, <i>A. t. inermis</i>, <i>A. t. mutator</i>, Whitewater Creek woodlandsnail, Sonoran snaggletooth snail, Bearded mountainsnail, Iron Creek woodlandsnail, Morgan Creek mountainsnail, Silver Creek woodlandsnail</p>	<p>Large trees and snags, cavities, downed logs, and mistletoe broom</p>	<p>Logging, large-scale wildfire, forest treatments (prescribed fire, thinning), fuelwood collection, and pile burning</p>	<p>All Upland ERUs¹ – all DC’s and Guidelines. SFF ERU – Landscape Scale DCs 1-5, Mid-scale DCs 2-4, Fine-scale DC 1. MCW ERU – Landscape Scale DCs 1-5, Mid-scale DCs 2-4, & 6, Fine-scale DC 1. MCD ERU – Landscape Scale DCs 1-5, Mid-scale DCs 2-5, & 7, Fine-scale DC 1. PPF ERU – Landscape Scale DCs 1-6, Mid-scale DCs 2-5, & 7, Fine-scale DC 1. PPE ERU – Landscape Scale DCs 1, & 3-6, Mid-scale DCs 2-5, & 7, Fine-scale DC 1. MPO ERU – Landscape Scale DCs 1 & 2, Mid-scale DCs 4-7, Fine-scale DCs 1-3. PJO ERU – Landscape Scale DCs 1-3, Mid-scale DCs 1-3 PJG & JUG ERUs – Landscape Scale DCs 1 & 2, Mid-scale DCs 1 & 2, Fine-scale DC 1. MMS ERU – Landscape Scale DCs 1 & 2, Mid-scale DC 1.</p>
<p>Tree dependent: Gila woodpecker, Lewis’s woodpecker, Mexican spotted owl*, <i>A. c. argenticola</i>, <i>A. t. animorum</i>, <i>A. t. inermis</i>, <i>A. t. mutator</i>, Whitewater Creek woodlandsnail, Sonoran snaggletooth snail, bearded mountainsnail, Iron Creek woodlandsnail, Morgan Creek mountainsnail, Silver Creek woodlandsnail (<i>continued</i>)</p>	<p>Large trees and snags, cavities, downed logs, and mistletoe broom</p>	<p>Logging, large-scale wildfire, forest treatments (prescribed fire, thinning), fuelwood collection, and pile burning</p>	<p>Soils – DCs 1a-c & 1e, All Standards, All Guidelines. Watersheds – DC 1c, All Standards, All Guidelines. Riparian and Aquatic Ecosystems – Watershed Scale DCs 3c & 3e, Fine-scale DCs 1c-e, Standards 1 & 3, Guidelines 3-5. Wildlife, Fish and Plants – DCs 5 & 6, Guideline 1c, 3, & 6. Rare and Endemic Plant and Animal Species and Habitats – DC 2. Wildland Fire and Fuels Management – DCs 5a-c, Guidelines 1 & 3. Livestock Grazing – DC 3. Timber, Forest, and Botanical Products – DCs 1a-c, 2c-g, Standards 6a-c, 7-9, Guidelines 3, 6a, & 7. Facilities – DC 2, Guideline 3. Locatable Minerals – DC 1, Guideline 2.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Tree dependent: <i>A. c. argenticola</i>, <i>A. t. animorum</i>, <i>A. t. inermis</i>, <i>A. t. mutator</i>, Whitewater Creek woodlandsnail, Sonoran snaggletooth snail, bearded mountainsnail, Iron Creek woodlandsnail, Morgan Creek mountainsnail, Silver Creek woodlandsnail</p>	<p>Leaves, bark, woody debris</p>	<p>Flooding</p>	<p>All Upland ERUs¹ – DCs 1, 2, 5, 7, and 8. Soils – DCs 1c and Standard 2. Water Quality – DC 1. Watersheds – DC 1a-e, Standard 1, Guideline 2. Riparian and Aquatic Ecosystems – Watershed Scale DCs 1, 3a, 3c-e, 3g, & 4, Fine-scale DCs 1a-c, 1e, & 2, Standards 1, 3, & 6, Guidelines 1, 2, 4-6. Wildlife, Fish and Plants – DCs 1-7, Guideline 5, 6, & 9. Rare and Endemic Plant and Animal Species and Habitats – All DCs. Wildland Fire and Fuels Management – DCs 5a-c, Standards 2 & 5, Guideline 3. Water Uses – DCs 1-3. Livestock Grazing – DC 3, Standards 2 & 4, Guidelines 1, & 4. Timber, Forest, and Botanical Products – DCs 1a, 1c, 2e, 2f, Standards 1, 3, 4, Guidelines 3, 6, & 7. Locatable Minerals – DC 1, Guidelines 2, 3, & 6. Salable/Mineral Materials – DCs 1 & 3, Standard 1, Guideline 4. Roads – DCs 4 & 5, Standard 1, Guidelines 1-4. Sustainable Recreation – DCs 1, 2, & 4, Guideline 4. Developed Recreation – Standards 1 & 2, Guideline 1. Dispersed Recreation – DC 1, Guideline 3. Special Uses (Recreation) – DCs 1 & 2, Standard 1. Trails – Guideline 6. Motorized Trails – Guidelines 3, 5, 7, & 8. Non-Motorized Trails – Guideline 2.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Interlocking canopy and old growth: Mexican spotted owl*, Southwestern willow flycatcher*, Yellow-billed cuckoo*, Gila woodpecker, bearded mountainsnail, Iron Creek woodlandsnail, marsh slug snail, Morgan Creek mountainsnail, Silver Creek woodlandsnail, <i>A. c. argenticola</i>, <i>A. t. animorum</i>, <i>A. t. inermis</i>, <i>A. t. mutator</i>, Whitewater Creek woodlandsnail, Sonoran wngaggletooth snail, Arizona crested-coralroot, Gooding’s onion, Heartleaf groundsel, Mogollon Mountain lousewort, Metcalfe’s penstemon, Mimbres figwort, Porsild’s starwort, Mogollon death camas</p>	<p>Interlocking canopy, old growth, and denser stands</p>	<p>Logging, large-scale wildfire, forest treatments (prescribed fire, thinning), fuelwood</p>	<p>All Upland ERUs – DCs 1-3b, 7, & 8, Guideline 1. SFF ERU – Landscape Scale DCs 1-5, Mid-scale DCs 2 & 4, Fine-scale DC 1. MCW ERU – Landscape Scale DCs 1-5, Mid-scale DCs 2-4, & 6, Fine-scale DC 1. MCD ERU – Landscape Scale DCs 1-4, Mid-scale DCs 2, 4, 5, & 7, Fine-scale DC 1 PPF ERU – Landscape Scale DCs 1-5, Mid-scale DCs 2, 4, 5, & 7, Fine-scale DC 1. PPE ERU – Landscape Scale DCs 1-5, Mid-scale DCs 2-5, & 7, Fine-scale DC 1. MPO ERU – Landscape Scale DCs 1 & 2, Mid-scale DCs 2, 4, & 5, Fine-scale DCs 1 & 3. PJO ERU – Landscape Scale DCs 1-3, Mid-scale DCs 1 & 2. PJG & JUG ERUs – Landscape Scale DC 2, Mid-scale DC 1, Fine-scale DC 1 MMS ERU – Landscape Scale DC 1. Riparian and Aquatic Ecosystems – Watershed Scale DCs 1, 3a, 3b, 3e & 3f, Fine-scale DCs 1b, 1c, & 1f, Standard 1, Guideline 5. Wildlife, Fish and Plants – DCs 1, 3-7, & 9, Guideline 1c, 3, 6, & 9. Non-native Invasive Species – DC 1, Standard 10 & 15. Wildland Fire and Fuels Management – DCs 5a-c. Livestock Grazing – DC 3 & 4, Standards 2 & 4, Guidelines 1 & 4. Timber, Forest, and Botanical Products – DCs 1a & 1c, 2c, 2d, & 2f, Standards 6a & 6b, Guidelines 2, 3, & 6a. Roads – DC 4, Guideline 1, 3, & 4. Facilities – DC 2, Guideline 3. Locatable Minerals – DC 1, Guideline 2. Dispersed Recreation – DC 1. Motorized Trails – Guidelines 2, 3, & 7.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Interlocking canopy and old growth: Arizona crested-coralroot, Gooding’s onion, Heartleaf groundsel, Mogollon Mountain lousewort, Metcalfe’s penstemon, Mimbres figwort, Porsild’s starwort, Mogollon death camas</p>	<p>Interlocking canopy, old growth, and denser stands</p>	<p>Collection, misidentification during treatment of non-native plant species (mechanical, herbicide)</p>	<p>Rare and Endemic Plant and Animal Species and Habitats – Guideline 2. Non-native Invasive Species – Standards 6, 10, Guidelines 1, 6, & 8. Tribal Importance and Use – DCs 2 & 3, Standard 1, Guideline 3. Wildland Fire and Fuels Management – Standard 4. Livestock Grazing – Standards 2, Guidelines 1 & 4. Timber, Forest, and Botanical Products – DCs 1, 2a, & 2g, Standard 9, Guidelines 1 & 2.</p>
<p>Woodland dependent: Arizona toad, Iron Creek woodlandsnail, Western bumble bee, Gunnison’s prairie dog, Lesser long-nosed bat, Davidson’s cliff carrot, Greene’s milkweed, Gila morning glory, Mimbres figwort, Piños Altos flame flower, Wright’s dogweed, Arizona crested-coralroot, Ray Turner's spurge</p>	<p>Openness of stands, structural diversity of stands</p>	<p>Tree invasion, mechanical thinning, wildfire,</p>	<p>All Upland ERUs – DCs 1-5, 7, & 8, Standards 1 & 5, Guidelines 1 & 3. MPO ERU – Landscape Scale DCs 1 & 2, Mid-scale DCs 1-7, Fine-scale DCs 1-3. PJO ERU – Landscape Scale DCs 1-3, Mid-scale DCs 1-3. PJG & JUG ERUs – Landscape Scale DCs 1 & 2, Mid-scale DCs 1 & 2, Fine-scale DC 1. All Grassland ERUs – Landscape Scale DCs 1 & 2, Mid-scale DC 1-3, Fine-scale DC 1. Soils – DC 1a-d, Standard 1 & 2, Guidelines 2 & 3. Watersheds – DC 1c, Standard 2, Guidelines 1 & 2. Riparian and Aquatic Ecosystems – Watershed Scale DC 2. Cliffs and Rocky Features – Guidelines 5 & 6 Wildlife, Fish and Plants – DCs 1-6 & 11, Guideline 3 & 6 Rare and Endemic Plant and Animal Species and Habitats – DC 2. Non-native Invasive Species – DC 1, Standard 1-10, 12, 15, & 17, Guideline 1-3, & 5-8. Tribal Importance and Use – DCs 2-4, Guidelines 2-4. Wildland Fire and Fuels Management – DC 5a-c & 6, Standard 4 & 6, Guidelines 1 & 2. Livestock Grazing – DCs 2-4, Standards 1, 2, & 4, Guidelines 1-6 Timber, Forest, and Botanical Products – DCs 1a-c, 2c, 2d, 2f, & 2g, Standards 1, 3, 4, 6a, 6b & 9, Guidelines 1-3, 5, 6a, & 7. Locatable Minerals – DC 1, Guidelines 2, 5, & 10.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Woodland dependent: Arizona toad, Iron Creek woodlandsnail, Davidson’s cliff carrot, Greene’s milkweed, Gila morning glory, Mimbres figwort, Piños Altos flame flower, Wright’s dogweed, Arizona crested-coralroot, Ray Turner’s spurge</p>	<p>Openness of stands, structural diversity of stands</p>	<p>Erosion, trampling/soil compaction</p>	<p>All Upland ERUs – DCs 1, 2, & 5, Standards 2-4. MPO ERU – Landscape scale DC 3, Mid-scale DCs 1, 2, 6, & 7, Fine –scale DC 1. PJO ERU – Landscape scale DC 4, Mid-scale DCs 2 & 3. Soils – All DCs, Standards, and Guidelines. Watersheds – All DCs, Standards, and Guidelines. Riparian and Aquatic Ecosystems – Watershed scale DCs 1, 3a, c-e, & 4, Fine-scale DCs 1a-c & 2, Standards 1, 3, & 6, Guidelines 1, 3, & 5. Cliffs and Rocky Features – DC 1, Guidelines 2-6. Caves and Abandoned Mine Lands – DC 2, Guideline 4. Wildlife, Fish and Plants – DCs 7 & 8, Guideline 9. Non-native Invasive Species – DC 1, Standard 4, and Guideline 2. Wildland Fire and Fuels Management – DCs 1 & 5a-c, Standards 2 & 6, and Guidelines 1 & 2. Water Uses – DCs 1 & 2. Livestock Grazing – All DC 3, Standards 1, 2, & 4, and Guidelines 1-6. Timber, Forest, and Botanical Products – DCs 1a-c, 2a, 2c-f, Standards 1, 3, & 4. Locatable Minerals – DC 1, Standards 3 & 4, and Guidelines 2, 3, & 5-7. Salable Mineral Materials – All DCs, all Standards, and Guidelines 3, 4, & 6-9. Roads – DCs 4 & 5, Guidelines 1 & 2 Facilities – DC 2, Guideline 2. Sustainable Recreation – DCs 1 & 2, Standard 4, and Guideline 4. Developed Recreation – DC 1, Guideline 1. Dispersed Recreation – DC 1, Guidelines 2 & 3. Special Uses (Recreation) – All DCs. Trails – DCs 4-7, Guidelines 1, 2, 4, 5c, & 6. Motorized Trails – DCs 2-4, Standards 1 & 4, and Guidelines 2-5, & 7. Non-motorized Trails –Guideline 2.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Woodland dependent: Davidson’s cliff carrot, Greene’s milkweed, Gila morning glory, Mimbres figwort, Piños Altos flame flower, Wright’s dogweed, Arizona crested-coralroot, Ray Turner’s spurge</p>	<p>Openness of stands, structural diversity of stands</p>	<p>Misidentification during treatment of non-native plant species (mechanical, herbicide), collection</p>	<p>Rare and Endemic Plant and Animal Species and Habitats – Guideline 2. Non-native Invasive Species – Standards 6, 10, Guidelines 1, 6, & 8. Tribal Importance and Use – DCs 2 & 3, Standard 1, Guideline 3. Wildland Fire and Fuels Management – Standard 4. Livestock Grazing – Standards 2, Guidelines 1 & 4. Timber, Forest, and Botanical Products – DCs 1, 2a, & 2g, Standard 9, Guidelines 1 & 2.</p>
<p>Grassland/ Meadow/Soil dependent: Nitocris fritillary butterfly, western bumblebee, Arizona montane vole, Gunnison’s prairie dog, Arizona crested-coralroot, Chiricahua Mountain mudwort, Gila morning glory, Greene’s milkweed, Mogollon clover, Mogollon hawkweed, Piños Altos flame flower, Ray Turner’s spurge, Wright’s dogweed, yellow lady’s slipper</p>	<p>Composition, openness, diversity and abundance of forbs, soil properties</p>	<p>Invasive plants, conifer/woodland encroachment, mechanical thinning, wildfire</p>	<p>All Upland ERUs – DCs 1-5, 7, & 8, Standards 1-5, Guidelines 1 & 3. MCD ERU – Fine-scale DC 2. PPF ERU – Fine-scale DC 2. PPE ERU – Fine-scale DC 2. MPO ERU – Fine-scale DC 1. PJG & JUG ERUs – Mid-scale DC 2. All Grassland ERUs – All landscape, mid-, and fine-scale DCs. Soils – DCs 1a-c & 1e, all Standards and Guidelines. Watersheds – DC 1c & 1g, Standard 2, Guideline 1. Riparian and Aquatic Ecosystems – Watershed scale DC 2, Fine-scale DC 1f, Standard 2. Cliffs and Rocky Features – Guidelines 5 & 6.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Grassland/ Meadow/Soil dependent: Nitocris fritillary butterfly, western bumblebee, Arizona montane vole, Gunnison’s prairie dog, Arizona crested-coralroot, Chiricahua Mountain mudwort, Gila morning glory, Greene’s milkweed, Mogollon clover, Mogollon hawkweed, Piños Altos flame flower, Ray Turner’s spurge, Wright’s dogweed, yellow lady’s slipper (<i>continued</i>)</p>	<p>Composition, openness, diversity and abundance of forbs, soil properties</p>	<p>Invasive plants, conifer/ woodland encroachment, mechanical thinning, wildfire</p>	<p>Caves and Abandoned Mine Lands – Guidelines 2 & 3. Wildlife, Fish, and Plants – DCs 1-3, 5-7, & 11, Guidelines 3, 6, & 10. Rare and Endemic Plant and Animal Species and Habitats – DC 2. Non-native Invasive Species – DC 1, Standard 1-10, 12, 15, & 17, Guideline 1-3 & 5-8 Tribal Importance and Use – DCs 2-4, Guidelines 2-4. Wildland Fire and Fuels Management – DC 5a-c & 6, Standard 4 & 6, Guidelines 1 & 2. Livestock Grazing – DCs 2-4, Standards 1, 2, & 4, Guidelines 1-6. Timber, Forest, and Botanical Products – DCs 1a-c, 2c, 2d, 2f, & 2g, Standards 1, 3, 4, 6a-c, & 9, Guidelines 1-3, 5, 6a, & 7. Locatable Minerals – DC 1, Guidelines 2, 5, & 10. Trails – DC 4 Guideline 7. Motorized trails – Guidelines 3-5. Non-motorized trails – Guideline 2.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Grassland/ Meadow/Soil dependent: Nitocris fritillary butterfly, western bumblebee, Arizona montane vole, Arizona crested-coralroot, Chiricahua Mountain mudwort, Gila morning glory, Greene’s milkweed, Mogollon clover, Mogollon hawkweed, Piños Altos flame flower, Ray Turner’s spurge, Wright’s dogweed, yellow lady’s slipper</p>	<p>Composition, openness, diversity and abundance of forbs, soil properties</p>	<p>Erosion, trampling/soil compaction from ungulate grazing</p>	<p>All Upland ERUs – DCs 1, 2, & 5, Standards 2-4. PJG & JUG ERUs – Landscape scale DC 3, Mid-scale DC 2. MMS ERU – Mid-scale DC 1. Grassland ERUs – Landscape scale DCs 2 & 3, Mid-scale DCs 1 & 2. Soils – All DCs, Standards, and Guidelines. Watersheds – All DCs, Standards, and Guidelines. Riparian and Aquatic Ecosystems – Watershed scale DCs 1, 3a, c-e, & 4, Fine-scale DCs 1a-c & 2, Standards 1, 3, & 6, Guidelines 1, 3, & 5. Cliffs and Rocky Features – DC 1, Guidelines 2-6. Caves and Abandoned Mine Lands – DC 2, Guideline 4. Wildlife, Fish and Plants – DCs 7 & 8, Guideline 9. Non-native Invasive Species – DC 1, Standard 4, and Guideline 2. Wildland Fire and Fuels Management – DCs 1 & 5a-c, Standards 2 & 6, and Guidelines 1 & 2. Water Uses – DCs 1 & 2. Livestock Grazing – DC 3 & 4, Standards 1, 2, & 4, and Guidelines 1-6. Timber, Forest, and Botanical Products – DCs 1a-c, 2a, 2c-f, Standards 1, 3, & 4. Locatable Minerals – DC 1, Standards 3 & 4, and Guidelines 2, 3, & 5-7. Salable Mineral Materials – All DCs, all Standards, and Guidelines 3, 4, & 6-9. Roads – DCs 4 & 5, Guidelines 1 & 2. Facilities – DC 2, Guideline 2. Sustainable Recreation – DCs 1 & 2, Standard 4, and Guideline 4. Developed Recreation – DC 1, Guideline 1. Dispersed Recreation – DC 1, Guidelines 2 & 3. Special Uses (Recreation) – All DCs. Trails – DCs 4-7, Guidelines 1, 2, 4, 5c, & 6. Motorized Trails – DCs 2-4, Standards 1 & 4, and Guidelines 2-5, & 7. Non-motorized Trails – Guideline 2.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Grassland/ Meadow/Soil dependent: Nitocris fritillary butterfly, Arizona crested-coralroot, Chiricahua Mountain mudwort, Gila morning glory, Greene’s milkweed, Mogollon clover, Mogollon hawkweed, Piños Altos flame flower, Ray Turner’s spurge, Wright’s dogweed, yellow lady’s slipper</p>	<p>Composition, openness, diversity and abundance of forbs, soil properties</p>	<p>Misidentification during treatment of non-native plant species (mechanical, herbicide), collection</p>	<p>Rare and Endemic Plant and Animal Species and Habitats – Guideline 2. Non-native Invasive Species – Standards 6, 10, Guidelines 1, 6, & 8. Tribal Importance and Use – DCs 2 & 3, Standard 1, Guideline 3. Wildland Fire and Fuels Management – Standard 4. Livestock Grazing – Standards 2, Guidelines 1 & 4. Timber, Forest, and Botanical Products – DCs 1, 2a, & 2g, Standard 9, Guidelines 1 & 2.</p>
<p>Riparian dependent: Arizona toad, Chiricahua leopard frog*, Narrow-headed gartersnake*, Northern Mexican gartersnake*, Southwestern willow flycatcher*, Western yellow-billed cuckoo*, Gila woodpecker, Lewis’s woodpecker, A Stonefly (<i>C. caryi</i>), Bearded mountainsnail, “Gila” mayfly (<i>L. dencyanna</i>), <i>A.c. argenticola</i>, <i>A.t. animorum</i>, <i>A.t. inermis</i>, <i>A.t. mutator</i>, Sonoran snaggletooth snail, Stonefly (<i>T. jacobii</i>), Whitewater Creek woodlandsnail, Arizona montane vole, New Mexican meadow jumping mouse*, Chiricahua Mountain mudwort, Gooding’s onion, Metcalfe’s penstemon, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s-slipper</p>	<p>Permanent open water, dense thickets of shrubby vegetation, structural heterogeneity, full complement of tree age size classes, snags, streamside vegetation, connected floodplains</p>	<p>Dewatering or channelization, increased sedimentation</p>	<p>Soils – All DCs, Standards and Guidelines. Water Quality – DC 1. Watersheds – All DCs, Standards, and Guidelines. Riparian and Aquatic Ecosystems – All watershed scale DCs, Fine-scale DCs 1 & 2, All standards and guidelines. Fish, Wildlife, and Plants – DCs 1-7, 9, & 11, Objectives 3 & 5, Standard 1, Guidelines 2-6, & 9 Rare and Endemic Plant and Animal Species and Habitats – All DCs. Nonnative Invasive Species – DC 1, Objectives 1-4, Standards 1-4, 6-10, & 12, Guidelines 1, 2, & 5-7. Wildland Fire and Fuels Management – DC 5a-c & 6, Standards 4-6, and all Guidelines. Water Uses – DCs 1-4. Livestock Grazing – DCs 3 & 4, Standards 2-4, Guidelines 1-4. Timber, Forest, and Botanical Products – DCs 1a-c & 2e-g, Standards 1, 3, 4, & 9, Guidelines 1-3, 6a, & 7. Locatable Minerals – DC 1, Guidelines 2, 3, 5-7, & 10. Salable/Mineral Materials – DCs 2 & 3, Standard 1, Guidelines 4 & 9. Roads – DCs 4 & 5, Guidelines 1-4. Facilities – DC 2, Guideline 2. Developed Recreation – Guideline 1.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
Riparian dependent: (continued)		Dewatering or channelization, increased sedimentation	<p>Dispersed Recreation – DC 1, Guideline 3.</p> <p>Trails – DC 4-7, Guideline 5c & 7.</p> <p>Motorized Trails – DC 2 & 5, Standard 4, Guidelines 2-5, 7, & 8.</p> <p>Non-Motorized Trails – Guideline 2.</p>
<p>Riparian dependent: Chiricahua leopard frog*, narrow-headed gartersnake*, northern Mexican gartersnake*, southwestern willow flycatcher*, western yellow-billed cuckoo*, Chiricahua Mountain mudwort, Gooding’s onion, Metcalfe’s penstemon, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s-slipper</p>	<p>Permanent open water, dense thickets of shrubby vegetation, structural heterogeneity, full complement of tree age size classes, snags, streamside vegetation, connected floodplains</p>	<p>Invasion by non-native species</p>	<p>Soils – All DCs, Standards and Guidelines.</p> <p>Water Quality – DC 1.</p> <p>Watersheds – All DCs, Standards, and Guidelines.</p> <p>Riparian and Aquatic Ecosystems – All watershed scale DCs, Fine-scale DCs 1 & 2, All standards and guidelines.</p> <p>Fish, Wildlife, and Plants – DCs 1-7, 9, & 11, Objectives 3 & 5, Standard 1, Guidelines 2-6, & 9.</p> <p>Rare and Endemic Plant and Animal Species and Habitats – All DCs.</p> <p>Non-native Invasive Species – DC 1, Objectives 1-4, Standards 1-4, 6-10, & 12, Guidelines 1, 2, & 5-7.</p> <p>Wildland Fire and Fuels Management – DC 5a-c & 6, Standards 4-6, and all Guidelines.</p> <p>Water Uses – DCs 1-4.</p> <p>Livestock Grazing – DCs 3 & 4, Standards 2-4, Guidelines 1-4.</p> <p>Timber, Forest, and Botanical Products – DCs 1a-c & 2e-g, Standards 1, 3, 4, & 9, Guidelines 1-3, 6a, & 7.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Riparian dependent: Chiricahua leopard frog*, Narrow-headed gartersnake*, Northern Mexican gartersnake*, Southwestern willow flycatcher*, Western yellow-billed cuckoo*, Chiricahua Mountain mudwort, Gooding’s onion, Metcalfe’s penstemon, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, Yellow lady’s-slipper <i>(continued)</i></p>	<p>Permanent open water, dense thickets of shrubby vegetation, structural heterogeneity, full complement of tree age size classes, snags, streamside vegetation, connected floodplains</p>	<p>Invasion by non-native species</p>	<p>Locatable Minerals – DC 1, Guidelines 2, 3, 5-7, & 10. Salable/Mineral Materials – DCs 2 & 3, Standard 1, Guidelines 4 & 9. Roads – DCs 4 & 5, Guidelines 1-4. Facilities – DC 2, Guideline 2. Developed Recreation – Guideline 1. Dispersed Recreation – DC 1, Guideline 3. Trails – DC 4-7, Guideline 5c & 7. Motorized Trails – DC 2 & 5, Standard 4, Guidelines 2-5, 7, & 8. Non-Motorized Trails – Guideline 2.</p>
<p>Riparian dependent: Chiricahua Mountain mudwort, Gooding’s onion, Metcalfe’s penstemon, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s-slipper</p>	<p>Permanent open water, dense thickets of shrubby vegetation, structural heterogeneity, full complement of tree age size classes, snags, streamside vegetation, connected floodplains</p>	<p>Misidentification during treatment of non-native plant species (mechanical, herbicide)</p>	<p>Rare and Endemic Plant and Animal Species and Habitats – Guideline 2. Non-native Invasive Species – Standards 6, 10, Guidelines 1, 6, & 8. Tribal Importance and Use – DCs 2 & 3, Standard 1, Guideline 3. Wildland Fire and Fuels Management – Standard 4. Livestock Grazing – Standards 2, Guidelines 1 & 4. Timber, Forest, and Botanical Products – DCs 1, 2a, & 2g, Standard 9, Guidelines 1 & 2.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Riparian dependent: Arizona toad, Chiricahua leopard frog*, narrow-headed gartersnake*, northern Mexican gartersnake*, southwestern willow flycatcher*, western yellow-billed cuckoo*, Gila woodpecker, Lewis’s woodpecker, A Stonefly (<i>C. caryi</i>), Bearded mountainsnail, “Gila” mayfly (<i>L. dencyanna</i>), <i>A.c. argenticola</i>, <i>A.t. animorum</i>, <i>A.t. inermis</i>, <i>A.t. mutator</i>, Sonoran snaggletooth snail, Stonefly (<i>T. jacobii</i>), Whitewater Creek woodlandsnail, Arizona montane vole, New Mexican meadow jumping mouse*, Chiricahua Mountain mudwort, Gooding’s onion, Metcalfe’s penstemon, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s-slipper</p>	<p>Permanent open water, dense thickets of shrubby vegetation, structural heterogeneity, full complement of tree age size classes, snags, streamside vegetation, connected floodplains</p>	<p>Wildfire, climate change</p>	<p>All Upland ERUs – DCs 1, 2, & 6. SFF ERU – Landscape scale DCs 1 & 6, Mid-scale DC 1. MCW ERU – Landscape scale DCs 1, & 6, Mid-scale DC 1. MCD ERU – Landscape scale DC 6, Mid-scale DCs 1, 3, & 6. PPF ERU – Landscape scale DC 7, Mid-scale DCs 1 & 3. PPE ERU – Landscape scale DC 7, Mid-scale DC 1 & 2. MPO ERU – Landscape scale DCs 2 & 3, Mid-scale DC 1, 3, & 7, Fine-scale DC 1. PJO ERU – Landscape scale DCs 2 & 4, Mid-scale DC 2. PJG & JUG ERUs – Landscape scale DCs 2 & 3, Fine-scale DC 1. MMS ERU – Landscape scale DC 3, Mid-scale DC 1. Grassland ERUs – Landscape scale DCs 1, & 2, Mid-scale DC 1. Soils –DC 1e, Standards 1 & 2. Watersheds – DC 1b, & ci. Riparian and Aquatic Ecosystems – Watershed scale DCs 3a, 3c, Fine-scale DC 1d. Wildlife, Fish and Plants – DC 4. Rare and Endemic Plant and Animal Species and Habitats – DC 2 Wildland Fire and Fuels Management – DCs 2 & 5a-c, Guidelines 1 & 2. Livestock Grazing – DC 2, Guidelines 4-7. Timber, Forest, and Botanical Products – DC 1a, 1c, & 2e.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Riparian dependent: Arizona toad, Chiricahua leopard frog*, narrow-headed gartersnake*, northern Mexican gartersnake*, southwestern willow flycatcher*, western yellow-billed cuckoo*, Gila woodpecker, Lewis’s woodpecker, A Stonefly (<i>C. caryi</i>), Bearded mountainsnail, “Gila” mayfly (<i>L. dencyanna</i>), <i>A.c. argenticola</i>, <i>A.t. animorum</i>, <i>A.t. inermis</i>, <i>A.t. mutator</i>, Sonoran snaggletooth snail, Stonefly (<i>T. jacobii</i>), Whitewater Creek woodlandsnail, Arizona montane vole, New Mexican meadow jumping mouse*, Chiricahua Mountain mudwort, Gooding’s onion, Metcalfe’s penstemon, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s-slipper</p>	<p>Permanent open water, dense thickets of shrubby vegetation, structural heterogeneity, full complement of tree age size classes, snags, streamside vegetation, connected floodplains</p>	<p>Trampling from ungulate grazing</p>	<p>Soils – All DCs, Standards, and Guidelines. Watersheds – All DCs, Standards, and Guidelines. Riparian and Aquatic Ecosystems – Watershed scale DCs 1, 3a, c-e, & 4, Fine-scale DCs 1a-c & 2, Standards 1, 3, & 6, Guidelines 1, 3, & 5. Wildlife, Fish and Plants – DCs 7 & 8, Guideline 9. Water Uses – DCs 1 & 3. Livestock Grazing – DC 3 & 4, Standards 1, 2, & 4, and Guidelines 1-6.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Aquatic dependent (e.g., seeps, springs, streams): Arizona toad, Chiricahua leopard frog*, narrow-headed gartersnake*, northern Mexican gartersnake*, Chihuahua chub*, Gila chub*, Gila trout*, loach minnow*, roundtail (Headwater) chub, spikedace*, Rio Grande sucker, A Stonefly (<i>C. caryi</i>), “Gila” mayfly (<i>L. dencyanna</i>), Gila springsnail, NM hot springsnail, Stonefly (<i>T. jacobii</i>), New Mexican meadow jumping mouse*, Chiricahua Mountain mudwort, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s slipper</p>	<p>Permanent open water, edge vegetation, water quality, connected floodplains</p>	<p>Dewatering or channelization, wetland drainage, altered flow regimes, increased sedimentation, drought, spring development, flood scouring, drought, climate change</p>	<p>Soils – DC 1c & 1d, Objective 2, Standards 1 & 2, Guidelines 2 & 3. Water Quality – DC 1. Watersheds – All DCs, Objectives, Standards, and Guidelines. Riparian and Aquatic Ecosystems – All watershed scale DCs, Fine-scale DCs 1 & 2, Objective 1, All Standards, All Guidelines. Wildlife, Fish, and Plants – DCs 1-5, 7-10, Objectives 1 & 3-5, Guidelines 3-6, & 9. Rare and Endemic Plant and Animal Species and Habitats – All DCs. Nonnative Invasive Species – DC 1, Objectives 4 & 5, Standards 1-3, 5-10, 12, 14, 15, & 17, Guidelines 1, 2, & 4-8. Wildland Fire and Fuels Management – DC 5b & 6, Standards 2 & 4-6, Guideline 2. Water Uses – DCs 1 & 2. Livestock Grazing – DCs 3 & 4, Standards 2-4, Guidelines 1-4. Timber, Forest, and Botanical Products – DCs 1a-c, 2f, & 2g, Standards 1, 3, & 4, Guidelines 1-3 & 6a. Special Uses (Lands) – DC 4. Locatable Minerals – DC 1, Guidelines 2, 3, & 5-7. Salable/Mineral Materials – DCs 2 & 3, Standard 1, Guidelines 4. Roads – DCs 4 & 5, Guidelines 1-4. Facilities – DC 2, Guideline 2. Sustainable Recreation – Standard 4, Guideline 3. Developed Recreation – Standard 1 & 2, Guideline 1. Dispersed Recreation – DC 1, Guideline 3. Special Uses (Recreation) – DC 2, Standards 1 & 2. Trails – DCs 4-7, Guidelines 4, 5c, & 7. Motorized Trails – DC 2 & 5, Standard 4, Guidelines 2-5, 7, & 8. Non-motorized Trails – Guideline 2.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Aquatic dependent (e.g., seeps, springs, streams): Chiricahua leopard frog*, narrow-headed gartersnake*, northern Mexican gartersnake*, Chihuahua chub*, Gila chub*, Gila trout*, loach minnow*, roundtail (Headwater) chub, spikedace*, Rio Grande sucker, Chiricahua Mountain mudwort, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s slipper</p>	<p>Permanent open water, edge vegetation, water quality, connected floodplains</p>	<p>Invasion of non-native species</p>	<p>Soils – DC 1c & 1d, Objective 2, Standards 1 & 2, Guidelines 2 & 3. Water Quality – DC 1. Watersheds – All DCs, Objectives, Standards, and Guidelines. Riparian and Aquatic Ecosystems – All watershed scale DCs, Fine-scale DCs 1 & 2, Objective 1, All Standards, All Guidelines. Wildlife, Fish, and Plants – DCs 1-5, 7-10, Objectives 1 & 3-5, Guidelines 3-6, & 9. Rare and Endemic Plant and Animal Species and Habitats – All DCs. Non-native Invasive Species – DC 1, Objectives 4 & 5, Standards 1-3, 5-10, 12, 14, 15, & 17, Guidelines 1, 2, & 4-8. Wildland Fire and Fuels Management – DC 5b & 6, Standards 2 & 4-6, Guideline 2. Water Uses – DCs 1 & 2. Livestock Grazing – DCs 3 & 4, Standards 2-4, Guidelines 1-4. Timber, Forest, and Botanical Products – DCs 1a-c, 2f, & 2g, Standards 1, 3, & 4, Guidelines 1-3 & 6a. Special Uses (Lands) – DC 4. Locatable Minerals – DC 1, Guidelines 2, 3, & 5-7. Salable/Mineral Materials – DCs 2 & 3, Standard 1, Guidelines 4. Roads – DCs 4 & 5, Guidelines 1-4. Facilities – DC 2, Guideline 2. Sustainable Recreation – Standard 4, Guideline 3. Developed Recreation – Standard 1 & 2, Guideline 1. Dispersed Recreation – DC 1, Guideline 3. Special Uses (Recreation) – DC 2, Standards 1 & 2. Trails – DCs 4-7, Guidelines 4, 5c, & 7. Motorized Trails – DC 2 & 5, Standard 4, Guidelines 2-5, 7, & 8. Non-motorized Trails – Guideline 2.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Aquatic dependent (e.g., seeps, springs, streams): Chiricahua Mountain mudwort, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s slipper</p>	<p>Permanent open water, edge vegetation, water quality, connected floodplains</p>	<p>Misidentification during treatment of non-native plant species (mechanical, herbicide)</p>	<p>Rare and Endemic Plant and Animal Species and Habitats – Guideline 2. Nonnative Invasive Species – Standards 6, 10, Guidelines 1, 6, & 8. Tribal Importance and Use – DCs 2 & 3, Standard 1, Guideline 3. Wildland Fire and Fuels Management – Standard 4. Livestock Grazing – Standards 2, Guidelines 1 & 4. Timber, Forest, and Botanical Products – DCs 1, 2a, & 2g, Standard 9, Guidelines 1 & 2.</p>
<p>Aquatic dependent (e.g., seeps, springs, streams): Arizona toad, Chiricahua leopard frog*, narrow-headed gartersnake*, northern Mexican gartersnake*, Chihuahua chub*, Gila chub*, Gila trout*, loach minnow*, roundtail (Headwater) chub, spikedace*, Rio Grande sucker, New Mexican meadow jumping mouse*, Chiricahua Mountain mudwort, Mimbres figwort, Mogollon clover, Wooton’s hawthorn, yellow lady’s slipper</p>	<p>Permanent open water, edge vegetation, water quality, connected floodplains</p>	<p>Trampling from ungulate grazing</p>	<p>Soils – All DCs, Standards, and Guidelines. Watersheds – All DCs, Standards, and Guidelines. Riparian and Aquatic Ecosystems – Watershed scale DCs 1, 3a, c-e, & 4, Fine-scale DCs 1a-c & 2, Standards 1, 3, & 6, Guidelines 1, 3, & 5. Wildlife, Fish and Plants – DCs 7 & 8, Guideline 9. Water Uses – DCs 1 & 3. Livestock Grazing – DC 3 & 4, Standards 1, 2, & 4, and Guidelines 1-6.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Species affected by sediments in natural waters: Arizona toad, Chiricahua leopard frog*, narrow-headed gartersnake*, northern Mexican gartersnake*, Chihuahua chub*, Gila chub*, Gila trout*, loach minnow*, roundtail (Headwater) chub, spikedace*, Rio Grande sucker, A Stonefly (<i>C. caryi</i>), “Gila” mayfly (<i>L. dencyanna</i>), stonefly (<i>T. jacobii</i>), New Mexican meadow jumping mouse*</p>	<p>Permanent open water, water quality</p>	<p>Erosion above background levels, trampling from ungulate grazing, wildfire, roads</p>	<p>All Upland ERUs – Landscape scale DCs 1, 2, & 5, Standards 2-4. SFF ERU – Objective 1. MCW ERU – Objective 1. MCD ERU – Landscape scale DC 6, Objective 1. PPF ERU – Landscape scale DC 7, Objective 1. PPE ERU – Landscape scale DC 7, Objective 1. PJG & JUG ERUs – Landscape scale DC 3, Objectives 1 & 2. All Grassland ERUs – Landscape scale DC 2, All Objectives. Soils – DC 1a, 1c, & 1d, All Objectives, All Standards, Guidelines 2 & 3. Water Quality – DC 1. Watersheds – All DCs, Objectives, Standards, & Guidelines. Riparian and Aquatic Ecosystems – All Watershed scale DCs, Fine-scale DCs 1b-d & 2, Standards 2, 3, & 6, Guidelines 1-3, 5, & 6. Caves and Abandoned Mine Lands – DC 1. Wildlife, Fish, and Plants – DC 4, 5, & 7-10, Objectives 3 & 5, Standard 1, Guidelines 3-5, & 9. Rare and Endemic Plant and Animal Species and Habitats – DC 2. Non-native Invasive Species – DC 1, Objectives 4 & 5, Standards 10 & 12, Guidelines 4, 5, & 7. Wildland Fire and Fuels Management – DC 5, Standards 4-6, Guideline 2. Water Uses – DC 1 & 2. Livestock Grazing – DCs 1-4, Standards 1-4, Guidelines 1, 3, & 4. Timber, Forest, and Botanical Products – DC 1, Standards 1 & 4, Guidelines 3, 6a, & 7. Locatable Minerals – DC 1, Guidelines 2, 3, & 7. Salable/Mineral Materials – DC 2 & 3, Standard 1, Guideline 4. Roads – DCs 4 & 5, Guidelines 1-4. Facilities – Guideline 2 & 3. Developed Recreation – Standards 1 & 2, Guideline 1. Dispersed Recreation – DC 1, Guideline 3.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Species affected by sediments in natural waters: (continued)</p>		<p>Erosion above background levels, trampling from ungulate grazing, wildfire, roads</p>	<p>Trails – DCs 4 & 6, Guidelines 4, 5c, & 7. Motorized Trails – DC 2, Standard 4, Guidelines 2-5, 7 & 8. Non-Motorized Trails – Guideline 2.</p>
<p>Rocky Features and Cave/Cliff/Mine dependent: Mexican spotted owl*, lesser long-nosed bat, bearded mountainsnail, Black Range mountainsnail (<i>O.m. acutidiscus</i>), Black Range mountainsnail (<i>O.m. hermosensis</i>), Black Range woodlandsnail, Cockerell holospira snail, Mineral Creek mountainsnail, Morgan Creek mountainsnail, <i>A.c. pertubosa</i>, <i>O.m. radiata</i>, <i>O.m. concentrica</i>, Silver Creek woodlandsnail, Sonoran snaggletooth snail, Whitewater Creek woodlandsnail, cliff brittlebrush, Davidson’s cliff carrot, Hess’s fleabane, Metcalfe’s penstemon, Wright's catchfly (campion)</p>	<p>Rocks (canyons, caves, mines, ledges, talus slopes, and cliffs), man-made habitat (buildings, bridges)</p>	<p>Rock collection, cliff blasting, road construction, mining/mineral activities.</p>	<p>Cliffs and Rocky Features – Guidelines 1, 2, & 6. Caves and Abandoned Mine Lands – DC 3, Standard 2, & Guidelines 1, 2, 4, & 5. Wildlife, Fish and Plants – DCs 5 & 6, Guideline 6. Rare and Endemic Plant and Animal Species and Habitats – DC 2. Community Relationships – DCs 2 & 3. Tribal Importance and Use – DCs 2 & 4. Livestock Grazing – Standard 2. Locatable Minerals – All DCs, All Standards, All Guidelines. Salable/Mineral Materials – All DCs, All Standards, All Guidelines. Roads – DCs 2, 4, & 5, Guidelines 1 & 3. Trails – DCs 5, 6 & 7, Guidelines 1, 4, & 5c. Motorized Trails – Guidelines 2 & 8.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Rocky Features and Cave/Cliff/Mine dependent: Mexican spotted owl*, lesser long-nosed bat, Cliff brittlebrush, Davidson’s cliff carrot, Hess’s fleabane, Metcalfe’s penstemon, Wright’s catchfly (campion)</p>	<p>Rocks (canyons, caves, mines, ledges, talus slopes, and cliffs), man-made habitat (buildings, bridges)</p>	<p>Recreational rock climbing/ mine adit exploring</p>	<p>Cliffs and Rocky Features –Guidelines 3, 4, & 6. Caves and Abandoned Mine Lands – DC 3, Standard 2, & Guidelines 1, 2, 4, & 5. Wildlife, Fish and Plants – DCs 5 & 6, Guideline 6. Rare and Endemic Plant and Animal Species and Habitats – DC 2. Livestock Grazing – Standard 2. Locatable Minerals – DCs 1 & 3, Standard 1, Guidelines 2, 3, 4, & 10. Salable/Mineral Materials –Guideline 3.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Plant Specific dependent: Nitocris Fritillary Butterfly (SFF ERU), lesser long-nosed bat (SDG, PJG, PJO, MPO, Caves, Mines)</p>	<p>Abundance and availability of <i>Viola nephrophylla</i> and Palmer’s agave.</p>	<p>Invasive plants, misidentification during treatment of non-native plant species (mechanical, herbicide), recreation, wildfire, erosion, trampling/soil compaction from ungulate grazing, collection</p>	<p>All Upland ERUs – DCs 1-3, 5, 7, & 8, Standards 2-5, Guideline 1. SFF ERU – Landscape scale DCs 1 & 5, Mid-scale DC 3, Objective 1. MPO ERU – Fine-scale DC 1 & 2. PJO ERU – Mid-scale DC 3. PJG & JUG ERUs – Mid-scale DC 2, Objectives 1 & 2. All Grassland ERUs – Landscape scale DCs 1 & 3, All Mid-scale DCs, Fine-scale DC 1, Objectives 2 & 3. Soils – DCs 1a-e, Objective 2, All Standards, All Guidelines. Watersheds – DC 1b & 1c, All Standards, Guideline 1. Caves and Abandoned Mine Lands – DCs 2 & 3, Standard 2, All Guidelines. Riparian and Aquatic Ecosystems – Watershed scale DCs 1-3, Fine-scale DCs 1a-d & 2, Standards 2 & 3, Guidelines 1 & 5. Wildlife, Fish, and Plants – DCs 1-7 & 11, Objectives 5 & 6, Standard 1, Guideline 6. Rare and Endemic Plant and Animal Species and Habitats – DC 2. Non-native Invasive Species – DC 1, Standards 1-4 & 6-10, Guidelines 1 & 6. Wildland Fire and Fuels Management – DCs 5 & 6, Standards 2 & 4-6, Guidelines 1 & 2. Livestock Grazing – DCs 3 & 4, Standards 2 & 3, Guidelines 2 & 4. Timber, Forest, and Botanical Products – DCs 2a & 2g, Standards 1, 4, & 9, Guidelines 1, 3, & 6a. Locatable Minerals – DC 1, Guidelines 2, 5, & 10. Salable/Mineral Materials – DCs 2 & 3, Standard 1, Guideline 9. Roads – DC 4, Standard 1, Guidelines 1, 3, & 4.</p>

At-Risk Species	Key ecosystem characteristic or ecological conditions	Potential Stressors/ Threats	Coarse and Fine Filter Plan Components, which address Key Ecosystem Characteristic, Ecological Condition, or Potential Stressors
<p>Plant Specific dependent: Nitocris fritillary butterfly (SFF ERU), lesser long-nosed bat (SDG, PJG, PJO, MPO, Caves, Mines) <i>(continued)</i></p>	<p>Abundance and availability of <i>Viola nephrophylla</i> and Palmer’s agave.</p>	<p>Invasive plants, misidentification during treatment of non-native plant species (mechanical, herbicide), recreation, wildfire, erosion, trampling/soil compaction from ungulate grazing, collection</p>	<p>Facilities – DC 2, Guidelines 2 & 3. Sustainable Recreation – DC 4, Standard 4, Guideline 3. Developed Recreation – Guideline 1. Dispersed Recreation – DC 1, Guideline 3. Special Uses (Recreation) – DC2, Standards 1 & 2. Trails – DCs 4-7, Guidelines 1, 4, & 7 Motorized Trails – DC 5, Standards 1-4, Guidelines 2-5, & 8. Non-motorized Trails – Guideline 2.</p>
<p>Riparian dependent: Chiricahua leopard frog</p> <p>Rocky Features and Cave/Cliff/Mine dependent: Lesser long-nosed bat</p> <p>Aquatic dependent (e.g. seeps, springs, streams): Chiricahua leopard frog*, Chihuahua chub*, Gila chub*, Gila trout*, Loach minnow*, Roundtail (Headwater) chub, Spikedace*, Rio Grande sucker</p>		<p>Disease transmission</p>	<p>Riparian and Aquatic Ecosystems –Standard 2. Caves and Abandoned Mine Lands –DC 2, Guideline 3. Fish, Wildlife, and Plants –Guidelines 6, & 10. Non-native Invasive Species –Standard 1, Guideline 5. Wildland Fire and Fuels Management – DC 6. Livestock Grazing –Standard 5. Locatable Minerals –Guideline 10. Trails –DC 4. Research Natural Areas – DC 3.</p>

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Appendix E. Documentation of Public Engagement Process and Coordination with Other Public Planning Efforts

Public Engagement Process

The 2012 Planning Rule places great emphasis on collaboration and public involvement during the planning process and the plan's implementation. The Gila National Forest has conducted public engagement throughout each phase of the planning process. Following the guidance in the 2012 Planning Rule, this engagement has included collaboration with tribes, cooperating agencies, youth, underrepresented populations (including low-income and minority), private landowners, local, state and Federal Government agencies, non-governmental organizations, and coordination with local governments and Soil and Water Conservation Districts.

The Gila National Forest's vision of robust public engagement initially came from a series of community conversations before the revision process began in March of 2015. From those conversations, several themes emerged.

- Many people want to work with the Gila National Forest, engaging early and often.
- Relationships and trust need attention.
- Stakeholders desire a clear understanding of their role in the decision-making process, especially concerning their influence in the process and how their comments are addressed.
- Create safe opportunities for shared learning among diverse stakeholders by using a third-party professional facilitator, being inclusive and having meeting with a clear focus and purpose.
- Local culture and customs are important.
- Good communication is essential; be open and transparent, timely, speak plainly, and use multiple communication methods including emails, letters, phone calls, social media, local media, website, field trips, and provide meeting materials and summaries for those who could not attend.

Since these initial conversations, public engagement has included over 50 events including community conversations, technical meetings, open houses, surveys, symposia, workshops and field trips (see table 4 at the end of this section). Most meetings have been community conversations, typically a couple hours long on weekday evenings, which provided opportunities to exchange information and share knowledge. Technical meetings have typically been scheduled for an extended period during the day to encourage participation by interested local governments, state and Federal agencies, non-governmental organizations and members of the public with more time for discussion on topics and to get into the details more. Open houses at Forest Service offices provided opportunities for anyone with questions or ideas about plan revision to stop by and visit with forest staff.

Workshops, including field trips, focused on frequent-fire forest vegetation types that helped build shared understanding of desired conditions and an opportunity to learn about and discuss the science supporting desired conditions, management activities, opportunities and challenges. Partners that helped make this workshop possible included the New Mexico Forest and Watershed Restoration Institute at New Mexico Highlands University, Forest Service Southwestern Regional Office, Rocky

Mountain Research Station, Earth Systems Ecology Lab at University of New Mexico, and the U.S. Fish and Wildlife Service.

On-line and interactive classroom sessions conducted by Dr. Kathy Whiteman of Western New Mexico University gathered assessment input from youth and educators about existing designated areas, at-risk species, air, soil, water, ecosystems and ecosystem processes. Forest staff have engaged specifically with youth, leading two field days with the Surveys Student Wildland Adventure Program which is a program focusing on low income, minority community college students. These field days were opportunities to get these young people out in the woods to learn about natural resource management.

In addition, the Gila National Forest has engaged in 15 outreach tabling events at special event such as county fairs to raise awareness, answer questions and add a wide variety of individuals and groups to the plan revision mailing list. The mailing list, which now has nearly 1,000 people on it and includes: officials representing Federal, state, and local government; federally recognized tribes; rural historic communities; non-profit organizations; and private citizens.

Gila National Forest leadership maintains governmental relationships with ten federally recognized Indian tribes. All of these tribes, including specific bands that live closer to the forest, have been contacted by mail and by phone in regard to plan revision. Face-to-face consultation has occurred with six of the ten tribes. The Gila National Forest also participated in multiple regional tribal roundtables held by the Southwest Regional Forester. These discussions brought together all of the national forests in the region to discuss, learn, and collaborate with tribes around forest plan revision.

Cooperating agencies have and will hopefully continue to contribute their knowledge and understanding of the concerns and needs of local communities. Especially at technical meetings, but also at community meetings cooperating agencies have engaged in discussions and provided input regarding pre-draft and draft work products. More information about cooperating agencies is provided later in this appendix. Forest staff also discussed the plan revision process and plan development at the invitation of specific local governments, user groups or other interested parties.

There will be additional opportunities for public involvement in the National Environmental Policy Act review and plan revision processes. Concurrent with the release of this draft environmental analysis, a notice of availability published in the Federal Register initiates the formal 90-day comment period on the draft analysis and draft revised forest plan as required by National Forest Management Act regulations at 36 Code of Federal Regulations (CFR) 219. Only those individuals and entities who have submitted substantive formal comments related to this plan revision during the opportunities provided for public comment will be eligible to file an objection (36 CFR 219.53 (a)).

Public outreach meeting notes and additional information can be found in the planning record or on the web: <https://www.fs.usda.gov/detail/gila/home/?cid=STELPRD3828671>. Comments received since the publication of the Notice of Intent to begin plan revision can be found in the project record.

Table 4. Most of the public participation events related to forest plan revision for the Gila National Forest

Date	Revision Phase	Meeting Type	Location(s)
03/09/2015	Introduction to Forest Plan Revision	Community Conversations	Quemado
03/10/2015	Introduction to Forest Plan Revision	Community Conversations	Glenwood
03/10/2015	Introduction to Forest Plan Revision	Community Conversations	Reserve
03/11/2015	Introduction to Forest Plan Revision	Community Conversations	Silver City
03/12/2015	Introduction to Forest Plan Revision	Community Conversations	Mimbres Valley
03/12/2015	Introduction to Forest Plan Revision	Community Conversations	Truth or Consequences
08/03/2015	Assessment	Community Conversations	Quemado
08/04/2015	Assessment	Community Conversations	Glenwood
08/04/2015	Assessment	Community Conversations	Reserve
08/05/2015	Assessment	Community Conversations	Silver City
08/06/2015	Assessment	Community Conversations	Mimbres Valley
08/06/2015	Assessment	Community Conversations	Truth or Consequences
11/04/2015	Assessment	Youth Outreach Event	Silver City
02/26/2015	Assessment	Gila Natural History Symposium	Silver City
06/16/2016	Assessment	Southwestern Regional Forester's Intertribal Roundtable & Consultation Meeting	Flagstaff, AZ
10/24/2016	Assessment/Needs for Change	Community Conversations	Mimbres Valley
10/25/2016	Assessment/Needs for Change	Community Conversations	Quemado
10/26/2018	Assessment/Needs for Change	Community Conversations	Glenwood
10/27/2016	Assessment/Needs for Change	Community Conversations	Reserve
11/01/2016	Assessment/Needs for Change	Community Conversations	Truth or Consequences
11/02/2016	Assessment/Needs for Change	Community Conversations	Silver City
11/03/2016	Assessment/Needs for Change	Community Conversations	Las Cruces
06/20/2017	Assessment/Needs for Change & Plan Development	Southwestern Regional Forester's Intertribal Roundtable & Consultation Meeting	Albuquerque
08/01/2017 & 08/02/2017	Plan Development	Desired Conditions Workshop and Field Trip	Reserve
08/03/2017 & 08/04/2017	Plan Development	Desired Conditions Workshop and Field Trip	Silver City

Date	Revision Phase	Meeting Type	Location(s)
08/09/2017	Plan Development	Technical Meeting	Silver City
08/10/2017	Plan Development	Open House	Silver City
08/21/2017	Plan Development	Open House	Silver City
08/22/2017	Plan Development	Technical Meeting	Silver City
09/11/2017	Plan Development	Open House	Silver City
09/12/2017	Plan Development	Technical Meeting	Silver City
09/25/2017	Plan Development	Open House	Silver City
09/29/2017	Plan Development	Technical Meeting	Silver City
12/13/2017	Plan Development	Technical Meeting	Silver City
02/23/2018	Plan Development	Gila Natural History Symposium	Silver City
03/19/2018	Plan Development	Community Conversations	Quemado
03/20/2018	Plan Development	Community Conversations	Glenwood
03/21/2018	Plan Development	Community Conversations	Silver City
03/22/2018	Plan Development	Community Conversations	Mimbres Valley
03/23/2018	Plan Development	Community Conversations	Las Cruces
03/23/2018	Plan Development	Community Conversations	Truth or Consequences
03/26/2018	Plan Development	Community Conversations	Reserve
07/16/2018	Plan Development	Technical Meeting	Silver City
08/30/2018	Plan Development	Technical Meeting	Silver City
09/24/2018	Alternative Development	Community Conversations	Quemado
09/25/2018	Alternative Development	Community Conversations	Reserve
09/26/2018	Alternative Development	Community Conversations	Silver City
09/27/2018	Alternative Development	Community Conversations	Truth or Consequences
09/28/2018	Alternative Development	Community Conversations	Las Cruces
07/20/2019	Plan Development	Youth Outreach Event	Mimbres Valley
07/22/2019	Plan Development	Youth Outreach Event	Mimbres Valley
To Be Determined	National Environmental Policy Act Review and Comment Period	Community Conversations	Quemado, Reserve, Silver City, Truth or Consequences, Las Cruces

Coordination with Other Plans

The 2012 Planning Rule requires a review of planning and land use policies of federally recognized Indian Tribes (43 U.S.C. 1712(b)), Alaska Native Corporations, other Federal agencies, and State and local governments, where relevant to the plan area. In preparing the draft revised Gila National Forest plan, the planning team reviewed these plans and policies with consideration provided for:

- The goals, objectives, and implementation measures as expressed in their plans and policies
- The compatibility and interrelated impacts of these plans and policies and forest plan content
- Opportunities for the plan to address the impacts identified or contribute to joint goals, objectives and implementation measures
- Opportunities to resolve or reduce conflicts, within the context of plan content

For the most part, the draft revised Gila National Forest plan complements these other planning efforts. These plans, assessments, and strategies were considered in the development of plan components to ensure as much alignment as was practicable. Management approach sections of the plan articulate identified issues and opportunities for coordinating with various partners across administrative boundaries, particularly State, local, tribal, and Federal agencies.

Cross-boundary issues include managing for wide ranging species and wildfire across agency boundaries, and working together to improve efficiency. While there were some differences related to the differing missions, no conflicts requiring alternative development were identified. Below is a list of the planning and land use policies reviewed, as well as a summary of provisions that influenced or were relevant to development of this plan.

Tribal

The Gila National Forest contains ancestral lands important to 10 federally recognized tribes, although it does not share borders with tribal lands. These tribes include the Pueblos of Acoma, Laguna, Zuni, Ysleta Del Sur Pueblo, the Navajo Nation, the Hopi Tribe, the San Carlos Apache Tribe, the Ft. Sill Apache Tribe, the Mescalero Apache Tribe, and the White Mountain Apache Tribe. While Gila National Forest leadership and staff have consulted with these tribes and requested any planning documents they might have, no response to these planning document requests have been received at this time.

Counties

The Gila National Forest lies in four counties in southwestern New Mexico: Catron, Grant, Hidalgo and Sierra. County level plans include comprehensive plans, economic development plans and community wildfire protection plans. All four counties have community wildfire protection plans (CWPPs) that were developed in response to the Healthy Forests Restoration Act of 2003. CWPPs identify and prioritize areas for hazardous fuel reduction treatments and provide recommendations on treatment types and methods. County comprehensive plans can be used as a source of information on the history of land use within the region, the patterns of development, desired conditions and current county land use policies. Some counties also have an economic development plan that stands separately from their comprehensive plan, but works in conjunction with it. Economic development plans, whether stand-alone or as part of a comprehensive plan, can be a source of information about how the community values the contributions that Federal public lands provide to economic growth and prosperity. Each of these types of plans are summarized in the following subsections by county.

Comprehensive and economic development plans are considered together. CWPPs are considered on their own.

Comprehensive Plans

Catron County

Goals, Objectives and Implementation Measures

The Catron County Comprehensive Plan and Capital Improvement Plan establishes the goals, objectives, strategies and policies to protect ways of life, custom and culture of its residents into the future. It identifies six overarching planning topics, each with its own goals, objectives and implementation measures. Objectives most pertinent to national forest management include: economic growth and vitality; collaborative innovation to revive the wood product industry; development of visitor use areas within the Gila National Forest; implementation of the Catron County Community Wildfire Protection Plan and improving forest health through hazardous fuels reduction; and maintenance, improvement and expansion of firefighting infrastructure. It also includes an objective to work with the U.S. Department of Agriculture Forest Service and emergency service providers to identify locations for cell towers.

Compatibility, Contributions and Conflict

The objectives and implementation measures that touch on national forest management are mostly compatible with or complementary to draft revised forest plan direction. In fact, the objective to revive the wood product industry through innovations that can utilize low value, small diameter material is not just compatible with the draft revised forest plan, such innovations would be a substantial contribution to the successful implementation of the revised forest plan. Additionally, the implementation measures the comprehensive plan articulates for hazardous fuels reduction includes support of physically removing fuels, as well as prescribed fire. However, there may not be complete alignment related to the development of recreation facilities, which is an implementation measure in the County's plan. Dispersed recreation is the expressed emphasis in the forest plan, and while there is no plan direction prohibiting additional developed recreation sites, the forest does not have the fiscal capacity to build and maintain additional developed recreation sites.

The draft revised forest plan contributes to advancing the objectives articulated in the Catron County Comprehensive Plan and Capital Improvement Plan in a number of ways. The plan's direction for community relationships and multiple uses contributes to protecting ways of life, custom and culture into the future. Numerous ecological plan components seek to restore the ecosystems and watersheds that Catron County residents depend on for their livelihoods, and avoid large extents of high severity wildfire. There is plan direction that supports collaborative outreach and education programs to promote proactive, fire-wise communities, which could help advance implementation measures identified in Catron County's plan.

The Catron County Comprehensive Plan and Capital Improvement Plan raises a community concern about how much Federal and State-controlled land occurs in the county. There is a sentiment that while public land management decisions directly impact county residents in ways they do not impact other stakeholders, decisions are not made locally. The forest plan revision process has included outreach to rural and traditional communities and active coordination with county commissions. Catron County itself was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status. Nevertheless, the dialogue that has progressed through this

coordination effort has manifest itself in the draft revised plan as management approaches that provide for more local involvement and coordination during plan implementation.

Grant County

Goals and Action Items

The Grant County Comprehensive Plan serves as a guide for policy decisions and investment of taxpayer dollars. The plan contains policy guidance for regional coordination, land use, environment and natural resources, housing, transportation, facilities and services, economic development and funding. Goals and action items are included to respond to identified challenges and opportunities. Coordination goals and action items pertinent to forest management include coordination on transportation infrastructure and access issues, recreational planning and forest management efforts. The County also identified facilitating communication between the Forest Service and the public as an action item, especially between the agency and grazing allotment permittees. It specifically addresses coordination with the Forest Service and identifies tourism and visitor services, recreational amenities, transportation access and preventing the spread of invasive species as topics of coordination.

Environment and natural resources goals and action items include preservation of natural landscapes and delicate habitats with consideration being provided for at-risk locations, wildland-urban interface values, and wildfire and flood hazard mitigation. The Grant County Economic Development Master Plan emphasizes development of an aggressive stand-alone marketing and branding strategy including natural scenery and outdoor recreation opportunities with the Gila National Forest, which was identified as a “key asset.”

Compatibility, Contributions and Conflict

The goals and action items that touch on national forest management are all compatible with or complementary to draft revised forest plan direction.

The draft revised forest plan contributes to advancing the coordination and environment and natural resources goals and action items. The plan revision process has included active coordination with county commissions. Grant County itself was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status. Plan content for community relationships and management approaches throughout the plan promote continued coordination, collaboration and partnership with the counties. Plan direction for ecosystems and watersheds supports wildfire and flood hazard mitigation and invasive species. Plan content also supports natural scenery, outdoor recreation opportunities and tourism.

The Grant County Comprehensive Plan articulates the distrust some residents have toward the Forest Service over livestock grazing and forest access. Stakeholder engagement throughout the plan revision process has helped improve relationships and build shared understanding, but continued efforts to maintain and improve transparency and communication are needed. Plan direction for community relationships and management approaches throughout the plan provide a path forward that promotes these critical relationship elements during implementation. The County was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status.

Hidalgo County

Goals and Strategies

The Hidalgo County Comprehensive Plan is a policy document intended to establish a basis for the regulations and programs needed to move toward the desired conditions the County's stakeholders envision. It includes the elements of land and water, economic development, housing, transportation, infrastructure and facilities, hazard mitigation and implementation. Each element has established values, goals and implementation strategies. Goals most pertinent to national forest management include: secure, protect and maintain safe and sustainable water quality and quantity through effective and coordinated watershed and aquifer management; promote, protect and restore the open spaces and natural resources; recognize, honor and protect historical grazing and water rights for future generations; support, maintain and preserve the county's rural, cultural and agricultural land uses; strengthen and support opportunities for tourism; and reduce potential loss and damage from natural and human caused hazards.

Compatibility, Contributions and Conflict

Most of the goals and strategies pertinent to forest management are compatible with the draft revised forest plan. However, the goal to recognize, honor and protect historical grazing rights is not. The draft revised forest plan is consistent with law and regulation, none of which recognizes or establishes grazing "rights." Grazing on National Forest System lands is a permitted use that is authorized subject to terms and conditions, and is not a legally granted right to which permit holders are entitled. With the exception of the goal for grazing "rights," draft revised plan content for ecosystems, watersheds and multiple uses advances the goals articulated in the Hidalgo County plan.

Hidalgo County was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status. However, the plan revision process has included active coordination with the counties, including Hidalgo County. During coordination meetings, Hidalgo County brought forth many topics here there has not been alignment, including the recognition of grazing rights. This conflict cannot and will not be resolved or reduced by forest plan direction.

Sierra County

Goals, Objectives, Implementation Strategies and Actions

The Sierra County Comprehensive Plan is a practical, strategic plan for community growth and development. It addresses several issues including land use and housing, economic development, infrastructure, facilities, hazard mitigation, green community considerations, and implementation. It also contains related goals, objectives, and implementation strategies and actions. Those most pertinent to national forest management include the goal to establish a formal and influential collaborative status with Federal agencies, and the implementation actions to keep their CWPP current and have Forest Service representation on the Sierra County Recreation and Tourism Advisory Board.

Compatibility, Contributions and Conflict

All of the articulated goals, objectives, implementation strategies and actions pertinent to forest management are compatible with or complimentary to the draft revised forest plan.

The draft revised forest plan advances Sierra County's goal for more frequent and closer collaboration through direction for community relationships and management approaches throughout

the plan. Desired conditions and objectives for vegetation communities support wildfire hazard mitigation and also contributes to the implementation of the Sierra County CWPP.

Sierra County’s Comprehensive Plan discusses that the local community understands Federal lands have national significance, but they also understand that these lands are situated locally and by their proximity have very different impacts on the local community versus someone further removed. The plan goes on to articulate that many residents believe that the Forest Service pays little heed to the concerns expressed by the local community and that the loss of jobs and revenue, and inconvenience to ranchers and others occasioned by travel management decisions is a serious loss . The plan also asserts that what is lacking in the relationship between the County (and it therefore its residents) and Federal agencies is the “high level of influence in decision-making” described by the Council on Environmental Quality in their collaboration handbook. The County was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status.

Nevertheless, the forest plan revision process has included outreach, opportunities to provide input and feedback, and active coordination with the counties. This has helped improve relationships and build shared understanding, but continued efforts to maintain and improve transparency and communication are needed. Plan direction for community relationships and management approaches promoting collaboration and coordination throughout the plan provide a path forward that promotes continual improvement during implementation.

There is one issue raised in the Sierra County Comprehensive Plan that cannot and will not be addressed in the forest planning process and that is the recognition and protection of grazing rights. The forest plan must be consistent with law and regulation, which does not recognize grazing “rights” as legally valid rights. It does recognize grazing permits and the forest plan includes grazing as one of the multiple uses it sustains.

Community Wildfire Protection Plans

Catron County

Desired Conditions, Goals and Objectives

The Catron County CWPP’s goals and objectives are to achieve certain desired future conditions for wildland urban interface areas, as well as for forests, woodland and grasslands within the County. Desired conditions for the wildland urban interface is a fire safe environment that will provide “defensible space” for firefighters in the event of a wildfire. Desired future conditions for wildlands is a condition in which a combination of natural fire processes and resource management sustain forest health. The CWPP also identifies outreach and education and socioeconomic objectives in the monitoring plan that is part of the document.

Compatibility, Contributions and Conflict

There is a high degree of alignment between the desired conditions, goals and objectives articulated in the Catron County CWPP and direction for vegetation communities, wildland fire and fuels, the wildland urban interface and timber, forest and botanical products.

The direction contained in the draft revised forest plan advance the desired conditions, goals and objectives of the Catron County CWPP through direction for ecosystems, watersheds, wildland fire and fuels, and wildland urban interface. Plan content in these sections also promote collaborative

outreach and education related to wildfire prevention and preparedness. Treatment objectives will also contribute to local and regional industry and job opportunities.

There are no known, relevant plan related conflicts between the Sierra County CWPP and draft revised forest plan content.

Grant County

Goals, Objectives and Priorities

The goals of the Grant County CWPP include identification and prioritization of wildland fire dangers, promotion of forest product utilization, and maintenance of completed projects, involvement of all interests and stakeholders and incorporation of adaptive planning. Articulated objectives include recommendation of strategies and projects that will reduce the risk of uncontrollable wildfire, restore watershed functions and conditions and improve socioeconomic well-being by supporting local economic development that utilizes the by-products of treatments. Priority treatments include highway right-of-ways, wildland urban interface areas, critical watersheds, and critical infrastructure. Wildland urban interface areas were further divided into priority categories.

Compatibility, Contributions and Conflict

There is a high degree of alignment between the Grant County CWPP and draft revised forest plan direction for vegetation communities, wildland fire and fuels, the wildland urban interface and timber, forest and botanical products. By promoting industry that can utilize low value, small diameter products, the CWPP contributes to the successful implementation of the forest plan and achievement of desired conditions.

The draft revised forest plan advances the objectives of the Grant County CWPP. It advances objectives for infrastructure protection, urban interface focused projects and watershed restoration through direction for ecosystems, watersheds, wildland fire and fuels, and wildland urban interface. Plan content in these sections also promote collaborative outreach and education related to wildfire prevention and preparedness. Treatment objectives will also contribute to local and regional industry and job opportunities.

Although not discussed in the Grant County CWPP, public meetings held in Grant County over the course of the forest plan revision process brought to light that some stakeholders feel the CWPPs have been ignored. While this sentiment was expressed, no further details have been provided or discovered. Presumably, this is related to the rate of progress being made, or that the connection between the priority areas identified in the CWPP, and the areas the Gila National Forest has treated over the years since the CWPP was signed is not obvious. Either way, management approaches promoting closer collaboration and coordination with the CWPP and its parties are included in the plan.

Hidalgo County

Priorities and Projects

The Hidalgo County CWPP does not articulate objectives, but they do articulate three priorities and specific projects within those areas. Priorities include: transportation, railroad and pipeline corridors; defensible space around homes; and fuel breaks around wildland urban interface boundaries. The Gila National Forest is specifically mentioned related to transportation corridors and limited projects

that may be necessary along those corridors to provide the responding firefighting resources the best chance of suppression human-caused starts along those corridors.

Compatibility, Contributions and Conflict

There is a high degree of alignment between the Hidalgo County CWPP and draft revised forest plan direction. The draft revised forest plan advances the priorities and projects of the Hidalgo County CWPP to a limited degree, given the limited amount of the County's total area within the Gila National Forest boundary. Nevertheless, plan direction for vegetation communities, wildland urban interface, and wildland fire and fuels management is supportive to moving the CWPP's priorities and projects forward to the degree that it can. There are no known, relevant plan related conflicts between the Sierra County CWPP and draft revised forest plan content.

Sierra County

Objectives

The Sierra County CWPP contains objectives for: infrastructure protection; industry, utilization and employment; public information and education; grants and finance; urban interface focus projects; and watershed restoration. Urban interface focus projects are those most critical, specific areas that were thought to be realistic to treat within three years and move to an annual maintenance schedule.

Compatibility, Contributions and Conflict

There is a high degree of alignment between the Sierra County CWPP and draft revised forest plan direction for vegetation communities, wildland fire and fuels, the wildland urban interface and timber, forest and botanical products. By promoting industry that can utilize low value, small diameter products, the CWPP contributes to the successful implementation of the forest plan and achievement of desired conditions.

The draft revised forest plan advances the objectives of the Sierra County CWPP. It advances objectives for infrastructure protection, urban interface focus projects and watershed restoration through direction for ecosystems, watersheds, wildland fire and fuels, and wildland urban interface. Plan content in these sections also promote collaborative outreach and education related to wildfire prevention and preparedness. Treatment objectives will also contribute to local and regional industry and job opportunities. There are no known relevant plan related conflicts between the Sierra County CWPP and draft revised forest plan content.

Municipalities

Bayard

Goals and Implementation Strategies

The City of Bayard's Comprehensive Plan provides decision-making guidance regarding the physical development of the community. It identifies and provides guidance for eight elements including land use, housing, economic development, community services, transportation, infrastructure, hazard mitigation and implementation. The goals and implementation strategies associated with these elements that are most pertinent to national forest management are related to hazard mitigation. These include promotion of defensible space and coordination with Gila National Forest fire prevention staff, coordination with the Gila National Forest and others to implement prescribed fire around wildland urban interface areas, and removal of invasive species around municipal facilities.

Compatibility, Contributions and Conflict

The City of Bayard's Comprehensive Plan is compatible with the draft revised forest plan and contributes to the success of forest plan implementation. The City's plan contributes in terms of movement toward desired conditions for the wildland urban interface and for native vegetation communities on the forest. Municipalities and private lands are a significant seed source for nonnative invasive and noxious species, and forest management is more likely to be successful when all jurisdictions make efforts to contain, control and eradicate populations of invasive and noxious species.

Draft revised plan content contributes toward the City of Bayard's objectives and implementation strategies through direction for vegetation communities, nonnative invasive species, wildland fire and fuels management and the wildland urban interface. No conflicts between the City of Bayard's Comprehensive plan and the draft revised forest plan have been identified. The City was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status.

Santa Clara

Goals and Implementation Strategies

The Village of Santa Clara's Comprehensive Plan provides policy guidance including goals and implementation strategies to address land use, water, economic development housing, transportation, infrastructure and facilities, hazard mitigation and implementation. Goals and implementation strategies most pertinent to national forest management are related to wildfire hazard mitigation. The Village has a goal to develop a local, rapid response to emergency and hazardous threats, including wildfire and a strategy to create a public information campaign to publicize the risks and responses.

Compatibility, Contributions and Conflict

The Village of Santa Clara's Comprehensive plan, in particular the wildfire hazard mitigation content, is compatible with and complements draft revised forest plan direction for wildfire and fuels management and the wildland urban interface. Draft revised plan content contributes to the Village of Santa Clara's goal and implementation strategy for wildfire hazard mitigation through direction and management approaches for wildland fire and fuels management and the wildland urban interface. In particular, plan content related to collaborative outreach and education programs addressing wildfire and associated hazards and mitigation measures support dissemination of information to the public. No conflicts between the Village of Santa Clara's Comprehensive plan and the draft revised forest plan have been identified. The Village was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status.

Hurley

Gila National Forest staff reached out to the Town of Hurley to request a copy of their comprehensive plan, as it was not found online. No response was received.

Silver City

The Town of Silver City has both a comprehensive plan and a trails and open spaces plan that are discussed in the following subsections.

Goals, Policies and Implementation Measures

The Town of Silver City's Comprehensive Plan guides the development of public policy and addresses the same policy elements as Bayard and the Village of Santa Clara with fire hazard

reduction policy content being the most pertinent to national forest management. Implementation measures include review and implementation of management strategies outlined in the New Mexico Environment, Minerals and Natural Resources Department Forestry Division's implementation plan for at-risk communities. There is also an implementation measure for intergovernmental coordination with the Gila National Forest and other agencies to establish a park, recreation, trail, and open space network that expands beyond Silver City limits.

The Town of Silver City's Trails and Open Spaces Plan, states a goal to develop an area-wide trail system that provides connectivity to the Gila National Forest and other areas outside of city limits. This goal is supported by an objective to identify trail corridors that could link to the Gila National Forest. One potential link was identified along Little Walnut Road, which was proposed for study. Working with the Forest Service and others to determine and off-road route for a spur trail to connect Silver City to the Continental Divide Trail was also identified as an action. The plan also discusses four Town-owned properties outside city limits that are currently open spaces that can only be accessed through the Gila National Forest, but the plan does not propose study or action related to these parcels.

Compatibility, Contributions and Conflict

The Town of Silver City's Comprehensive plan, in particular the wildfire hazard mitigation content, is compatible with and complements draft revised forest plan direction for wildfire and fuels management and the wildland urban interface. Draft revised plan content contributes to Silver City's Comprehensive Plan for wildfire hazard mitigation through direction and management approaches for wildland fire and fuels management and the wildland urban interface. Although the draft forest plan content does not specifically support the Town's Trails and Open Spaces Plan, it does not preclude future collaborative efforts to meet the Town's goals and objectives. No conflicts between the Town of Silver City's Comprehensive plan and the draft revised forest plan have been identified. The Town was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status.

Truth or Consequences

Goals, Objectives and Implementation Strategies

The Town of Truth or Consequences Comprehensive Plan guides the development of public policy and addresses the same policy elements as the other municipalities, each with goals and objectives. Most pertinent to national forest management are the objective to support the use of the local airport as a fueling and training base for government agencies and the wildfire hazard mitigation implementation strategies. Mitigation implementation strategies include wildfire hazard outreach and education and support of fire-wise communities. The Town also has a MainStreet Economic Assessment, but that document does not contain pertinent policy or other discussion relative to forest management.

Compatibility, Contributions and Conflict

The Town of Truth or Consequences Comprehensive Plan is compatible with and complements draft revised forest plan direction for wildfire and fuels management and the wildland urban interface. Although Truth or Consequences is located further away from the Gila National Forest than the other municipalities, draft revised forest plan content does advance the goals, objectives and implementation strategies for wildfire hazard mitigation. Most relevant is the plan content supporting collaborative outreach and education programs. There are no conflicts between Truth or

Consequences' Comprehensive Plan and draft revised forest plan content. The Town was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status.

Federal Agencies

Apache-Sitgreaves and Cibola National Forests

The Apache-Sitgreaves National Forests are located in Arizona, and along the state line, is essentially contiguous to the Gila National Forest. While the Cibola National Forest is not contiguous to the Gila National Forest, both forests administer lands in a handful of 6th code watersheds. The Apache-Sitgreaves finalized and adopted their revised forest plan in 2015. The Cibola National Forest is in the process of revising its forest plan.

Compatibility, Contributions and Conflict

Although there are difference amongst the Apache-Sitgreaves, Cibola and Gila National Forest plans, they are all consistent with the law, regulation and policy and are therefore compatible. The differences that exist are necessary to address each forest's unique characteristics and circumstances. When restoration and hazardous fuel reduction activities are implemented on lands administered by any of the three national forests, it is mutually beneficial to achieving the desired conditions, goals, and objectives outlined in their respective plans. There are no conflicts, existing or anticipated, amongst these forest plans.

Bureau of Land Management

There are three Resource Area Management Plans (RMPs) for lands managed by the U.S. Department of the Interior Bureau of Land Management (BLM) that provide high-level direction for the management of public lands and resources in Catron, Grant, Hidalgo and Sierra Counties. The 1993 Mimbres Resource area RMP provides direction for lands managed by the Las Cruces District Field Office, including those in Grant and Hidalgo Counties. The 1986 White Sands Resource Area RMP also provides direction for lands managed by the Las Cruces District Field Office, including those in Sierra County. The 2010 Socorro District RMP provides direction for BLM land in Catron (and Socorro) counties.

Compatibility, Contributions and Conflict

Because the BLM and the Forest Service both have a multiple use-sustained yield mandate, and must comply with same Federal and State laws, there is a high degree of compatibility between these RMPs and the draft revised forest plan. When restoration and hazardous fuel reduction activities are implemented on lands of either jurisdiction, it is mutually beneficial to achieving the desired conditions, goals, and objectives outlined in their respective plans. Management approaches promoting collaboration and partnership throughout the Gila's draft revised plan will advance the implementation of the forest plan and the BLM's RMPs. The BLM was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status. No conflicts with any of the relevant RMPs have been identified.

National Park Service

The U.S. Department of the Interior National Park Service administers the Gila Cliff Dwellings National Monument, which is contiguous to the Gila National Forest. The Monument does have a fire management plan, which delegates many aspects of fire management to the Gila National Forest, but it does not yet have a comprehensive land and resource management plan. It does have what it refers to as a foundation document that provides basic guidance for planning and management

decisions. This document describes the area, identifies mandates and administrative commitments, assesses planning and data needs, and identifies planning products that need to be developed.

The foundational document identifies a few opportunities to coordinate with the Forest Service in their future planning efforts. This includes sharing data and exploring opportunities to conduct joint studies, outreach and interpretation. It also identifies an opportunity to work with the Forest Service and the New Mexico Department of Transportation to find solutions for the road that crosses the West Fork Gila River and provides access to the Monument. This road is frequently compromised by high flow events, causing the Monument to shut down for periods of time.

Compatibility, Contributions and Conflict

The foundational document is compatible and complimentary to the draft revised forest plan, which includes management approaches for collaborative outreach and education programs, as well as other management activities. Working together on such efforts advances the community relationships and partnerships the both documents promote. The Monument was contacted to gauge their interest in participating as a cooperating agency, but did not apply for that status. No conflicts have been identified.

State Agencies

State agencies are directly or indirectly responsible for various aspects of land and resource management.

New Mexico Department of Agriculture

The New Mexico Department of Agriculture (NMDA) works for the benefit of the state's citizens and supports the viability of agriculture and affiliated industries. It is responsible for administration of over 30 State statutes and the rules and regulations established under them. Some of the State statutes were passed in response to a Federal law delegating authority and responsibility to the states. The Federal Noxious Weed Act of 1974 is an example of a Federal law that resulted in the New Mexico Noxious Weed Act and Noxious Weed Control Act. NMDA has a Strategic Plan (2014-2018), which is in the process of being updated. It identifies four priorities: (1) marketplace and economic development; (2) food protection; (3) regulatory compliance; and (4) natural resources. Each priority is accompanied by goals and objectives. Goals and objectives for the natural resources priority are most directly related to national forest management. The natural resources goal is to promote responsible and effective use and management of natural resources in support of agriculture. Objectives most pertinent to national forest management include:

- Participation and collaboration in natural resource policy and planning to promote beneficial use and protection of natural resources.
- Provide leadership in support of research to promote the long-term viability of agriculture and the state's natural resources.
- Support agriculture through programs, policies and public information regarding management and protection of natural resources.
- Promote natural resource management under the principles of multiple use and sustained yields across ownership boundaries.
- Support agricultural interest in natural resources and energy development.

NMDA applied for and was granted cooperating agency status in the Gila National Forest plan revision effort.

Compatibility, Contributions and Conflict

NMDA’s natural resource goals and objectives articulated in the 2014-2018 strategic plan and the draft revised forest plan are compatible and complimentary to one another. The plan revision process has advanced NMDA’s objectives to participate and collaborate in natural resource policy and planning and promote the multiple use-sustained yield principle. Furthermore, the draft revised forest plan identifies many management topics on which collaboration with NMDA and the forest user groups it advocates for are crucial to successful implementation of the forest plan, including noxious weeds and livestock grazing. No conflict between the NMDA strategic plan and the draft revised forest plan have been identified.

New Mexico Department of Game and Fish

The New Mexico Department of Game and Fish conserves, regulates, propagates and protects the state’s wildlife and fish for sustainability of those resources and the benefits they provide to people. The Department has three high-level planning documents that guide their management. These include their Strategic Plan, State Wildlife Action Plan, and Statewide Fisheries Management Plan.

Strategic Plan

The Strategic Plan (2013-2018), which is in the process of being updated, includes expectations through 2025 and establishes objectives, strategies and actions for field operations, conservation services, wildlife depredation and nuisance abatement, and program support.

State Wildlife Action Plan

The State Wildlife Action Plan for New Mexico (2016) is a non-regulatory planning document that aims to “provide a high level view of the needs for and opportunities to conserve New Mexico’s wildlife and their habitats.” The key themes of the plan include Species of Greatest Conservation Need, habitats and habitat conservation and Conservation Opportunity Areas (COAs). The Forest Service was part of the core team that contributed to development of the plan.

Statewide Fisheries Management Plan

The State Fisheries Management Plan (2016) is a vision document that seeks a balance between conserving native fisheries and providing diverse opportunities for anglers. It identifies emphasis areas for maintaining and developing sport fisheries and those where implementation of Federal or State recovery plans are the priority.

Compatibility, Contributions and Conflict

There is a great deal of alignment between the plans of the New Mexico Department of Game and Fish and the draft revised forest plan and opportunities for synergies in implementation of both plans. The proposed actions contained in the State Wildlife Action Plan to address multiple threats and approaches to managing climate vulnerability are complimentary to those contained in the forest plan and there are many opportunities for future collaborative work, both within the COAs identified on the Gila National Forest, and elsewhere on the forest. There are a couple of conflicts in the State Fisheries Management Plan, which identifies certain rivers and their tributaries as a smallmouth bass, or channel and flathead catfish fisheries. These streams are designated critical habitat for loach minnow and spikedace, and although they are not currently occupied, maintaining these non-native

fisheries and promoting them as potential trophy fisheries creates conflict with recovery efforts for those federally listed species.

New Mexico Energy, Minerals, and Natural Resources Department

The New Mexico Energy, Minerals and Natural Resources Department (EMNRD) includes several different divisions responsible for energy conservation and management, forestry and fire management, mining and minerals, oil and gas and parks. EMNRD does not have a comprehensive planning document, but individual divisions do. These are identified below.

New Mexico Energy Conservation and Management Division

The New Mexico Energy Conservation and Management Division has a roadmap that documents goals and strategies. The goals most pertinent to national forest management are related to sustainable operations and include:

- Increase the use of alternative fuel vehicles to 15 percent by 2027.
- Reduce single occupancy vehicle miles traveled by 15 percent by 2027.
- Reduce emissions from mobile sources by 10 percent by 2027.
- Rank in the top 20 states for energy efficiency by 2027.

New Mexico State Forestry Division

The State's Forestry Division has two strategic documents: (1) the Forest Action Plan and (2) the Rare Plant Conservation Strategy.

Forest Action Plan

The current Forest Action Plan is the 2010 New Mexico Statewide Natural Resources Assessment and Strategy and Response Plan, which was reviewed in 2015 and is currently under another review given recent changes in State-level administrations. This plan includes four themes: (1) conserve working landscapes; (2) protect watersheds from harm; (3) enhance public benefits from natural resources; and (4) promote urban and community forests. Each theme is supported by objectives and strategies. From the 2015 review document available on the Forestry Division's website, the State objectives for conserving working landscapes are to: (1) identify and conserve high-priority landscapes; and (2) actively and sustainably manage forests and watersheds with economic potential. The objectives for protecting watersheds from harm are: (1) restore and reduce risk to fire-adapted lands; (2) help communities build capacity to prepare and respond to natural resource related disturbances; (3) maintain and increase agency and interagency capacity and response to wildland fire and associated disturbances; and (4) identify, manage and reduce threats for forest and ecosystem health. The objectives for enhancing public benefits from natural resources are to: (1) improve air quality and conserve energy; (2) promote multi-jurisdictional, cross-boundary initiatives to plan for and promote ecosystem resilience; (3) support landowners' and land managers' ability to maintain and enhance the economic benefits and values of natural resources; (4) protect, conserve and enhance plant and wildlife habitat; (5) protect, conserve and enhance endangered species; (6) connect people to landscape and engage them in natural resource stewardship activities; and (7) manage and restore trees, forests and ecosystems to mitigate and adapt to global climate change. The objective for promoting urban and community forests is to empower communities to develop and sustain healthy community and urban forests.

Rare Plant Conservation Strategy

The New Mexico Rare Plant Conservation Strategy has seven goals, each supported by two or more objectives, most of which are pertinent to national forest management. Goals include: (1) inventory, monitor, and research strategy species to inform management and regulatory decisions; (2) protect, manage, and restore strategy species and their habitats; (3) improve data management storage and dissemination; (4) develop ex-situ conservation and recovery strategies and implement where appropriate; (5) improve laws, regulations and policies; (6) increase collaboration, education and outreach; and (7) improve funding, infrastructure and rare plant programs.

New Mexico State Mining and Minerals Division

This division does not have a comprehensive planning document, as law, regulation and markets govern the programs it administers.

New Mexico State Oil and Gas Division

This division does not have a comprehensive planning document, as law, regulation and markets govern the programs it administers.

New Mexico State Parks Division

This division includes individual management plans for each of the state's parks. There is only one state park in the vicinity of the Gila National Forest. The City of Rocks State Park plan was finalized and adopted in 2016. It does not mention the Gila National Forest or contain any goals, objectives or actions pertinent to the draft revised forest plan.

The State Parks Division also has the 2016-2020 Statewide Plan for Outdoor Adventure, which includes themes of community livability, trails, health, economic vitality and environmental health. Each of these themes has a set of goals, objectives and actions.

Compatibility, Contributions and Conflict

All of the ENMRD plans are compatible with and complimentary to the draft revised forest plan. The forest plan advances the Energy Conservation and Management Division's roadmap goals through plan content that promotes sustainable operations, both as desired conditions for air quality and as part of the management approach to change and uncertainty. The forest plan is very much aligned with the Forestry Division's action plan and with shared stewardship. The implementation of both plans will create opportunities for successes that are greater than the sum of their parts. The draft revised forest plan also contains direction related to rare and endemic plant and animal species and their habitats, which puts the Gila National Forest in direct alignment with the Rare Plant Conservation Strategy. Again, the implementation of the strategy and the forest plan will create opportunities for synergy. There is also broad alignment between the draft forest plan and the Statewide Plan for Outdoor Adventure. For example, their economic vitality goal is to "Enhance economic vitality through promoting recreation and tourism." The forest plan sustainable recreation section recognizes that that "Local communities' quality of life and economic opportunities are interwoven with the forest's future" and includes direction support recreation and related economic opportunities. There are no conflicts between the draft revised forest plan and any of the ENMRD plans.

New Mexico Department of Homeland Security and Emergency Management

The 2018 New Mexico State Hazard Mitigation Plan was developed as a cooperative effort between State agencies and coordinated by the New Mexico Department of Homeland Security and

Emergency Management (NMDHSEM) Preparedness Bureau. The purpose of the Hazard Mitigation Plan is to provide the framework for recovery and reconstruction processes after a declared disaster and to identify mitigation projects that will reduce the potential for future disasters. The goal for mitigation is to save lives, reduce injuries, property damage and recovery times. Events that may result in disaster declarations most pertinent to national forest management are identified as the drought-wildfire-flood cycle. Drought, wildfire and flood all have mitigation goals and implementation strategies. The most pertinent to national forest management include: incorporating drought mitigation activities into range management plans; actions to improve forest and watershed health; studies related to post-fire flooding and debris flows; increasing the number of fire-adapted communities; actions to reduce fuels in the wildland urban interface; increase participation in Community Wildfire Protection Plans; and a comprehensive public education and outreach strategy.

Compatibility, Contributions and Conflict

There is a great deal of alignment between the State Hazard Mitigation Plan and draft revised forest plan content. The draft forest plan includes: a management approach to drought for range management, desired conditions for vegetation communities, watershed health, and wildland urban interface that are supported by treatment objectives; and management approaches to support fire-related collaborative public education and outreach programs and include Community Wildfire Protection Plans. When implemented together, the State Hazard Mitigation Plan and forest plan could generate a greater degree of progress toward common goals. There are no known conflicts between the State Hazard Mitigation Plan and the draft revised forest plan.

New Mexico Office of the State Engineer and Interstate Stream Commission

The New Mexico Office of the State Engineer has the authority and responsibility to administer surface and groundwater allocation and use. The Interstate Stream Commission, which includes the State Engineer as a member, established and administers the strategic water reserve, administers funding for certain water infrastructure projects, and is responsible for creating the New Mexico State Water Plan. The 2018 water plan integrates the state's 16 regional water plans and establishes the policies, goals and strategies necessary to address water resource issues. The plan covers eight policy topics including: (1) water infrastructure policy; (2) data collection, accessibility and monitoring policy; (3) drought; (4) watershed management; (5) water supply and demand; (6) water conservation; (7) water quality; and (8) water planning. Each of these policy topics is supported by a vast array of goals and strategies, many of which are pertinent to national forest management.

Compatibility, Contributions and Conflict

The draft revised forest plan is compatible with and complementary to the State Water Plan in many ways and there are many opportunities for the implementation of each plan to advance the other. The State Water Plan specifically identifies the need to collaborate with the Forest Service to better understand what can and should be done to protect water storage and delivery from National Forest System lands under changing climatic conditions. It has several goals related to reducing the impacts of wildfire on water supply and quality and data driven prioritization of watershed restoration treatments. The water plan also addresses the need for mitigation measures to protect both natural resources and the economy during drought and focuses on conservation measures.

The draft revised forest plan includes objectives for vegetation and overall watershed condition. The forest plan emphasizes the use of science and recognizes the need for strategic placement of mechanical treatments. Given cost constraints, strategic placement is necessary to facilitate broader use of fire to support landscape and watershed scale restoration, and thereby resilience to climate-

altered wildfire disturbances. Draft forest plan content for vegetation communities, soil, watershed, and riparian and aquatic ecosystems, and the management approach to change and uncertainty support many of the goals and strategies identified in the State Water Plan. The draft forest plan also includes a management approach to drought, which is heavy on early communication and coordination. The draft forest plan content for water uses advances the State Water Plan's goals related water conservation. Furthermore, the draft plan supports State goals to support threatened and endangered, and otherwise sensitive species habitat needs through plan direction to evaluate the effects of future proposed water infrastructure developments to those resources on the Gila National Forest and communicate any concerns to the State Engineer. There are no known conflicts between the draft revised forest plan and the State Water Plan.

New Mexico Department of Transportation

The New Mexico Department of Transportation (NMDOT) has a strategic, long-range plan. This long-range plan identifies the need to work collaborative with partners, including the Forest Service to identify information needs and provide continuous feedback on the kinds and quality of the information NMDOT presents to the public. It also recognizes the access State roads provide to public lands, the economic asset those lands represent, and the role NMDOT can play in supporting recreation and tourism.

Compatibility, Contributions and Conflict

The NMDOT long-range plan is compatible with the draft revised forest plan, but there is no forest plan content that directly advances NMDOT plan objectives. There is no known conflict between the draft revised forest plan and NMDOT's long-range plan.

New Mexico Economic Development Department

The New Mexico Economic Development Department (NMEDD)'s five-year plan for strategic economic growth and diversification (2013-2018), is in the process of being updated. The current plan was developed by the Economic Development Commission appointed by Governor Susanna Martinez. It contains comprehensive goals, objectives and strategies for assisting New Mexican communities in economic development. The Economic Plan has a theme of innovation leading to enterprise and economic development and highlights two primary goals: (1) creating a diversified knowledge-based economy and; (2) develop programs and initiatives requested by rural communities. Many of the strategies and recommendations covered in the plan relate to business and urban and rural revitalization, however it does touch on a few topics relevant to national forest management. These topics are water availability and quality and support of rural communities.

Compatibility, Contributions and Conflict

Where the Economic Plan touches on topics relevant to national forest management, it is broadly compatible with draft revised forest plan content. For instance, it acknowledges that "better management of the forest ecosystem" can benefit water resources; providing for favorable conditions of water flow and meeting or exceeding State water quality standards to support multiple uses on the forest, and beneficial uses downstream are desired conditions within the forest plan. The Economic Plan's goals for rural development and business support include acknowledgement that extractive industries are a critical sector of the State's economy and that a balance should be sought between a sound environmental future for New Mexico and industry growth. This is compatible with the desired conditions and management approaches for multiple uses and community relationships, which combined with plan direction and management approaches for natural resources, provides for

extractive uses in a sustainable manner. There are no known conflicts between the State's Economic Plan and the draft revised forest plan.

New Mexico Environment Department

The New Mexico Environment Department (NMED) includes several different bureaus responsible for air quality, water quality and waste management. NMED does not have a comprehensive planning document, but individual bureaus do. These are identified below.

Air Quality Bureau

The Air Quality Bureau is responsible for enforcing air quality standards of the Federal Clean Air Act. Their regulatory authority comes from New Mexico's Environmental Improvement Act, Air Quality Control Act, which includes a Smoke Management Plan, and the State Implementation Plan.

Surface Water Quality Bureau

The Surface Water Quality Bureau is responsible for enforcing surface water quality standards established by the Water Quality Control Commission which is delegated the authority to administer the Federal Clean Water Act through the New Mexico Water Quality Act. This includes development and maintenance of a water quality management plan and quality management and assurance plans.

Ground Water Quality Bureau

The Ground Water Quality Bureau is responsible for enforcing ground water quality standards as mandated by the New Mexico Water Quality Act and Ground and Surface Water Protection Regulations (20.6 NMAC). This bureau does not have a comprehensive planning document.

Waste Management Bureau

The Waste Management Bureau is responsible for regulating waste in the state. Many types of waste are potential environmental pollutants. This bureau does not have a comprehensive planning document.

Compatibility, Contributions and Conflict

NMED's regulatory authority originates in Federal law, State law, or both. Given this, plans or policies developed by NMED do not need to be compatible with any forest plan, but all forest plans within the state must be in compatible with NMED's plans, comply with regulation and policy, and advance the goals and objectives contained in plans and policies. The direction contained in the draft revised forest plan is compatible with, complimentary to, and in compliance with NMED plans and policies with the most pertinent plan direction being found in the soil, watershed, water quality, riparian and aquatic ecosystems, air quality and wildland fire and fuels sections of the draft revised plan. There is no conflict between the draft revised forest plan and NMED plans and policies.

New Mexico State Land Office

The New Mexico State Land Office is responsible for administering 9 million acres of surface and 13 million acres of subsurface estate for the beneficiaries of the state land trust, which includes schools, universities, hospitals and other important public institutions. It seeks to optimize revenues while protecting the health of the land for future generations. The State Land Office does not have a strategic plan, but it does have policies and procedures relevant to national forest management. These are related to historic and cultural resources and threatened and endangered plant and animal species.

Compatibility, Contributions and Conflict

Because historic and cultural resources and threatened and endangered plant and animal species are first and foremost governed by law, there is alignment between the policies of the State Land Office and draft revised forest plan. There is no conflict evident in the policy documents of the State Land Office and content in the draft revised forest plan.

Soil and Water Conservation Districts

Soil and Water Conservation Districts (SWCDs) are a subdivision of state government. They were organized in the 1930s as a response to the “Dust Bowl.” They are a local unit of government were intended to extend the conservation assistance provided by what was then the Soil Conservation Service, which is now known as the Natural Resources Conservation Service. Soil and Water Conservation Districts are authorized to conserve and develop the natural resources of the state and provide for flood control. They also coordinate assistance from all available sources—public, private, local, State and Federal—in an effort to develop locally driven solutions to natural resource concerns.

There are four SWCDs that have been involved in the Gila National Forest’s plan revision process: Grant, Hidalgo, Sierra, and the San Francisco District, which represents Catron County. All four of these Districts, were provided the invitation and opportunity to participate as a cooperating agency, but only San Francisco applied and was granted that status. The information and discussion that follows is based on the documents provided to the Gila National Forest at a coordination meeting with local governments.

Grant SWCD

Desired Conditions, Goals, Objectives and Proposed Actions

Grant SWCD’s long-range plan articulates two goals for Federal land and natural resources:

- To support the wise use and conservation of Federal lands and natural resources, especially federally protected wildlife, including well-planned management prescriptions.
- To provide policy, plans and other documents for other governmental agencies to use to ensure that their resource management and planning is consistent with that of Grant SWCD.

Goals and objectives are articulated by topic area including: agriculture and livestock production; Federal lands and natural resources and multiple use management; customs and cultures; private property purchase by Federal agencies; and roads and access. These are:

- Grant SWCD supports livestock grazing and other managed uses of watersheds and holds that, if properly managed, multiple uses is compatible with watershed management.
- The proper management and allocation of forage on Federal lands is critical to the viability of the Grant SWCD’s agriculture, recreation and tourism industry.
- Reduction in forage allocation resulting from forage studies, drought, or other natural disasters will be shared proportionately by wildlife.
- The viability of a large number of agriculture and livestock operations are dependent on access to grazing on Federal lands.

- Increases in available forage resulting from practices or improvements implemented by a managing agency will be allocated proportionately to all forage allocations, unless the funding source specifies the benefactor.
- Permanent increases or decreases in grazing allocation reflecting changes in available forage will be based on the vegetative type of the forage and applied proportionately to livestock or wildlife based on their respective dietary need.
- Forage allocated to livestock may not be reduced for allocation to other uses. Current livestock allocation will be maintained.
- Ensure that Federal lands are managed for multiple use and sustained yield for natural resources benefits of goods and services. Further, these lands should be managed to prevent loss of resources and private property from catastrophic events and to protect the safety and health of the public.
- The Conservation District desires to assist and coordinate with the U.S. Fish and Wildlife Service and all Federal resource agencies in developing and implementing consistent policies for balancing the protection of endangered and threatened species and in producing food and fiber for the American public.
- Federal land and natural resources agencies keep the Grant SWCD fully informed of management action proposed or to be implemented that may affect lands and natural resources within the District's boundaries, and allow the Grant SWCD adequate time to develop the Grand SWCD's position of such action should it not be clearly defined in the Grant SWCD's resource management plans or subsequent implementation plan.
- In support of our national energy needs and considering the nation's increasing dependency on foreign oil, all Federal lands must remain open to the greatest extent possible for the exploration and production of energy and other energy related products.
- Identification of energy and mineral potential and location is important to planning for future energy needs and resource management planning. The Grant SWCD supports such activity and requests that appropriate agencies plan, fund, and encourage by way of policy, management decisions for such activity.
- Livestock grazing, the resulting lifestyles, and the resulting imprint on the landscapes of the West is one of the oldest enduring and economically important cultural and heritage resources in the West and must be preserved and perpetuated.
- The land, its people and their heritage are at the heart of New Mexico's custom and cultures for the majority of the area residents and this relationship must be considered in all proposed actions.
- Grant SWCD supports agriculture on private and Federal lands as part of our custom, culture, heritage, and as an important segment of our local economy, as well as providing for a secure national food supply.
- There shall be no net loss of the private land base and that the Federal and State governments holds a sufficient amount of land to protect public interest. No "net loss" should be measured, in both acreage and fair value, without approval of the Grant SWCD.
- A private property owner has a right to dispose of or exchange his property as he/she sees fit within applicable law.

- A private property owner should be protected from Federal, State and Grant SWCD encroachment and/or coerced acquisition.
- It is imperative that the quality and quantity of water is not reduced below current levels.
- Any proposed sale, lease or other exchange of water must adequately consider and satisfy the Grant SWCD's interest and concerns before the Grant SWCD will participate or support the proposal.
- The access across and to Federal lands is critical to the use, management, and development of those lands and adjoining private lands.
- No roads, trails, right-of-way, easements, or other traditional access for the transportation of people, products, recreation, energy or livestock may be closed, abandoned, withdrawn, or have a change of use without full public disclosure and analysis.
- Access to all water related facilities such as dams, reservoirs, delivery systems, monitoring facilities, livestock water and handling facilities, etc., must be maintained. This access must be economically feasible with respect to the method and timing of such access. Unreasonable restrictions may result in the loss of use of such facilities and property rights.
- Public access and right-of-way for utilities and transportation of product must be maintained. This access must be provided for in the future when need is demonstrated. Any proposal or action taken by State or Federal agencies that will result in restriction on reasonable and economical access to these resources will be opposed.
- Grant SWCD supports the current policy of open recreation areas.
- Future access must be planned and analyzed to determine its disposition at the completion of its intended life. This is to ensure needed access is maintained or that such access is removed and resulting disturbances are reclaimed.
- Roads covered by RS-2477 should remain open.
- OHVs have become an important segment of the recreation industry and is an important tool and mode of transportations for farmers, ranchers and resources development.
- Public land management agencies must implement and maintain an aggressive OHV program to educate users on how to reduce resource impacts. This is to be followed by an aggressive enforcement program.
- The non-recreational use of OHVs, such as development and livestock operations, must be provided for in all areas unless restricted by law.
- The Grant SWCD will support limiting OHV to existing roads and trails and the development of designated trail system only in areas that demonstrate documented and substantiated adverse impacts. These designations must only occur in situations where it has been substantiated that adverse impacts cannot be mitigated by other management methods.
- Many archeological sites represent a unique culture and are closely related to early religious settlement of the area. They continue to have historical significance that are held by many residents as reverent or consecrated sites, and are the essence of their entity. These sites must remain accessible and be preserved.
- When the necessity for a closure has been established, additional trails and areas must be opened to offset the loss of that recreational opportunity.

- The creation or expansion of ACECs or wilderness limits access for the elderly and physically impaired. All such withdrawal management plans from multiple use must provide access for these individuals to the fullest extent possible and be consistent with the Americans with Disabilities Act.
- ACEC and wilderness management must provide for continued and reasonable access for property rights holders within the area and provide for full use and enjoyment of these rights.
- The public land agency must assess the ability to manage the resources for multiple uses and conservation and restoration practices, especially when Grant SWCD is a partner in such programs and activities.
- The public land agency must assess the ability to provide emergency services, law enforcement, water and waste management, search and rescue, and other essential services needed to support the proposed action.
- Intensify conservation planning assistance on those watersheds where critical, accelerated erosion involves treatment needs of an intensive nature. Participate with cooperating agencies in the development of upper watershed treatment policies, plans and activities....
- Develop more information regarding the feasibility of brush control through the reintroduction of fire to the ecosystem. Offer encouragement, support and assistance to New Mexico State University and other agencies and organizations to conduct field research in brush management.
- Encourage and assist ranchers to practice brush management on land where benefits of control are obvious with a strong emphasis on prescribed burns as an effective and economical practices as well as mechanical treatments where prescribed fire is limited by climate, wildland urban interface and extreme fuel loads.
- Assist range operators to improve range productivity in terms of beef production per acre by helping them to plan and carry out improved grazing management. Expect to see planned grazing systems on 100,000 acres of rangeland in the district, with particular emphasis on those ranches in poor and fair range condition.
- Assist range operators to restore, improve and/or maintain district rangelands by improving the use of range site and condition inventory information; offer range monitoring courses for education of cooperators in conjunction with the US Forest Service; additional development and use of range cost-return data; and the use of plant materials assistance to identify solutions to reseeding problems.
- Establish Noxious Weed Control Program in cooperation with New Mexico State University, Grant County Extension Services, New Mexico Association of Conservation Districts, Bureau of Land Management, County Road Department, New Mexico Road Department, US Forest Service and private landowners.

Compatibility, Contributions and Conflict

There is a great deal of alignment or compatibility between the Grant SWCD long-range plan and the draft revised forest plan, but there are areas where this is less the case. Most of the areas where there is not alignment are related to implementation more so than direction in the draft forest plan. Grant SWCD objective to require reopening of trails or areas to compensate for a necessary closure is unrealistic. Area closures are usually temporary and necessitated by fire, flood risk, or both. There may not be more than one area closure, and if there is, the area would be closed for similar reasons and would not be a good candidate to compensate for a perceived loss of recreation opportunity. The

same case may be made for trails, but some permanent trail closures may be necessary as forest management moves toward the plan desired condition for a sustainable trail system. Reopening or building another trail to replace closed trails would not result in movement toward a sustainable trail system. Even if it were possible to accommodate this objective, it is not likely to completely offset any loss of recreation opportunity as specific areas and trails offer different user experiences.

The Grant SWCD objective to constrain OHV use to existing roads and trails, only where cross-country travel has resulted in substantiated adverse effects, is not compatible with draft forest plan direction, which supports the travel management legislation enacted by congress. It would be illegal for the Gila National Forest, or any other national forest to align with this objective. The remaining areas of misalignment between the plans is related to livestock grazing and appears to stem from content in the 1986 forest plan. The 1986 forest plan contains differentiates between forage allocations for livestock and wildlife, and has proven not to be realistic or implementable; whether it be livestock or wildlife, whichever is there first and eats the fastest gets the most. In order to meet the Grant SWCD objectives for forage allocation, which appear to indicate a 50/50 split between wildlife and livestock, wildlife would have to be relocated when utilization was met which is not in the realm of possible plan implementation actions. Also, it is not implementable to distribute any additional forage, and therefore capacity, that could be realized from management practices or actions that benefit a specific area. The additional forage production is available wherever it grows and there is no implementation action that can change that. Another area of misalignment is related to the “no net loss of private property” objective in the Grant SWCD long-range plan. While this is analyzed in a draft revised plan alternative as part of the environmental analysis, it is not in the proposed action.

Aside from these few topics, implementation of the draft revised plan would advance many of the Conservation District’s goals and objectives. For example, there are management approaches that support the forest’s participation in collaborative noxious weed programs and rangeland monitoring. The forest plan content for community relationships and multiple uses advances the custom and culture content articulated in the long-range plan, and the livestock grazing content in the forest plan provides adequate flexibility for the improvement of grazing systems. Likewise, the implementation of the Grant SWCD long-range plan could improve the success of forest plan implementation in several ways. The SWCD’s objectives to work with livestock producers to carry out improved management practices where necessary and advances the draft forest plan’s desired conditions for livestock grazing and natural resources. Their support of prescribed fire as a management tool contributes to the success of the forest plan’s restoration objectives, and may help broaden general public support for the use of fire as a management tool.

Grant SWCD has been very active in coordination meetings between the Gila National Forest leadership and staff and local governments. Their efforts have helped improve relationships and build shared understanding, but continued efforts to maintain and improve transparency and communication are needed. Plan direction for community relationships and management approaches throughout the plan provide a path forward that promotes these critical relationship elements during implementation.

Hidalgo SWCD

Desired Condition and Objectives

Hidalgo SWCD’s land use plan articulates three goals, or desired conditions.

- Maintain and improve the soil, vegetation and watershed resources in a manner that perpetuates, sustains and expands the beneficial use of such resources while maintaining healthy ecosystems and fully supporting public safety, the customs and economic stability and viability of our industries and the general welfare of the citizens of the District.
- Work with Federal, State and local government agencies to coordinate with the Hidalgo Soil and Water Conservation District of the State of New Mexico so they can fulfill their primary legal responsibility to provide for the health, safety and well-being of their constituents.
- Work to reduce or eliminate the possibilities of unintended consequences of decisions and actions that may be taken by other government agencies that can negatively impact the Hidalgo Soil and Water Conservation District; their economies, their tax base, and the people they serve.

These desired conditions are supported by objectives.

- Assure the responsibilities set forth in the Act will be upheld for the full enjoyment and benefit of the citizens of Hidalgo SWCD
- To ensure the policies and actions of the local, State and Federal Government in matters of soil resource protections are full inured to the benefit of that resource.
- To elevate Hidalgo SWCD into a collaborative relationship between the local, State, and Federal bodies and agencies in regards to planning, outlining, orchestrating, scheduling, mapping, designing, manipulating, conceptualizing, formulating, designing, plotting, or strategizing land use plans that will affect the soil resources of the District today, tomorrow, or further into the future.
- Include custom and cultural outdoor recreation as standards amongst District endeavors.
- The equality and respect for Customs and Culture created in over 413 years of recorded history must be held inviolate. Hidalgo SWCD intends to maintain such a balance in the face of Federal and State management policies that are often driven by forces outside the jurisdiction of the District.
- No net loss of private property.

Compatibility, Contributions and Conflict

The Hidalgo SWCD are generally compatible with the draft revised forest plan, with the exception of the “no net loss of private property” objective. The forest planning process has contributed to the advancement of Hidalgo SWCD’s objective to collaborate with Federal agencies, and implementation of the forest plan could provide additional opportunities, although not much of the land under the Gila National Forest’s jurisdiction is located in Hidalgo County, which limits the ability of forest plan implementation to make a significant contribution toward the desired conditions and objectives of the Hidalgo SWCD.

Hidalgo SWCD has been active in coordination meetings between the Gila National Forest leadership and staff and local governments. Their efforts have helped improve relationships and build shared understanding, but continued efforts to maintain and improve transparency and communication are needed. Plan direction for community relationships and management approaches throughout the plan provide a path forward that promotes these critical relationship elements during implementation.

San Francisco SWCD

Goals and Objectives

The overarching goals of the San Francisco SWCD's land use plan are:

- Maintain and improve the soil, vegetation and watershed resources in a manner that perpetuates, sustains and expands the beneficial uses of such resources while maintaining healthy ecosystems and fully supporting public safety, the customs and economic stability and viability of our industries and the general welfare of the citizens of the District.
- Provide plans and policies that direct the San Francisco SWCD in coordination with local, State, and Federal bodies and agencies regarding planning, outlining, orchestrating, scheduling, mapping, designing, facilitating, imagining, formulating, designing, plotting, or strategizing land use plans that will affect the soil, water, and other resources of the District today, tomorrow, or further into the future.
- Work with Federal, State and local government agencies to fulfill the District's primary legal responsibility to provide for the health, safety, and wellbeing of their constituents.
- Work to reduce any possibility of unintended consequences from decisions and actions that may be taken by agencies that can negatively affect the District's economy, its tax base and the people it serves. Such action, in general, seeks to minimize the unintended consequences to the local land users from ongoing governmental courses of conduct.

These goals are supported by an objective that states:

- To create a coordinate working relationship with agencies and citizenry that protects and enhances local natural resources, safety and well-being for all.
- The District constituency must have a regulatory environment that works for them, not against them, and minimizes any conveyance of harm to District land users. The regulatory environment should enhance lives, safety, and resources and improve the economy without imposing unacceptable or unreasonable costs. All regulatory policies must recognize the private sector and private markets are the engines for economic growth. New regulatory approaches should respect the role of local and State governments and adopt regulations that are effective, consistent, sensible, and understandable. It is, therefore, imperative to set planning guidance for lands and resource interactions as they apply to matters of the District.

The plan also contains resource specific goals and objectives:

- Provide proactive support for corrective and conservation practices and programs to conserve, protect, and beneficially develop the soil resources of the District. It is also the goal of San Francisco SWCD to institute and manage vegetation and landscape projects that will mitigate blowing dust. Windblown dust in this area occurs both from natural and human-made sources.
- To ensure the policies and actions of the local, State, and Federal Government in matters of soil resource protections are fully inured to the benefit of the resource.
- To ensure the policies and actions of the local, State, and Federal Government in matters of water resource protections are fully inured to the benefit of the resource.
- Encourage land managers and landowners to seek technical assistance to mitigate surface disturbance and to facilitate soil and water conservation. Reestablish native or other desired vegetation.

- To accelerate projects such as brush control which support the natural replenishment of our grass base.
- Promote and provide technical information to Catron County and district cooperators on layout, design, and maintenance to reduce erosion and how to implement drainage structures on county, and private access roads.
- Provide technical information on native grass reseeding of any disturbed soils
- It is the intent of San Francisco SWCD to take an aggressive attitude to the perpetuation and enhancement of Agriculture as well as protect water rights within the District. Rather than adopting an attitude and/or policy support for acceptance of a stabilized, diminishing or retreating agriculture base, San Francisco SWCD will pursue alternatives for expanding the emphasis of agriculture and protecting the industry from anti-agricultural bias regardless of the source.
- San Francisco SWCD's Land Use Plan comprehensively provides the policies that allow for the continuation of farming and ranching with all the associated and supporting businesses that have made lands within San Francisco SWCD so productive and so important. All agriculture is dependent on proper soil erosion control, flood prevention, wildlife and species management, which are the responsibilities of this District.
- It is incumbent on soil and water conservation districts to minimize drift between Agriculture and various agencies, our land grant university, and local, State, and Federal Governments. San Francisco SWCD intends to aggressively solidify those vital relationships.
- San Francisco SWCD intends to take a lead in communicating and seeking government-to-government endeavors with other districts for the benefit of Agriculture.
- To reach legal and policy standards that result in zero net loss attrition of the farmland base.
- During periods of drought or other emergencies, local, State, and Federal agencies shall work closely with the District, the NM State Engineer, and other local, State, and Federal agencies to address availability of water for critical needs, including agriculture and municipal uses.
- Support and facilitate the continued use of private, State, and Federal lands for the production of livestock. Also, work to increase productivity of rangeland to increase and/or maintain Animal Unit Month ("AUMs") to maximum sustainable levels on rangeland within District boundaries as well as maintain and enhance desired plant communities for the benefit of watersheds, wildlife, water quality, recreation and livestock grazing.
- Land management plans, programs, and initiatives should provide that the amount of domestic livestock forage, expressed in animal unit months, for permitted, active use as well as wildlife forage, be no less than the maximum number of animal unit months sustainable by range conditions in grazing allotments and districts, based on "on-the-ground" and scientific analysis. This is essential to the proper operation of the District. Livestock producers do more than contribute to the economic stability of the community, which helps the District, but are also the primary entities that help to implement the Districts programs. Any reductions in domestic livestock animal unit months must be temporary and scientifically based upon rangeland conditions.
- Work closely with local, State and Federal agencies to identify areas for brush management and control, based on wildlife habitat needs, without compromising overall rangeland vegetation

productivity. Promote and develop treatment projects for brush management on lands that have invasive species such as but not limited to; mesquite, salt cedar, and cholla.

- Support the recognition and protection all private property rights, including water rights.
- Encourage the use of coordinated range management plans (allotment management plans or coordinated activity plans) for each grazing allotment that allow for the flexibility and updating of management during the ten-year term of the grazing permit. (i.e., water development; juniper, salt cedar and mesquite control; reseeding, fencing, salting plans, herding plans and grazing systems).
- Support management of rangelands to maintain and enhance desired plant communities for the benefit of watersheds, wildlife, water quality, recreation and livestock grazing.
- Support and facilitate range improvement projects to benefit rangeland, soil and water resources.
- Coordinate with Federal and State agencies on any planned or potential Federal or State land acquisition within San Francisco SWCD boundaries. Encourage Federal and State land management agencies to focus on lands currently under its responsibility.
- San Francisco SWCD will strive to manage vegetation and landscape projects that will (1) maximize grassland development for livestock and wildlife, collectively, (2) expand water supplies and systems to support such populations on an availability standard, (3) encourage research to determine benefits of more complex grazing practices, (4) work with the New Mexico Department of Game and Fish (NMDGF) to elevate quality hunt opportunities, and (5) educate the general public of the benefits and the symbiotic relationships of livestock and wildlife in this desert environment
- Encourage wildlife management practices that sustain wildlife resources and habitat without measurably degrading other multiple use activities or private property rights.
- San Francisco SWCD strongly urges land management agencies to: upon termination of a grazing permit, livestock permittee will be compensated for the remaining value of improvements such as water infrastructure, or be allowed to remove such improvements that permittee made on his or her allotment.
- San Francisco SWCD will work with the land management agencies to ensure forage reductions resulting from forage studies, fire, drought or other natural disasters will be implemented on an allotment basis and applied proportionately based on the respective allocation to livestock, wildlife. Reductions resulting from forage studies will be applied to the use responsible for the forage impact.
- San Francisco SWCD will work with the land management agencies to ensure permanent increase or decreases in grazing allocations reflecting changes in available forage will be based on the vegetative type of available forage and applied proportionately to livestock or wildlife based on their respective dietary need.
- San Francisco SWCD strongly supports the following mandate; “The mandate of the Taylor Grazing Act is not furthered by management practices designed to reduce grazing to improve the range.”
- The District will support opportunities for livestock grazing on private, State and Federal lands. This includes advocating for the protection of equitable property rights, science-based land stewardship, and promotion of Best Management Practices for the improvement and continued use of all rangelands within the District.

- Ensure that water projects developed for livestock will be designed so that wildlife can use the water without hazard.
- Promote and coordinate water distribution system installation and infrastructure improvements to benefit all wildlife and livestock health and welfare within the District.
- Encourage private landowners to plan, develop, and implement resource management plans that meet the standards of grazing management systems through: proper stocking, deferred and rotational grazing, erosion control, control of poisonous and noxious plants, water development and distribution, and fencing.
- San Francisco SWCD will oppose any agency effort that restricts the development of livestock water or other rangeland improvements.
- Recommend local, State and Federal agencies cooperate with the District and the agriculture industry to define desired plant communities on local, State and Federal lands.
- Work with all landowners and land managers to increase productivity of rangeland to increase and/or maintain AUMs that maximum sustainable levels on rangeland. Any grazing AUMs that are placed in a suspended use category should be returned to active use when range conditions improve.
- San Francisco SWCD will support the right of local citizens to protect their private property from wildfire. Planned and unplanned ignitions can achieve land and resource management goals. However, fire management should be only one tool in the restoration process and should be integrated with all other land management activities.
- The Districts long term plans, policies and projects rely upon proper vegetative management on all lands, private, State and Federal. Therefore, it is imperative that when the District identifies lands with excessive vegetation that increase the opportunity for wildfires, that it will coordinate with those agencies and landowners to assist in reducing the potential hazard.
- Through coordination with land management agencies and landowners, the District will assist in developing policies for grazing rest prescriptions related to either wildfires or prescribed burns on a site-specific basis taking into account the needs of the vegetation and flexibility to meet the needs of the landowner and to protect excessive soil erosion. Vegetative treatments and use of livestock grazing shall be used to keep fuel loads within appropriate limits
- The District will assist in developing plans and projects that strike a balance of beneficial use of fire and the detrimental effects of intense wildfire.
- Continue to support area Community Wildfire Protection Plans.
- Post-fire grazing will not be limited when monitoring and evaluation produces relevant, accurate data that demonstrates grazing will not unduly harm the range.
- Encourage development of vegetation treatments and use of livestock grazing to keep fuel loads within appropriate limits.
- To coordinate all activities in a manner that will protect the quality of customs and culture derived from historical and environmental values; that, where appropriate, will use and protect all lands in a condition that will promote land health that contributes to community economic freedom and security. The District will undertake such actions in a manner that serves all citizens with a high standard of ethical and objective leadership.

- Respect private property rights and consider the effects of policies, regulations, and Federal and State decisions on these rights.
- Recognize that the protection and preservation of privately owned land is desirable and necessary in the District.
- It is the goal of SFSWCD to conserve, perpetuate, and expand the good stewardship of outdoor recreation within the District.
- Promote cooperation with SFSWCD cooperators, organizational partners and entities such as town councils, county commissions, State and Federal agencies. SFSWCD will maintain existing and develop new partnerships to implement best management practices on all lands within SFSWCD boundaries.
- Encourage recreational activities that enhance opportunities for economic development and maintain the custom and culture of the District
- Encourage recognition of the social, cultural and economic significance of recreation in the region, and encourage implementation of policies that will evaluate the viability and impacts of various recreational opportunities, while ensuring protection of other resources and resource use, conservation of rangeland, water and soil resources.
- Maintain, restore, improve, and protect riparian areas so that they are in proper functioning condition for their productivity, biological diversity, and sustainability.
- Promote the perpetuation and enhancement of riparian habitat. Encourage a coordinated approach when establishing riparian and upland management plans and encourage the use of Best Management Practices.
- Educate the value of balanced watershed management that includes riparian habitat.
- Encourage a coordinated approach when establishing riparian and upland management plans and encourage the use of Best Management Practices.
- SFSWCD will promote riparian management based on the New Mexico Non-Native Phreatophyte/Watershed Management Plan.
- Participate in all decisions and proposed actions, including NEPA procedures for an Environmental Assessment (“EA”) or Environmental Impact Statement (“EIS”), which affect the District, regarding sensitive, threatened, or endangered species recovery plans, introduction or reintroductions, habitat conservation plans, conservation agreements or plans, or candidate conservation agreements. The matter of listing or removal of endangered species must be done on the basis of active coordination with the District.
- Coordinate with all stakeholders on developing alternatives to listing, which may include conservation plans and related conservation agreements with local, State and Federal agencies to address possible threats to species and their habitat and to avoid official listing.
- San Francisco SWCD will promote the balance of any action that results in habitat improvement and requires that the action make allowances for traditional uses such as grazing and irrigation and it benefit both the endangered species and other users.
- Address the impact of all actions with the statutory requirements of the ESA including the impact to the managed value of History.
- Coordinate with Federal agencies in all decisions and proposed actions, including NEPA procedures for an Environmental Assessment (“EA”) or Environmental Impact Statement

(“EIS”), which affect the District, regarding sensitive, threatened, or endangered species recovery plans, introduction or reintroductions, habitat conservation plans, conservation agreements or plans, or candidate conservation agreements.

- Recommend that proponents of protection, recovery activities, and other threatened and endangered and sensitive species programs finance the activities, including public involvement and compensation to the affected landowners.
- Recommend that Federal agencies respect distinctions between special status species (state sensitive species, etc.) and those listed under the ESA.
- Support control of predators, rodents and insects, which are disease-bearing vectors that are a recognized threat to public health.
- It is the goal of San Francisco SWCD is to garner the support, understanding, and backing of our community and partner agencies and promote “Raise a generation of youth that understands the importance of agriculture.”
- Disseminate and promote partner agencies programs.
- Continue to support Soil Stewardship programs.
- Ensure that a wilderness designation does not affect state authority over water resources and that New Mexico's substantive and procedural laws controlling appropriation and allocation of water resources remain the primary authorities governing the waters in the District regardless of wilderness designation. Enforce determination that wilderness designation does not create a reserved water right.
- Protect any interests in ditches, reservoirs or water conveyance facilities and easements or rights-of-way associated with those interests from impairment or diminution by any wilderness or other special use designations.
- San Francisco SWCD strongly supports the critical need for healthy watersheds that provide a reliable supply of high-quality water and other benefits for New Mexico by implementing long term, collaborative, comprehensive watershed-scale restoration projects that foster ecosystem function and resilience.
- Promote and support increasing partnerships and exchanges between natural resource agencies, local government and private landowners on watershed restoration projects.
- Support the maximum area of land possible to be excluded from single-use or restrictive-use designations, so that excluded land is available for active and sound management on public lands.
- Promote and support increasing partnerships and exchanges between natural resource agencies, local government and private landowners.

Compatibility, Contributions and Conflict

The San Francisco SWCD’s land use plan and the draft revised forest plan are largely compatible and complimentary. However, there are few areas where they are not as compatible. In particular, when forage reductions occur from forage studies, fire, drought, or other natural disasters, assigning causation to either wildlife or livestock and applying those reduced allocations to the use responsible is not likely to be an implementable on Federal public lands. Similarly, forage allocation based on the respective dietary needs of wildlife and livestock species is not implementable direction. As previously discussed under this heading for Grant SWCD, this San Francisco SWCD plan direction

appears to be tied to the direction contained in the 1986 forest plan, which is not moved forward into the proposed draft forest plan.

Aside from these few topics, implementation of the draft revised plan would advance many of the Conservation District's goals and objectives. For example, there are management approaches that support the forest's participation in collaborative noxious weed programs and rangeland monitoring. The forest plan content for community relationships and multiple uses advances the custom and culture content articulated in the long-range plan, and the livestock grazing content in the forest plan provides adequate flexibility for the improvement of grazing systems. Likewise, the implementation of the San Francisco SWCD plan could improve the success of forest plan implementation in several ways. The SWCD's objectives to work with livestock producers to carry out improved management practices where necessary and advances the draft forest plan's desired conditions.

San Francisco SWCD has been very active in coordination meetings between the Gila National Forest leadership and staff and local governments. Their efforts have helped improve relationships and build shared understanding, but continued efforts to maintain and improve transparency and communication are needed. Plan direction for community relationships and management approaches throughout the plan provide a path forward that promotes these critical relationship elements during implementation.

There is one issue raised in the San Francisco SWCD Plan that cannot and will not be addressed in the forest planning process and that is the recognition and protection of grazing rights. The forest plan must be consistent with law and regulation, which does not recognize grazing "rights." It does recognize grazing permits and the forest plan includes grazing as one of the multiple uses it sustains.

Sierra SWCD

Goals and Objectives

Sierra SWCD's land use plan articulates three overarching goals:

- Maintain and improve the soil, vegetation and watershed resources in a manner that perpetuates, sustains, and expands the beneficial uses of such resources while maintaining healthy ecosystems and fully supporting public safety, the customs, and economic stability and viability of our industries and the general welfare of the citizens of the District.
- Work with Federal, State and local government agencies to fulfill the District's primary legal responsibility to provide for the health, safety and well-being of their constituents.
- Work to reduce any possibility of unintended consequences from decisions and actions that may be taken by agencies that can negatively impact the District; its economy, its tax base and the people it serves.
- Provide proactive support for corrective and conservation practices and programs to conserve, protect, and beneficially develop the soil resources of the District.

These goals are supported by an objective:

- To create a coordinate working relationship with agencies and citizenry that protects and enhances local natural resources, safety and well-being for all.
- The District constituency must have a regulatory environment that works for them, not against them. The regulatory environment should enhance lives, safety, and resources and improve the

economy without imposing unacceptable or unreasonable costs. All regulatory policies must recognize the private sector and private markets are the engines for economic growth. New regulatory approaches should respect the role of local and State governments and adopt regulations that are effective, consistent, sensible, and understandable. It is, therefore, imperative to set planning guidance for lands and resource interactions as they apply to matters of the District.

- To elevate Sierra SWCD into a government to government relationships between the local, State, and Federal bodies and agencies in regards to planning, outlining, orchestrating, scheduling, mapping, designing, manipulating, conceptualizing, formulating, designing, plotting, or strategizing land use plans that will affect the soil, water, and other resources of the District today, tomorrow, or further into the future.

Resource specific goals and objectives include the following:

- Provide proactive support for corrective and conservation practices and programs to conserve, protect, and beneficially develop the soil resources of the District.
- Assure the responsibilities set forth in the Act will be upheld for the full enjoyment and benefit of the citizens of Sierra SWCD.
- To ensure the policies and actions of the local, State, and Federal Government in matters of soil resource protections are fully inured to the benefit of the resource.
- To accelerate projects such as brush control which support the natural replenishment of our grass base.
- Provide proactive support for corrective and conservation practices and programs to protect the public and conserve, expand, extend, and develop beneficially the water resources of the District.
- To assure the policies and actions of the local, State and Federal Government in matters of water resources protections are fully inured to the benefit of that resource.
- To seek and adopt substantive projects that retain water within the District for the purposes of returning waters into natural and or infrastructure features that expand beneficial uses.
- It is the intent of Sierra SWCD to take an aggressive attitude to the perpetuation and enhancement of Agriculture as it relates to the basic resources of soil and water within the District.
- Rather than adopting an attitude and/or policy support for acceptance of a stabilized, diminishing or retreating agriculture base, Sierra SWCD will pursue alternatives for expanding the emphasis of agriculture and protecting the industry from anti-agricultural bias regardless of the source.
- To provide widespread support for the continuation of farming and ranching with all the Sierra SWCD intends associated and supporting businesses that have made lands within Sierra SWCD so productive and so important to the Resource Universe.
- It is incumbent on soil and water conservation districts to minimize drift between Agriculture and various agencies, our land grant university, and local, State, and Federal Governments. Sierra SWCD intends to aggressively solidify those vital relationships.
- Sierra SWCD intends to take a lead in communicating and seeking government-to-government endeavors with other districts for the benefit of Agriculture.
- To reach legal and policy standards that result in zero net loss attrition of the farmland base.

- It is the goal of Sierra SWCD to institute and manage vegetation and landscape projects that will (1) maximize grassland development for livestock and wildlife, collectively, (2) expand water supplies and systems to support such populations on an availability standard, (3) encourage research to determine benefits of more complex grazing practices, (4) work with the New Mexico Department of Game and Fish (NMDGF) to elevate quality hunt opportunities, and (5) educate the general public of the benefits and the symbiotic relationships of livestock and wildlife in this desert environment.
- Coordinate with Federal agencies, other State agencies, New Mexico Department of Agriculture (NMDA) and New Mexico State University (NMSU) to incorporate the most dynamic arid grasslands endeavors known to the world today where possible.
- Coordinate with district livestock producers, Federal agencies New Mexico Cattle Grower's Association, NMSU, NMDA, and other affiliated parties to promote a robust and healthy livestock industry within the District.
- Promote and coordinate water distribution system installation and infrastructure improvements to benefit all wildlife and livestock health and welfare within the District.
- Promote and coordinate other valuable and essential work that will provide a healthy environment for the beneficial use of resources that are implicit in the husbandry of wildlife and livestock endeavors.
- Review and promote the therapeutic effects of diverse ungulate grazing.
- Seek project and funding opportunities to build distribution system infrastructure to place water sources no greater than two miles from any point in the District.
- It is the goal of Sierra SWCD to conserve, perpetuate, and expand the good stewardship of outdoor recreation within the District.
- Promote outdoor activities of all types.
- Include outdoor recreation implicit in Customs and Culture as standards amongst District endeavors.
- To secure and perpetuate access for historical recreational endeavors.
- It is the goal of Sierra SWCD to promote the health and perpetuation of Riparian Habitat within the District.
- Promote the perpetuation and enhancement of Riparian Habitat.
- Educate the value of balanced watershed management, which includes Riparian Habitat.
- To create pilot projects to expand dual roles of limited water sources to multiple uses.
- It is the goal of Sierra SWCD to promote cutting edge management of arid lands stewardship within the District.
- Engage the BLM, NMDA, NMSU and the duly noted cooperators in establishing an arid lands grazing district.
- It is the position of Sierra SWCD to support the local citizenry in the unencumbered right to protect them and their private property from the ravages of floods. The District is against any administrative land designations or policies that would result in obstruction of such private property protection. It is the goal of the District to uphold such a basic right. It is also the goal of Sierra SWCD to capture, manage and put to beneficial use all storm water emanating from

controlled and wild arroyos within the District. That expansion of the District's goal is fundamental to the safety and health of every citizen within the District.

- To protect the life, limb, and property of all citizens within the District from uncontrolled flooding.
- To work to limit Federal restrictions of projects, access, and planning that would obstruct such safety and welfare measures within the District.
- To capture and return all flood waters within the District to beneficial use.
- To conceptualize an expanded water management system.
- It is the goal of Sierra SWCD is to support the right of local citizens to protect their private property from wildfire.
- Identify and strike a balance of beneficial use of fire and the detrimental effects of wildfire.
- It is the goal of Sierra SWCD to coordinate all activities in a manner that will protect the quality of Customs and Culture derived from historical and environmental values; that, where appropriate, will preserve and protect all lands in a condition that will promote land health which contributes to community economic freedom and security; and undertake such actions in a manner that serves all citizens with a high standard of ethical and objective leadership.
- Sierra SWCD intends to maintain balance within the actions of the Board itself as well as the actions of Federal and State government in land use planning within the District.
- The equality and respect for Customs and Culture created in over 413 years of recorded history must be held inviolate. Sierra SWCD intends to maintain such a balance in the face of Federal and State management policies that are often driven by forces outside of the jurisdiction of the District.
- It is the goal of Sierra SWCD is to garner the support, understanding, and backing of our community and partner agencies.

Compatibility, Contributions and Conflict

The Sierra SWCD's land use plan and the draft revised forest plan are largely compatible and complimentary and implementation of each plan will contribute to the success of the other.

Sierra SWCD has been active in coordination meetings between the Gila National Forest leadership and staff and local governments. Their efforts have helped improve relationships and build shared understanding, but continued efforts to maintain and improve transparency and communication are needed. Plan direction for community relationships and management approaches throughout the plan provide a path forward that promotes these critical relationship elements during implementation.

Cooperating Agencies

The National Environmental Policy Act of 1969 (42 U.S.C. 4231 et seq.) allows certain Federal, State, local and tribal governmental organizations to be granted cooperating agency status when the agency has "jurisdiction by law and special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment" (40 CFR 1508.5). Cooperating agencies lend technical assistance or other resources to the development of the draft forest plan and

environmental analysis. All decision-making authority for management of the national forest is retained by the U.S. Department of Agriculture, Forest Service.

On June 2, 2017, the Gila National Forest solicited interest from 51 Federal, State, local and tribal governments in cooperating agency status for the plan revision process. Three ultimately signed on as cooperating agencies. The cooperating agencies for the Gila National Forest's plan revision process include:

- New Mexico Department of Agriculture
- New Mexico Department of Game and Fish
- San Francisco Soil and Water Conservation District

Cooperating agencies attended technical and general public meetings to engage in discussions and provide input regarding initial work products with the Gila National Forest, other cooperating agencies, nongovernmental organizations and the general public. They also provided feedback on pre-draft and draft products, technical expertise, information on the Gila National Forest's draft forest plan's consistency with their own management plans, and represented the interests and needs of their constituents. Complementary to coordination efforts, involving cooperating agencies in the planning process provides additional opportunities to share perspectives, develop mutual understanding, improve relationships and establish a strong foundation for the future.

Appendix F. Documentation of the Wilderness Process

Introduction

Each national forest undertaking forest plan revision under the 2012 Planning Rule is required to complete a process of identifying and evaluating lands that may be suitable for inclusion in the National Wilderness Preservation System (hereafter referred to as process), and determine whether to recommend any of the evaluated lands to Congress for wilderness designation. Congress reserves the authority to designate wilderness through legislation. [Forest Service Handbook 1909.12 Chapter 70](#) provides direction and guidance for the four-step process to be completed as one part of the larger Plan Revision effort:

1. **Inventory** to identify all National Forest Lands in the plan area that may have wilderness characteristics as defined in the Wilderness Act
2. **Evaluation** of the wilderness characteristics possessed by the lands identified in the Inventory step of the process
3. **Analysis** of the evaluated areas that are determined to be potentially suitable for inclusion in one or more alternatives as part of the Forest Plan Revision National Environmental Policy Act (NEPA) process.
4. **Recommendation** of any lands determined by the forest supervisor (Responsible Official) that should be included in the National Wilderness Preservation System. Only Congress may designate wilderness.

More detailed information on this process can be found on the Gila National Forest [website](#).

Step One – Inventory

An interdisciplinary team (ID Team) of diverse Forest Service resource specialists was appointed by the forest supervisor to complete the Inventory process, incorporating public input to complete a transparent, reasonably broad, and inclusive inventory process that identified the Gila National Forest lands that may have wilderness characteristics as Step 1 of the overall process.

The product resulting from the Inventory process was a series of maps that was made available for public review and feedback, and included as part of the Forest Plan Revision official documentation. The Inventory Maps include all National Forest System areas that are identified to move on to the next step of the process, which is the evaluation of the inventoried lands.

Lands shown in the series of inventory maps do not imply designation or convey or require a particular kind of management, and inclusion or removal of any of these lands will continue to be open to consideration until the forest supervisor signs the Record of Decision for the Forest Plan EIS.

Steps that were followed in the Gila National Forest Inventory Process:

1. **Because no definition of “substantially noticeable” is provided in FSH 1909.12, Chapter 70, and for the purposes of undertaking a reasonably broad, inclusive, and transparent Inventory of lands with potential wilderness characteristics, the Gila National Forest incorporated stakeholder input to help develop a definition of for use in Inventory process:**

In June 2017, the Gila National Forest staff held five community meetings and one technical meeting for the forest plan revision process. These meetings occurred the week of June 12, 2017, in the following New Mexico towns: Quemado, Reserve, Silver City, Truth or Consequences, and Las Cruces. Among the topics included was defining “substantially noticeable” improvements as they relate to inclusion in the inventory of lands with potential wilderness characteristics.

Participants were asked to write their responses to the following 3 questions on a sticky note for each of 11 pictures with a human created structure or improvement in it:

1. Do you think the structure or improvement in this picture is substantially noticeable?
2. Why or why not?
3. Can you think of any change in circumstance that would change your answer to question number one?

Common themes that were identified across a range of participants throughout the meetings were considered when developing the Gila National Forest definition of “substantially noticeable”:

Substantially Noticeable improvements are defined for the Gila National Forest as those that negatively affect the predominantly natural appearance of the surrounding landscape to an average, reasonable person due to any single or combination of the following traits:

- They are not of a relatively small size or of an inconspicuous height compared to surrounding features on the landscape;
- They are numerous within the area and are located close by to each other rather than scattered broadly across the landscape;
- They are not unobtrusive in shape or contour, and consist of straight lines and right angles;
- They are highly reflective or not of natural coloration, and cannot be made non-reflective or altered to be a more natural coloration;
- They appear to be of modern, human construction, and are not made of natural or natural appearing materials;
- They are not shielded from general view by their location, by being sheltered by landscape features, or by being hidden by surrounding vegetation;
- They are not temporary in nature, and cannot be removed or restored without unreasonable expense or difficulty, or without inflicting unreasonable impacts to a valid existing forest use, existing essential service, essential infrastructure, valid existing right, or a valid existing permitted use expected to continue for the foreseeable future;
- They will not either decompose or naturalize by vegetation growth, and will continue to affect the natural appearance of the area for more than 20 years into the future;
- They do not contribute significantly to the historical character and cultural context of the area by their presence and preservation;
- They that are not a range improvement allowed to be maintained under the Congressional Grazing Guidelines for Wilderness, or they are not similar to improvements that currently exist in Gila National Forest wilderness areas.

2. **A GIS analysis was conducted of existing roads across all Gila National Forest lands. All appropriate roads layers were included in the GIS analysis from the Gila National Forest**

Motorized Vehicle Use Maps (MVUM) that were developed as part of the Gila National Forest Travel Management Process.

Existing roads that were to be included in the inventory were identified by the following criteria according to the Planning Handbook Chapter 70:

- Areas that contain forest roads maintained to level 1 (see Glossary section for a detailed description of the maintenance levels 1 through 5);
- Areas with any routes that are decommissioned, unauthorized or temporary, or forest roads that are identified for decommissioning by a previous decision or in a travel management plan or analysis;
- Areas with forest roads that will be reclassified to level 1 through a previous decision or in a travel management plan or analysis;
- Areas may be included that (although they contain roads) were through some previous planning effort identified as potentially being a candidate for consideration as recommended wilderness.
- The forest supervisor may also decide to include some areas identified by comments or another government agency recommendation, even if they may currently contain roads;
- Areas with historical wagon routes, historical mining routes, or other settlement era transportation features considered part of the historical and cultural landscape of the area;
- Areas with maintenance level 2 roads that do not meet the criteria for exclusion described in the next section.

All roads to be excluded from the inventory were identified according to the following criteria from the Planning Handbook Chapter 70:

- Roads permanently authorized for a valid easement or other interest;
- Forest roads maintained to levels 3, 4, or 5;
- Level 2 (or higher-level roads that will be reclassified to level 2 through a previous decision) that meet one or more of the following criteria and are not in proposed areas for cultural or historical significance;
- They have been improved and are maintained by mechanical means to ensure relatively regular and continued use;
- They have cumulatively degraded wilderness character or precluded future preservation of the area as wilderness;
- They have been identified for continued public access and use in a project level or travel planning decision supported by NEPA analysis; or
- If for any other reason, they disqualify the area for evaluation and as potentially suitable for wilderness, based on assessment information or on-the-ground knowledge;
- The ID Team agreed to set inventoried area boundaries to an initial buffer of 300 feet from level II and higher roads to be consistent with Travel Management dispersed camping corridors in effect on many forest roads. However, throughout the Inventory, Evaluation, and Analysis steps of the process, buffers will be adjusted to a distance that aligns to the context of individual circumstances;

- As some areas are carried forward into the next steps of the process, further refinements in boundaries and buffers may be necessary to account for conflicts and unique individual circumstances, such as administrative access, rights of way, and other valid existing rights.
- 3. Using GIS, INFRA database, on-the-ground knowledge, and any other appropriate sources of information (including information from public/stakeholder comments), all areas containing improvements that meet the definition of “substantially noticeable” were identified.**
- For consistency with buffers applied to roads, all substantially noticeable improvements were initially excluded from inventoried areas by a buffer of 300 feet from the area boundaries;
 - Gravel pits and areas of mining activity were initially buffered for 1,000 feet from inventoried areas, to allow for potential future pit development and mine site restoration activity needs;
 - Inventoried areas that are immediately adjacent to planned vegetative treatments were buffered 100 feet from mechanical treatment activity areas indicated on GIS layers;
 - As areas moved forward in the process, buffers around substantially noticeable improvements were re-examined and adjusted on a case by case basis to be an appropriate distance in the context of individual circumstances;
 - Designated fuelwood areas, approved through a NEPA process and open to public use, were considered to be substantially noticeable due to extensive evidence of human activity;
 - In cases where singular and isolated, or multiple and widely dispersed substantially noticeable improvements are in the interior of a larger polygon area, it may prove difficult to exclude them with a buffer or by a making a simple boundary adjustment; in such cases, efforts will be made to include in the inventory the unaffected surrounding areas by means of dissecting the area into smaller inventoried areas, by use of a “cherry stem” exclusion from the boundary to the improvement, or by some other means;
 - On a case-by-case basis, forest supervisor discretion may allow for substantially noticeable improvements to be included when use of boundary adjustment or “cherry stemming” is not possible and if the surrounding inventoried areas should be evaluated for wilderness characteristics in Step 2 of the process.
- 4. All lands were included in the inventory with improvements or evidence of past human activities that were found to not be “substantially noticeable.” This may include (but is not necessarily limited to) the following types of improvements as suggested in the Forest Service Planning Handbook Chapter 70:**
- Airstrips and heliports;
 - Vegetation treatments that are not substantially noticeable;
 - Timber harvest areas where logging and prior road construction are not substantially noticeable;
 - Permanently installed vertical structures, such as electronic installations that support television, radio, telephone, or cellular communications, provided their impacts, as well as their maintenance and access needs, are minimal;
 - Areas of mining activity where impacts are not substantially noticeable;

- Range improvement areas (FSM 2240.5), involving minor structural improvements (for example, fences or water troughs) and nonstructural improvements (such as chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable;
- Recreation improvements, such as occupancy spots, or minor hunting or outfitter camps. As a general rule, developed sites should not be included. Areas with minor, easily removable recreation developments may be included;
- Ground-return telephone lines, electric lines, and powerlines if a right-of-way has not been cleared. Powerlines with cleared rights-of-way, pipelines, and other permanently installed linear right-of-way structures should not be included;
- Watershed treatment areas (such as contouring, diking, channeling) that are not substantially noticeable. Areas may include minor watershed treatments that have been accomplished manually such as small hand-constructed gully plugs;
- Lands adjacent to development or activities that impact opportunities for solitude. The fact that nonwilderness activities or uses can be seen or heard from within any portion of the area, must not, of itself, preclude inclusion in the inventory. It is appropriate to extend boundaries to the edges of development for purposes of inclusion in the inventory;
- Structures, dwellings, and other relics of past occupation when they are considered part of the historical and cultural landscape of the area;
- Areas with improvements that have been proposed by the Forest Service for consideration as recommended wilderness as a result of a previous forest planning process or that the forest supervisor judges to deserve to be included in the inventory that were proposed for consideration through public or intergovernmental participation opportunities (sec. 70.61 of FSH 1909.12).

5. Area boundaries were adjusted where roads or private property boundaries were in relatively close proximity to each other, or excessively narrow areas were created between roads and/or private property boundaries

- In instances where inventoried area boundaries with private property or Level II or higher roads (including their 300-foot buffer) were located within a relatively short distance from each other (making them substantially noticeable to each other across the relatively short divide, the two were in some instances joined together to form a new boundary excluding this smaller area;
- Examples may include “cherry stem” intrusions into the area that are closely oriented, relatively parallel, and at a close enough distance to be substantially noticeable to each other;
- The acceptable distance between roads and boundaries that were joined in this manner was variable on a case-by-case basis and site-specific circumstances as judged by the ID Team.

6. The ID Team assigned each identified area on the Inventory Map(s) an Identification Number that consists of the following:

- Upper-case, or capital letter(s) indicating the district(s) upon which the area is located: “Q” for Quemado District, “B” for Black Range District, “R” for Reserve District, G for Glenwood District, “W” for Wilderness District, and “S” for Silver City District;
- The letter(s) were followed by a sequential number among the set of polygons within the district boundaries where it is located. For example: if the Glenwood District has 7 discrete polygons identified on that district, the assigned numbers would be G1 through G7;

- For polygons that cross district boundaries, they were assigned the letters for each district, plus a sequential number separate from those assigned in each district. For example, if there were 3 polygons that cross the boundary between Silver City and Glenwood districts, they would be numbered SG-1 through SG-3. And, if a single polygon crossed the boundary between Quemado, Reserve and Glenwood districts it would be numbered QRG-1;
 - Separate inventoried area boundary polygons contiguous to the same existing wilderness, primitive area, administratively recommended wilderness, or wilderness inventory of other Federal ownership, were generally distinguished by using the same identifier number with a lower-case letter at the end – for example: two separate polygons on the Black Range District contiguous to the Aldo Leopold Wilderness would be numbered B-7a, and B-7b.
- 7. For ease in identification by the agency and the public, each area was assigned a unique Common Name Identifier in addition to its assigned Identification Number. The ID Team consulted with the ranger district where the area is located to determine an appropriate informal name for a Common Name Identifier.**
- Assignment of a Common Name identifier was intended to aid in communication by making available for use by the IDT and stakeholders a simple, easily remembered identification for each area that the ID Team evaluated and analyzed during the next steps of the process;
 - For example: If reference were made to the Aspen Mountain Area, both the public and agency employees will more easily orient to the area than if it were referred to as only area G1;
 - The Common Name was chosen to correspond with geographic location, a prominent geologic, natural, historic, or cultural feature within the area, a name previously assigned to an Inventoried Roadless Area or Wilderness Study Area that is part or entirely within the inventoried area boundary, by its association with a contiguous, existing wilderness, primitive area, or wilderness inventory of other Federal ownership, or some other reason at the discretion of the ID Team (in consultation with the ranger district where the area is located);
 - In all official correspondence, inventoried areas were referred to by both their Common Name and Identification Number.
- 8. Prior to release of the DRAFT Inventory Map, the DRAFT Inventory Process Document was released for public review and feedback (30 days).**
- Access to this DRAFT document ([link](#)) allowed stakeholders to become familiar with the process used to develop the DRAFT Inventory, and facilitated consideration of public feedback on the Gila National Forest inventory process and definition of substantially noticeable;
 - A Frequently Asked Questions document was also created ([english](#), [en español](#)) for the inventory and evaluation process that was distributed on the website and other public engagement activities.
- 9. Following an internal forest review of stakeholder comments, the FINAL Inventory Process Document ([link](#)) was released, and the DRAFT Inventory Maps were released for public review and feedback (30 days).**
- Stakeholders were able to view the inventoried areas and make comments using the interactive web map called [StoryMap](#) as well as access digital (.pdf) and hardcopy maps. A “Guide to Commenting” document was also provided ([link](#)).

10. If applicable, any additional areas would have been included on the FINAL Inventory Maps at the forest supervisor’s discretion:

- Regardless of whether they meet the inventory criteria, the Planning Handbook gives the forest supervisor authority to include any additional lands along with those identified by the inventory to be included in the Evaluation step of the process (1909.12 Chapter 70 section 71.2); the forest supervisor did not exercise this discretion to include any additional areas;
- Any such areas would have been assigned an Identification Number and Common Name Identifier by the processes identified in steps 8) and 9);
- No additional areas were included at the forest supervisor’s discretion for the Gila National Forest.

11. Following the end of the stakeholder review period, consideration of stakeholder comments and input from a continued internal review, the FINAL Inventory Map(s) were released.

Results of the inventory included 1,219,019 acres of lands that may contain wilderness characteristics, within 100 separate area polygons. Fifty of the identified polygon areas were contiguous to existing wilderness, with the remaining as stand-alone areas or oriented closely to but not contiguous to existing areas.

The Interdisciplinary Team recorded all lands included in the inventory on a series of maps of the planning area, titled and referred throughout this document as the Inventory Map(s). As per FSH 1909.12 Chapter 70, the Team identified the following lands:

- Existing designated wilderness and primitive areas;
- Congressionally designated wilderness study areas, and any wilderness proposals pending before Congress. Indicate relevant statutory dates, if any;
- Areas identified in the Forest Service Roadless Area Conservation Final Environmental Impact Statement (Volume 2, November 2000), or in a Forest Service State-specific roadless rule, or identified as undeveloped or for primitive nonmotorized management in the current land management plan;
- National Forest System lands statutorily designated for management for nonwilderness purposes. Indicate effective dates, if any;
- Other areas and features that the forest supervisor determined would be useful to show on the map to facilitate effective and transparent stakeholder participation and input on this topic;
- Area boundary polygons of all Inventoried areas, clearly labeled with the Identification Number and Common Name Identifier that was assigned to the area by the ID Team;
- Any Federal, State, county, municipal, or Forest System Roads level 2-5 that are judged by the IDT to be of use to clarify location and orient map users;
- Any additional improvements (substantially noticeable or not), features or locations that are judged as being of value to clarifying map locations and the results of the inventory by the ID Team.
- Each copy of the map or series of maps displayed the following statement in a prominent and easily read font and location:
- “Lands identified on this inventory map do not imply designation or convey or require a particular kind of management, and inclusion or removal of any of these lands will continue to

be open to consideration throughout the process, which continues until the forest supervisor signs the Record of Decision for the Forest Plan EIS.”

Stakeholders were able to view the final inventoried areas using the interactive web map called [StoryMap](#). There were also detailed final inventory maps (in .pdf format) for each District available below in digital form and maps were also made available in hardcopy form upon request. The following map displays the final inventory map of the entire Gila National Forest.

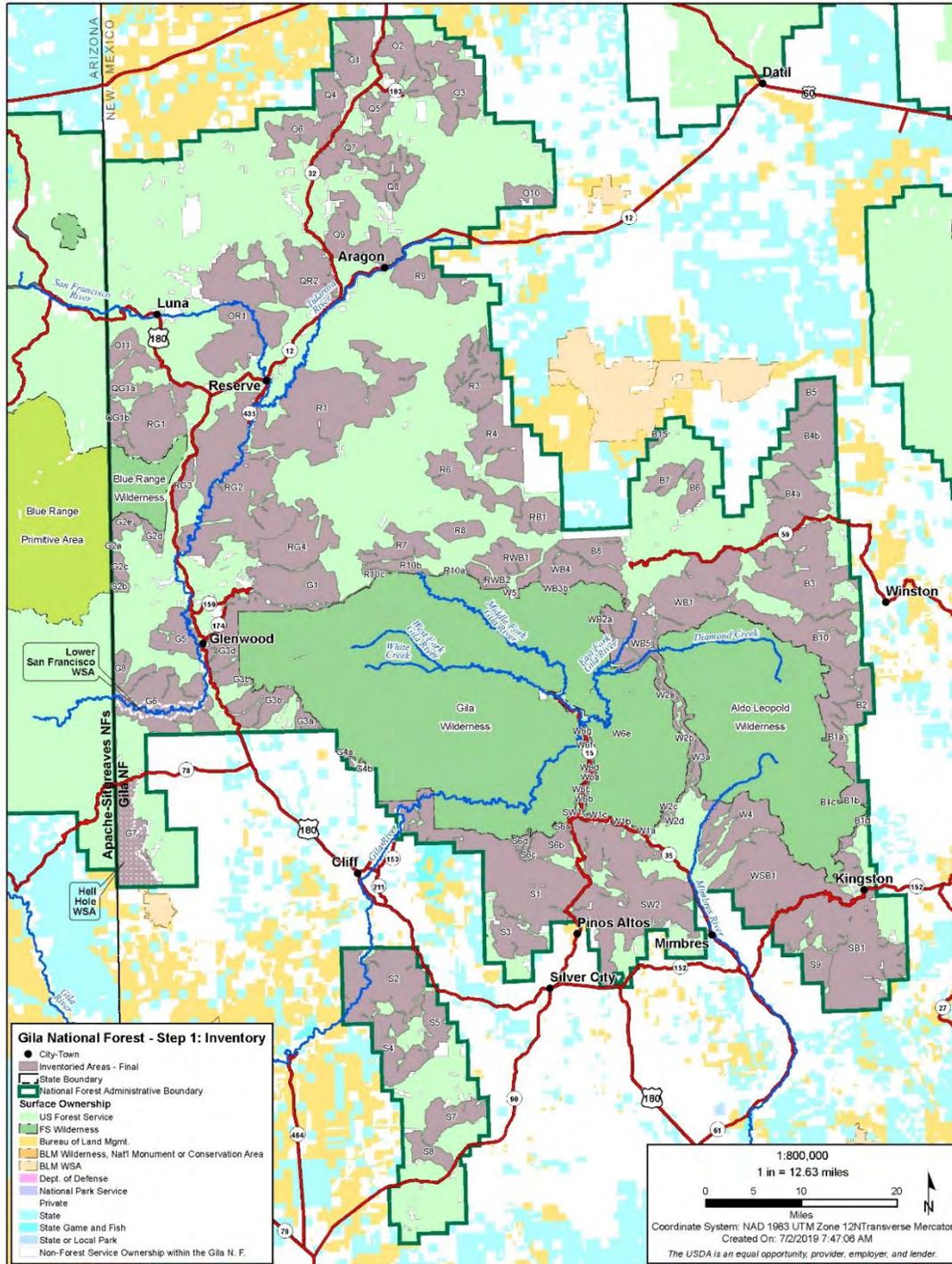


Figure 1. Gila National Forest – Step 1: Inventory

Step Two - Evaluation

The next step following the inventory was to evaluate each area identified by the inventory for the presence and ranking of wilderness characteristics they may possess. A separate process paper was developed for describing the Evaluation step, and was submitted in DRAFT form ([link](#)) for a 30-day public review and comment period prior to being finalized and implemented.

The Evaluation of wilderness characteristics was conducted according to criteria developed from direction within the Wilderness Act of 1964 and Forest Service Planning Handbook FSH 1909.12, Chapter 70, Section 72.1:

- Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable (apparent naturalness);
- Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation. The word “or” means that an area only has to possess one or the other. The area does not have to possess outstanding opportunities for both elements, nor does it need to have outstanding opportunities on every acre;
- Evaluate how an area of less than 5,000 acres is of sufficient size to make its preservation and use in an unimpaired condition practicable;
- Evaluate the degree to which an area may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. These values are not required in an area to be present, but their presence should be identified and evaluated where they exist;
- Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

As per handbook direction (FSH 1909.12 70.72.0) granting the forest supervisor the discretion to do so, certain areas were also either divided or consolidated, and in some instances grouped together as a common area for the purpose of evaluation, and the scope of the evaluation was in some cases varied based on specific characteristics of each area or portions of the area. Any such actions taken by the ID Team with forest supervisor concurrence are detailed within the Evaluation process documentation.

An Evaluation Report was developed to document the results of Step two: Evaluation of the Inventoried areas for wilderness characteristics. This report was intended to be used in conjunction with the Evaluation Maps that may be found on the Inventory and Evaluation of Potential Wilderness Characteristics website ([link](#)). The lands shown on all maps and described in the report do not imply any form of designation or convey or require a particular kind of management. The following are the steps that were completed for development of the DRAFT Evaluation Report:

1. The draft Evaluation Process Document ([link](#)) was released for public review and comment.

This allowed stakeholders to provide input on and become familiar with the process used to evaluate the wilderness characteristics of the lands that were earlier identified in the Inventory. The draft evaluation process paper was adjusted based on consideration of stakeholder feedback before being finalized. The final version of the Evaluation Process Paper was later made available in both [english](#) and [en español](#).

2. Dissimilar Portions of Areas Were Divided, and Similar Areas Grouped Together for Evaluation

The forest supervisor exercised the discretion afforded to the responsible official by Planning Handbook direction, and divided some areas, or consolidated others identified in the inventory into grouped areas for the purpose of evaluation, and varied the scope of the evaluation based on the specific characteristics of each area or portions of an area.

Certain areas, such as those in relatively close proximity to each other, being less than 5,000 acres size individually, similar in characteristics, and located contiguous to the same existing wilderness or similarly managed designated area, were grouped and evaluated together for wilderness characteristics.

Other Inventoried areas were separated for individual evaluations due to a significant disparity in wilderness characteristics between them. The forest supervisor exercised the discretion afforded by Planning Handbook direction to determine that dissimilar parts of individual inventoried areas may be divided and evaluated on their own merits if when considered separately, they met the criteria for being included in the Inventory.

The forest supervisor also exercised the discretion afforded the responsible official by Planning Handbook direction to exclude from the evaluation some portions of overall areas that were determined to not possess wilderness characteristics. If the remainder of the area still met the Inventory criteria, then it was evaluated separately and based upon its own merit.

3. Evaluation Process of Lands Inventoried for Potential Wilderness Characteristics:

The ID Team (which included personnel from ranger districts) conducted an evaluation of the inventoried areas that received subsequent internal and public review and feedback to rank the level of wilderness characteristics they possess according to four consistent criteria, and on a case-by-case basis, sometimes a fifth criteria when it was determined to exist within a particular area by the ID team:

- 1. Sufficient Size to be Practicable to Manage as Wilderness (if less than 5,000 acres size);**
- 2. Manageability to Protect Wilderness Characteristics (factors other than size);**
- 3. Apparent Naturalness;** and
- 4. Opportunities for Solitude or Primitive and Unconfined Recreation;**
- 5. Other Features of Value** is not mandated to be present for an area to have wilderness characteristics, and is evaluated only where it has been determined to occur.

These criteria, also referred to throughout this document as “wilderness characteristics” are derived from the definition of Wilderness provided in the Wilderness Act of 1964, and are applied to the process by direction of the Forest Service Planning Handbook 1909.12 Chapter 70.

Each criterion was evaluated systematically and in the order they are described in the evaluation process paper. If an area received a rating of “NONE” for either of the first two criteria, the evaluation did not continue for that area. The evaluated area was instead given a summary score of NONE for the level of wilderness characteristics that it possesses, and was removed from any further consideration in the process (unless the forest supervisor exercises the authority granted by policy to do otherwise).

Evaluation Step 1: Determination of Sufficient Size to be Practicable to Manage as Wilderness

The ID Team determined and documented the rationale for inclusion in the evaluation of any inventoried areas that are less than 5,000 acres in size, but were carried forward due to it being of a sufficient size to make its preservation and use in an unimpaired condition practicable.

All inventoried areas that were greater than 5,000 acres in size, and inventoried areas that are less than 5,000 acres, but are included by Handbook direction due to being contiguous to existing wilderness, primitive areas, administratively recommended wilderness, or wilderness inventory of other Federal ownership, were automatically carried forward to evaluation Step 2.

If any area was determined to be of NOT SUFFICIENT SIZE to be practicable to manage as wilderness, the evaluation was discontinued for that area, the reasoning for the determination was documented in the Evaluation Report, and the area was assigned an overall ranking of NONE for possessing wilderness characteristics.

If the area was determined to be of SUFFICIENT SIZE to be practicable to manage as wilderness, it continued on to be evaluated for the next criterion of the evaluation.

General Guidelines that were used to determine if an area was NOT MANAGEABLE as wilderness at less than 5,000 acres included, but were not necessarily limited to:

- The area is less than 5,000 acres in size and is not contiguous to any existing wilderness, primitive areas, administratively recommended wilderness, or wilderness inventory of other Federal ownership, and one or more of the following apply:
 - ◆ The existing terrain, bodies of water, vegetation cover, or geographic location do not allow for manageable wilderness boundaries or do not make preservation of wilderness characteristics practicable;
 - ◆ And/or surrounding or inholding areas that are in non-Federal ownership or are managed for uses that would have significant negative effects on the wilderness characteristics of the area due to its relative size;
 - ◆ And/or there are some other existing laws, legally established uses or valid existing rights that would make the area impracticable to manage to protect and preserve its wilderness characteristics

General Guidelines that that were used to determine if an area was MANAGEABLE as wilderness at less than 5,000 acres included but were not necessarily limited to:

- The area is less than 5,000 acres in size but is contiguous to existing wilderness, primitive areas, administratively recommended wilderness, or wilderness inventory of other Federal ownership.
 - ◆ Or, the area is less than 5,000 acres in size, but is judged by the IDT to be of sufficient size to make its preservation and use in an unimpaired condition practicable because of (but not limited to) one or more of the following factors:
 - ◆ Some combination of terrain, bodies of water, vegetation cover, and geographic location in or surrounding the area allow for manageable wilderness boundaries and make preservation of wilderness characteristics practicable;
 - ◆ There are no inholdings or surrounding areas that are not in non-Federal ownership and/or that are managed currently (or are likely to be managed in the foreseeable future) for uses

that would be likely to negatively affect wilderness characteristics due to the relative size of the area;

- ◆ And/or there are no other existing laws, legally established uses or valid existing rights that are likely to negatively affect manageability of the area to protect and enhance wilderness characteristics.

Evaluation Step 2: Determine Manageability to Protect Wilderness Characteristics:

The purpose of this step was to determine if an inventoried area may be managed to preserve its wilderness characteristics, considering such factors as (but not limited to):

- Shape and configuration of the area;
- Legally established rights or uses within the area;
- Specific Federal or State laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics;
- The presence and amount of non-Federal land in the area; and
- Management of adjacent lands.

All inventoried areas that were determined to be **MANAGEABLE** to protect wilderness characteristics were carried forward for consideration of the next criterion.

If the area was determined to be **NOT MANAGEABLE** to protect wilderness characteristics, the evaluation was discontinued for that area, the rationale was documented here in this Evaluation Report, and the area was assigned a ranking of **NONE** for possessing wilderness characteristics.

General Guidelines that were used to determine if an area is NOT MANAGEABLE to protect wilderness characteristics included but were not necessarily limited to:

- The shape, location, and/or configuration of the area preclude protection of wilderness characteristics
- A substantial portion of the area is too narrow in width for roads or other development or uses beyond the boundaries to be substantially unnoticeable;
- Modification of area boundaries is not possible or would not sufficiently address the presence of substantially noticeable road, development or installations,
- There are non-Federal inholdings within the area possessing high levels of development or uses that would prohibit protection of wilderness characteristics throughout the area;
- There are existing legally established uses or valid existing rights that would prevent management of the area to protect wilderness characteristics.

General Guidelines that were used to determine if an area is MANAGEABLE to protect wilderness characteristics included but were not necessarily limited to:

- The shape and/or configuration of the area are not an impediment to protection of wilderness characteristics;
- A majority of the area is wide enough for roads or other development or uses beyond the boundaries to be substantially unnoticeable;
- Area boundaries exclude substantially noticeable roads, developments or installations;

- The area is contiguous with an existing wilderness, primitive areas, administratively recommended wilderness, or wilderness inventory of other Federal ownership;
- There are no non-Federal inholdings within the area containing levels of development or uses that effect the ability to manage wilderness characteristics throughout the area;
- There are no existing legally established uses or valid existing rights that would affect the manageability of the area to protect wilderness characteristics.

Evaluation Step 3: Evaluate the Apparent Naturalness of the Area:

For each identified area not eliminated by the first two criteria, the ID team evaluated how much the area overall appears to be affected primarily by the forces of nature, with the imprints of modern human activity substantially unnoticeable (apparent naturalness). The standard for this criterion is how natural the area would appear to an average, reasonable person.

The ID Team assigned a ranking of NONE, LOW, MODERATE, HIGH, or OUTSTANDING, accompanied by a detailed narrative rationale for the rank it received.

Each ranking level also has a point range, and a point score within that range was assigned to accompany the ranking. This selected point within the range was based on the gradient where the area was judged to fall within that ranking – for example: If an area was ranked as LOW for apparent naturalness, but was very close to deserving a MODERATE, then it would be appropriate to assign it the highest point in the range for a rank of LOW (2). See table 5 for the matrix of rankings and point range for each criterion.

The overall ranking for Apparent Naturalness consisted of 3 individual factors identified by the Forest Service Planning Handbook Chapter 70, with each evaluated and ranked separately. The average points of these factors are used to determine the overall points and rank of Apparent Naturalness for each area (see table 5 for more detail). These 3 individual factors of Apparent Naturalness are:

- a. The composition of plant and animal communities This was a determination if plant and animal communities appear substantially unnatural (for example, past management activities have created a plantation style forest with trees of a uniform species, age, and planted in rows);
- b. The extent to which the area appears to reflect ecological conditions that would normally be associated with a lack of human intervention, and;
- c. The extent to which improvements included in the area represented a departure from apparent naturalness.

General Guidelines that were used to determine if an area ranked OUTSTANDING (8- 10 points range) for Apparent Naturalness included but were not necessarily limited to:

- The composition of plant and animal communities appears natural throughout the area, and does not appear to be manipulated by humans;
- There is non-existent, or nearly non-existent, evidence of any type of modern human land management activity throughout the area;
- Any improvements are not substantially noticeable, do not detract from the apparent naturalness of the area, are distributed widely, are difficult to locate, do not appear modern, and/or they contribute significantly to the historical character and cultural context of the area

General Guidelines that were used to determine if an area ranked HIGH (7-8 points range) for Apparent Naturalness included but were not necessarily limited to:

- The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area;
- There is only minor evidence of any type of modern human land management activity, and/or it is limited mostly to areas close to the outside boundaries;
- Improvements are not substantially noticeable, are very few in number and rarely encountered, are not concentrated in location, do not appear modern, and/or they contribute to the historical character and cultural context of the area and their appearance detracts very little from apparent naturalness

General Guidelines that were used to determine if an area ranked MODERATE (3-5 points range) for Apparent Naturalness included, but were not necessarily limited to:

- The composition of plant and animal communities appears natural in the majority of the area
- Modern human land management activity is noticeable in some locations;
- Prevalence of improvements is generally low throughout the area, and may be concentrated in some locations, they contribute to a limited extent to the historical character and cultural context of the area, may appear to be fairly modern, and by their presence may impose limitations on the apparent naturalness of the area

General Guidelines that were used to determine if an area ranked LOW (1-2 points range) for Apparent Naturalness that included but were not necessarily limited to:

- Vegetation appears natural in some locations, but not commonly in the area;
- There is noticeable evidence of modern human land management activity, and the area has a high level of modern human-caused disturbance;
- The prevalence of improvements is high throughout the area, are often concentrated and contribute very little to the historical character and cultural context of the area; they may appear somewhat modern, some improvements may be substantially noticeable and detract significantly from apparent naturalness in some locations

General Guidelines that were used to determine if an area ranked NONE for Apparent Naturalness included but were not necessarily limited to:

- The composition of plant and animal communities represents a visible departure from apparent naturalness in the majority of the area
- There is widespread and obvious evidence of modern human land management activity;
- Prevalence of improvements is very high and widespread across the area, there are very few locations where improvements are unseen, they appear to be modern, are not historic, nor do they contribute to the cultural context of the area; a significant number of improvements are substantially noticeable and detract considerably from apparent naturalness throughout the area

Evaluation Step 4: Evaluate the Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation of the Area:

“Solitude” is a subjective experience of feeling alone, remote from civilization, and removed from modern society. Solitude experiences may include seeing few or no other people, having privacy, and freedom from societal constraints and obligations.

“Primitive and unconfined recreation experiences” are non-motorized, non-mechanized, nature-based recreation opportunities of personal challenge, self-discovery and rejuvenation that are free from excessive management restrictions.

The inventoried areas not eliminated by the first two steps of the process, and following their evaluation for apparent naturalness, were next evaluated by the degree to which they possessed outstanding opportunities for solitude or for a primitive and unconfined type of recreation. The word “or” in this particular context means that an area is only required by Planning Handbook direction to possess one or the other. The area does not have to possess outstanding opportunities for both elements of the criterion, nor is it required to have outstanding opportunities for either experience on every acre.

The ID Team evaluated each remaining inventoried area (or portion thereof) following the previous steps for both Solitude and Primitive/Unconfined Recreation, and applied a ranking of NONE, LOW, MODERATE, HIGH, or OUTSTANDING, accompanied by a detailed narrative rationale for the rank.

- Impacts were considered that are pervasive and influence a visitor’s opportunity for solitude within the area. Factors to consider may include topography, presence of screening, distance from impacts, degree of permanent intrusions, and pervasive sights and sounds from outside the area;
- Consideration was given to the opportunity to engage in primitive-type or unconfined recreation activities that lead to a visitor’s ability to enjoy recreation within or feel a part of nature. Examples of primitive-type recreation activities include observing wildlife, hiking, backpacking, horseback riding, fishing, hunting, floating, kayaking, cross-country skiing, camping, and enjoying nature.

General Guidelines Applied to Rankings for Opportunities for Solitude:

General Guidelines that were used to determine if an area ranked OUTSTANDING (8-10 points) for Opportunities for Solitude included but were not necessarily limited to:

- It is easy to attain a feeling of being alone or remote from civilization throughout the area;
- Encounters with other visitors are very rare to non-existent;
- Encounters with groups of visitors together are rare to non-existent
- Sights and sounds of human activities are rare to non-existent.

General Guidelines that were used to determine if an area ranked HIGH (6-7 points) for Opportunities for Solitude included but were not necessarily limited to:

- In a majority of the area it is possible to attain feeling of being alone or remote from civilization;
- Encounters with other visitors are uncommon but may occasionally occur;
- Encounters with groups of visitors together are uncommon but may occasionally occur;
- Sights and sounds of human activities are possible, but infrequently encountered.

General Guidelines that were used to determine if an area ranked MODERATE (3-5 points) for Opportunities for Solitude included but were not necessarily limited to:

- Feeling of being alone is possible, but may require some effort to attain;

- Encounters with other visitors are likely in popular locations, but are not unavoidable throughout the entire area;
- Occasional encounters with large groups visitors are to be expected in popular locations but are not unavoidable throughout the entire area;
- Sights and sounds of civilization and/or human activity are likely to be encountered.

General Guidelines that were used to determine if an area ranked LOW (1-2 points) for Opportunities for Solitude included but were not necessarily limited to:

- Little opportunity of feeling alone;
- Encounters with other visitors are common, and may encounter large-numbered groups;
- Large groups of other visitors are commonly encountered;
- Sights and sounds of civilization and/or human activities are difficult to avoid.

General Guidelines that were used to determine if an area ranked NONE for Opportunities for Solitude included, but were not necessarily limited to:

- Opportunity of feeling alone are almost non-existent for a majority of the area;
- Encounters with other visitors are common, frequent, and difficult to avoid;
- Human activities or presence are prevalent throughout the area.

General Guidelines Applied to Rankings for Opportunities for Primitive and Unconfined Recreation:

General Guidelines that were used to determine if an area ranked OUTSTANDING (8-10) for Opportunities for Primitive and Unconfined Recreation included but were not necessarily limited to:

- The setting provides opportunity for a very broad range of recreation types at all skill levels;
- There are no limitations to visitor use by regulations or restrictions to entry;
- Few to none limitations to visitor use are required protect wilderness characteristics.

General Guidelines that were used to determine if an area ranked HIGH (6-7) Opportunities for Primitive and Unconfined Recreation included but were not necessarily limited to:

- The setting provides opportunity for a range of recreation types and skill levels;
- There are very few limitations to visitor use by regulations or restrictions to entry;
- Some additional limitations to visitor use are required to protect wilderness characteristics.

General Guidelines that were used to determine if an area ranked MODERATE (3-5) for Opportunities for Primitive and Unconfined Recreation included but were not necessarily limited to:

- The setting provides opportunity for a moderate range of activities and skill levels;
- There is a moderate level of limitations to visitor use by regulations and restrictions to entry;
- Some additional limitations to visitor use are required to protect wilderness characteristics.

General Guidelines that were used to determine if an area ranked LOW (1-2) for Opportunities for Primitive and Unconfined Recreation included but were not necessarily limited to:

- Setting provides few opportunities to engage in primitive and unconfined recreation;

- There are significant limitations to visitor use by regulations and restrictions to entry;
- Significant additional limitations to visitor use are required to protect wilderness characteristics, such as a permit system and areas closed to camping.

General Guidelines that were used to determine if an area ranked NONE for Opportunities for Primitive and Unconfined Recreation included but were not necessarily limited to:

- Opportunities to engage in primitive and unconfined recreation are very poor or nonexistent;
- There are strict limitations to visitor use by regulations and restrictions to entry;
- Any limits to visitor use are likely to be inadequate to protect wilderness characteristics.

Evaluation Step 5: Evaluate Other Features of Value – Considered only where they exist:

The ID Team evaluated the degree to which each inventoried area possesses ecological, geological, or other features of scientific, educational, scenic, or historical value. These values are not required to be present in an area for the area to be recommended for inclusion in the National Wilderness Preservation System. However, in keeping with Forest Service Planning Handbook direction, where they do occur their presence was identified and evaluated with detailed documentation of why the ID Team considers them of value.

The presence of Other Features of Value was assigned points for its ranking that were included in the tally of the total score for the overall area as a “bonus” to raise the Overall Wilderness Characteristics summary score.

- Presence of rare plant or animal communities or rare ecosystems. “Rareness” can be determined locally, regionally, nationally, or within the system of protected designations;
- Presence of outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features;
- Presence of historic and cultural resource sites. (Confidentiality requirements with respect to cultural resource sites must be respected (25 U.S.C 3056));
- Presence of research natural areas;
- Presence of high-quality water resources or important watershed features.

Areas that do not possess other features of value were not evaluated and ranked for this criterion, however, the absence of this characteristic did not have any negative effect to the ratings of evaluated areas.

It is important to note that there are a great many historic and prehistoric heritage resources located across the Gila National Forest. Nationally significant heritage resources exist in each of the areas being evaluated; however, they only received mention and were assigned a value where they have been documented and are of an exceptional and unique nature as compared to what may be found elsewhere throughout the forest.

The ID Team applied a ranking of LOW (1 point bonus), MODERATE (2 point bonus), HIGH (3 point bonus), or OUTSTANDING (4 point bonus), accompanied by a narrative rationale for the rank assigned by the ID Team.

Evaluation Step 6: Each Area Was Assigned an Overall Wilderness Characteristics Score

The inventoried areas were assigned an overall evaluation ranking of NONE, LOW, MODERATE, MODERATE/HIGH, HIGH, or OUTSTANDING for Presence of Wilderness Characteristics. To calculate the Overall Summary Score, the individual criteria point scores were tallied for Apparent Naturalness from Step 3, Opportunities for Solitude or Primitive and Unconfined Recreation criteria from Step 4, and where determined to exist, Step 5, Other Features of Value.

For more information on determining the Overall Wilderness Characteristics Summary Score, refer to table 5.

Evaluation Step 7: Documentation of the Evaluation for Public and Stakeholder Review:

The ID Team first completed a DRAFT Evaluation Report ([link](#)) that was released for public and stakeholder review and feedback. A “Guide to Commenting” document was also provided ([link](#)).

- Most individual polygons that were assigned an identification number and common name were separately evaluated, however in many cases smaller areas in close proximity or adjacent to the same larger contiguous areas were evaluated together
- The draft Evaluation Report was released for public review and feedback period of 56 days duration due to requests from stakeholders for extensions due to the length of the report.
- After considering stakeholder feedback and making appropriate updates, this FINAL Evaluation Report was released for use in Step 3 – Analysis, as part of the analysis of alternatives for the plan revision DEIS and eventual FEIS and ROD.

The ID Team documented the evaluation process along with any additional important relevant and contextual information within the Evaluation Report.

Stakeholders were able to view and comment on the draft evaluated areas using the interactive web map called [StoryMap](#). There were also detailed draft evaluation maps (in .pdf format) for each District available below in digital form and maps were also made available in hardcopy form upon request. The following map provides the final results of the evaluation for the entire Gila National Forest, followed by a tabular summary.

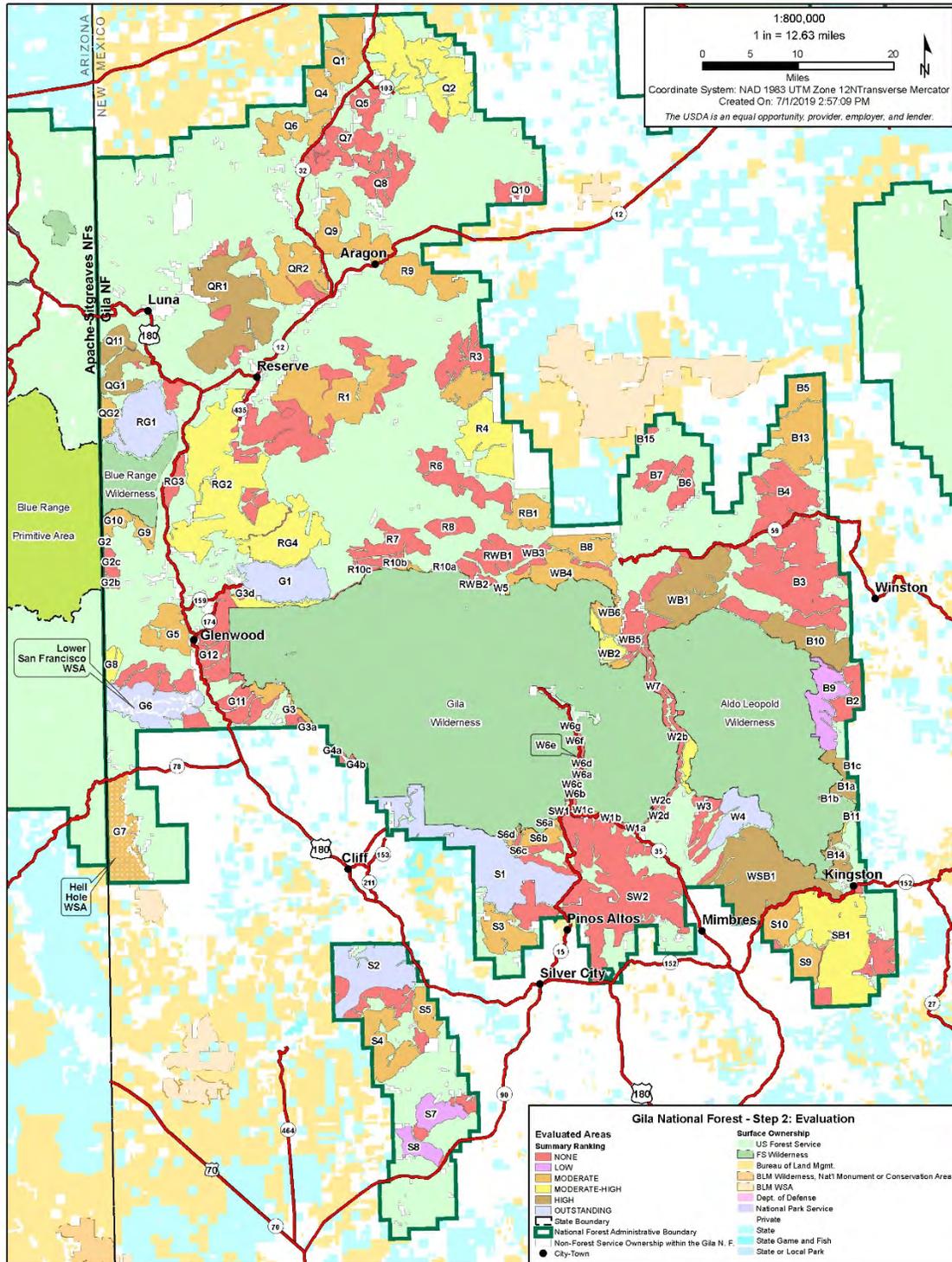


Figure 2. Gila National Forest – Step 2: Evaluation

Table 6 displays the results from the evaluation step.

Table 5. Matrix for ranking of wilderness characteristics

Process Description	Wilderness Characteristic	Ranking	Range of Points
Step 1 - Determination if areas less than 5,000 acres are practicable to manage as Wilderness	Size Practicability (If < 5,000 acres)	SUFFICIENT SIZE	Continue Evaluation
		NOT SUFFICIENT SIZE	Cease Evaluation
Step 2 - Evaluate if an inventoried area may be managed to preserve wilderness characteristics	Manageability to protect wilderness characteristics	MANAGEABLE	Continue evaluation
		NOT MANAGEABLE	Cease Evaluation
Step 3 - Evaluate degree the area appears to be affected primarily by the forces of nature, with modern human activity substantially unnoticeable. The standard is how natural the area would appear to an average reasonable person. Determination of Apparent Naturalness Overall Score	Apparent Naturalness – Consists of 3 Factors:		
	a) Plant and animal communities appear substantially unnatural	NONE LOW MODERATE HIGH OUTSTANDING	0 1-2 3-5 6-7 8-10
	b) Area appears to reflect ecological conditions associated without human intervention	NONE LOW MODERATE HIGH OUTSTANDING	0 1-2 3-5 6-7 8-10
	c) Extent to which improvements indicate departure from apparent naturalness	NONE LOW MODERATE HIGH OUTSTANDING	0 1-2 3-5 6-7 8-10
	Apparent Naturalness score is calculated as the average of the sum of [a + b + c]	NONE LOW MODERATE HIGH OUTSTANDING	0 1-2 3-5 6-7 8-10

Process Description	Wilderness Characteristic	Ranking	Range of Points
<p>Step 4 - The area has outstanding opportunities for solitude or primitive and unconfined recreation. Area is not required to have outstanding opportunities for either on every acre. Use highest ranked and point scored of the two – if equally ranked, only count ranking once, but document both are available equally.</p>	<p>Opportunities for Solitude</p> <p style="text-align: center;">-OR-</p>	<p>NONE LOW MODERATE HIGH OUTSTANDING</p>	<p>0 1-2 3-5 6-7 8-10</p>
	<p>Primitive and Unconfined Recreation</p>	<p>NONE LOW MODERATE HIGH OUTSTANDING</p>	<p>0 1-2 3-5 6-7 8-10</p>
<p>Step 5 - Evaluate degree to which the area possesses ecological, geological, scientific, educational, scenic, or historical value. Identified and evaluated only where they occur.</p>	<p>Other Features of Value</p>	<p>NONE LOW MODERATE HIGH OUTSTANDING</p>	<p>0 1-2 3-5 6-7 8-10</p>
<p>Step 6 -Overall area score is determined by adding the scores for steps 3 and 4, with the score from Step 5 (Where it exists) added to the overall score as bonus points</p>	<p>Overall Area Ranking of Wilderness Characteristics</p>	<p>Overall Ranking</p>	<p>Total Points</p>
		<p>NONE LOW MODERATE MODERATE/HIGH HIGH OUTSTANDING</p>	<p>0 1 - 5.9 6 - 11.9 12 - 13.9 14 -15.9 16 +</p>

Table 6. Results of evaluation for wilderness characteristics

Y = YES; N = NONE/NO; N/A = NOT APPLICABLE; L = LOW; M = MODERATE; MH = MODERATE/HIGH; H = HIGH; OS = OUTSTANDING

Evaluated Area	Inventoried Area Acres	Practicable Size <5,000 acres	Manageability	Apparent Naturalness	Solitude	Primitive Unconfined Rec	Other Features of Value	Overall Ranking Score	Overall Ranking
Quemado District Evaluated Areas									
Q1 - Largo	15,288	N/A	Y	M	H	M	L	10.3	M
Q2 –The Hub	36,344	N/A	Y	H	H	H	L/M	13.5	MH
Q4 – Chavez Lake	7,237	N/A	Y	M	H	M	N	10.3	M
Q5 – Agua Fria:	5,691	N/A	N	N/A	N/A	N/A	N/A	0	N
Q6 – Fox Mountain	12,956	N/A	Y	M	H	H	L	11.6	M
Q7 – East Gallo	13,330	N/A	N	N/A	N/A	N/A	N/A	0	N
Q8 – Bull Camp	14,186	N/A	N	N/A	N/A	N/A	N/A	0	N
Q9 – Apache Mountain	17,972	N/A	Y	M	H	H	N	10.3	M
Q10 – East Boundary	6,333	N/A	N	N/A	N/A	N/A	N/A	0	N
Q11 – Mother Hubbard	5,728	N/A	Y	M	OS	H	L	15.7	H
Shared Quemado and Glenwood Districts									
QG1 – Nolan North	8,685	N/A	Y	M	OS	H	L	15.7	H
QG2 – Nolan South	4,404	Y	Y	M	OS	H	N	11.7	M
Shared Quemado and Reserve Districts									
QR1 – Upper Frisco Box	41,047	N/A	Y	M	H	H	H	14.7	H
QR2 – Upper Frisco Box East	18,810	N/A	Y	M	M	H	N	9	M
Reserve District Evaluated Areas									
R1 – Eagle Peak	31,993	N/A	Y	M	M	H	L	11.7	M
R3 – Moraga Canyon	8,527	N/A	Y	M	M	M	L	10.3	M
R4 – O-Bar-O Mountain	20,010	N/A	Y	M	H	M	L	12	MH
R6 – Elk Mountains	15,526	N/A	N	N/A	N/A	N/A	N/A	0	N
R7 – Negrito	10,461	N/A	N	N/A	N/A	N/A	N/A	0	N
R8 – T-Bar Ridge	5,270	N/A	N	N/A	N/A	N/A	N/A	0	N
R9 – Wagon Tongue	14,628	N/A	Y	M	H	M	N	11.7	M
R10a, R10b, - Gila Additions North Reserve	536 657	Y	Y	M	M	M	N	9	M
R10c - Gila Additions North Reserve	1,451	Y	N	N/A	N/A	N/A	N/A	0	N
Shared Reserve and Black Districts									
RB1 – East Elk Mountain	9,064	N/A	Y	M	M	M	N	10	M

Evaluated Area	Inventoried Area Acres	Practicable Size <5,000 acres	Manageability	Apparent Naturalness	Solitude	Primitive Unconfined Rec	Other Features of Value	Overall Ranking Score	Overall Ranking
Shared Reserve, Wilderness, and Black Districts									
RWB1 – Canyon Creek	10,282	N/A	N	N/A	N/A	N/A	N/A	0	N
RWB2 – Gila Addition North Central	3,392	Y	N	N/A	N/A	N/A	N/A	0	N
Shared Reserve and Glenwood Districts									
RG1 – Aspen Mountain	22,089	N/A	Y	H	H	H	M	16	OS
RG2 – Devil's Creek	61,067	N/A	Y	M	H	H	M	13	MH
RG3 – Brushy Canyon	3,977	N	N	N/A	N/A	N/A	N/A	0	N
RG4 – North Mogollon Mountains	21,591	N/A	Y	M	H	H	N	12	MH
Glenwood District Evaluated Areas									
G1 – Mineral Creek	20,525	N/A	Y	OS	OS	OS	OS	23.3	OS
G2 – Blue Primitive Addition	315	Y	N	N	N	N	N	0	N
G2b and G2c – Blue Range South	1,321 2,676	Y	N	N/A	N/A	N/A	N/A	0	N
G3 – Gila Rain Creek Addition	1,298	Y	Y	M	M	M	N	10.3	M
G3c – Gila Addition Northwest	20	Y	N	N/A	N/A	N/A	N/A	0	N
G4a and G4b – Gila Additions West	776 158	Y	N	N/A	N/A	N/A	N/A	0	N
G5 – Park Mountain	11,316	N/A	Y	M	M	M	N	10.7	M
G6 – Lower San Francisco	21,196	N/A	Y	H	H	OS	OS	18.3	OS
G7 – Hell Hole	20,535	N/A	Y	M	H	M	L	11	M
G8 – Smoothing Iron Mesa	3,588	Y	Y	M	H	M	L	12.3	MH
G9 – Blue Range SE Addition	3,040	Y	Y	M	M	L	N	6	M
G10 – Blue Range SW Addition	3,709	Y	Y	M	M	L	N	8	M
G11 – Gila Dry Creeks Addition	3,129	N/A	Y	M	H	H	N	10.3	M
G12 – Gila Whitewater Addition	3,463	Y	Y	H	H	H	N	13.7	MH
Black Range District Evaluated Areas									
B1a, B1b, B1c, – Aldo Leopold Seco Additions	5741 265 78	Y	Y	H	H	H	L	14.3	H
B2– Brushy Mountain	7,751	N/A	N	N/A	N/A	N/A	N/A	0	N
B3– Big Dry Creek	39,126	N/A	N	N/A	N/A	N/A	N/A	0	N
B4 – Wahoo South	19,769	N/A	N	N/A	N/A	N/A	N/A	0	N
B5 – Stone Creek	8,384	N/A	Y	M	H	M	N	11.3	M
B6 – Sand Canyon	6,136	N/A	N	N/A	N/A	N/A	N/A	0	N
B7 – Indian Peaks	5,516	N/A	N	N/A	N/A	N/A	N/A	0	N
B8 – Beaverhead	9,849	N/A	Y	M	M	M	L	9	M
B9 – Aldo Leopold Addition East	13,558	N/A	Y	L	L	M	N	5.7	L
B10 – Aldo Leopold Addition Northeast	15,909	N/A	Y	H	H	H	L	14.3	H

Evaluated Area	Inventoried Area Acres	Practicable Size <5,000 acres	Manageability	Apparent Naturalness	Solitude	Primitive Unconfined Rec	Other Features of Value	Overall Ranking Score	Overall Ranking
B11 – Aldo Leopold Addition Southeast	1,242	Y	Y	M	H	H	L	12.7	MH
B13 – Wahoo North	20,139	N/A	Y	M	M	H	N	11.3	M
B14 – Aldo Leopold Addition Carbonate Creek	5,380	N/A	Y	H	H	OS	N	14	H
B15 – Continental Divide WSA Addition	1,405	Y	N	N/A	N/A	N/A	N/A	0	N
Silver City and Black Range Shared District									
SB1 – Sawyer Peak	41,063	N/A	Y	M	OS	H	N	13.7	MH
Silver City District Evaluated Areas									
S1 – Mogollon Box/Tadpole Ridge	48,067	N/A	Y	H	OS	H	H	17	OS
S2 – Gila Middle Box	25,335	N/A	Y	M	M	H	OS	16	OS
S3 - Bear Mountain	11,124	N/A	Y	M	M	M	L	9	M
S4 – North Burros	15,786	N/A	Y	M	M	M	L	9	M
S5 – Saddle Rock	6,734	N/A	Y	M	L	M	L	9.8	M
S6a, S6b, S6c, and S6d – Gila Additions Southwest	526 4,643 961 1,040	Y	Y	M	M	M	N	9	M
S7 – Burro Peak	7,522	N/A	Y	M	L	L	L	6	M
S8 – Knight Peak	5,618	N/A	Y	M	L	L	L	6.3	M
S9 – Royal John	6,915	N/A	Y	M	H	M	N	11.7	M
S10 – Lower Gallinas Canyon	9,048	N/A	Y	M	M	M	N	8.7	M
Shared Silver City and Wilderness District									
SW1 – Gila Addition Sapillo	264	Y	Y	H	H	M	N	12	MH
SW2 – Signal Peak	66,486	N/A	N	N/A	N/A	N/A	N/A	0	N
Wilderness District Evaluated Areas									
W1a and W1b – Gila Additions Lake Roberts	664 323	Y	N	N/A	N/A	N/A	N/A	0	N
W1c – Gila Addition Lake Roberts	732	Y	Y	H	L	M	N	10	M
W2b, W2c, and W2d – Gila Additions East	2,088 393 455	Y	N	N/A	N/A	N/A	N/A	0	N
W3 – Aldo Leopold Addition West	3,394	N/A	Y	H	H	H	N	12	MH
W4 – Aldo Leopold Addition McKnight Canyon	12,458	N/A	Y	OS	OS	H	N	16.3	OS
W5 – Gila Addition North Central	27	Y	N	N/A	N/A	N/A	N/A	0	N

Evaluated Area	Inventoried Area Acres	Practicable Size <5,000 acres	Manageability	Apparent Naturalness	Solitude	Primitive Unconfined Rec	Other Features of Value	Overall Ranking Score	Overall Ranking
W6a, W6b, W6c, W6d, W6e, W6f, and W6g – Gila Additions Central	2,371 25 689 115 16 178 58	Y	N	N/A	N/A	N/A	N/A	0	N
W7 – Gila Addition East	1,057	Y	Y	H	L	M	L	11	M
Shared Wilderness and Black Range Districts									
WB1 – Taylor Creek:	27,335	N/A	Y	M	H	H	H	15	H
WB2 – Gila Addition East:	4,437	Y	Y	M	H	M	M	14	H
WB3 – Gila Addition North	39	Y	N	N/A	N/A	N/A	N/A	0	N
WB4 – Gila Addition Northeast:	14,153	N/A	Y	M	M	H	L	10.7	M
WB5 – North Star	7,148	N/A	N	N/A	N/A	N/A	N/A	0	N
WB6 – Gila Addition Beaver Creek	4,975	Y	Y	M	M	M	L	11	M
Shared Wilderness Silver City and Black Range Districts									
WSB1 – Rabb Park	43,998	N/A	Y	H	H	OS	L	15	H

Step Three: Analysis

With completion of the Evaluation step, the evaluations were then used to inform the forest supervisor's selection of which areas, or modified areas, were to be analyzed in each of the forest plan revision Environmental Impact Statement (EIS) alternatives. Stakeholder comments were also an important consideration for the analysis, modification, and inclusion of the areas in the proposed action prior to release of the DRAFT plan revision EIS. There was a comment opportunity where stakeholders could provide site-specific information for consideration ahead of and during the analysis phase of the process.

Any evaluated area that is not analyzed in any of the alternatives and documentation of justification why is documented below.

Q7 – East Gallo: It was determined the narrow, odd shape, cherry stems accessing deeply into the area, nearly bisecting it, the entire western end of the area being dominated by a motorized trail system, and lack of space for a sizable core area all combine to make the area not manageable to protect wilderness characteristics.

Q8 – Bull Camp: The area's narrow spaces between boundary intrusions, odd overall shape and configuration, deeply cherry stemmed roads, level 1 roads in the northeastern portion, occurrence of private inholdings located deep inside the area, and lack of uninterrupted core area relative to its size all combine to make the area not manageable to protect wilderness characteristics.

Q10 – East Boundary: The area's odd, cumbersome, and narrow crescent shape, small size, and the presence of private inholdings intruding deep into the core, and an intruding closed, but not decommissioned level 1 road, all combine to make the area unmanageable to protect wilderness characteristics.

R6 – Elk Mountains: The area's narrow, often torturous shape (negatively contributed to by several cherrystems), moderate total acreage, and adjacent roads, the presence of several closed but not decommissioned level 1 roads, and the resulting lack of a core area combine to make the area unmanageable to protect wilderness characteristics.

R7 – Negrito: The area's long, narrow, and odd shape, moderate total acreage, cherry stems and adjacent roads, all combine to make the area lacking a core area large enough to be manageable to protect wilderness characteristics. The entire western part of the area is also heavily dissected by a series of decommissioned level 1 roads.

R8 – T-Bar Ridge: The area's small size, narrow shape, location, terrain, vegetation cover and adjacent roads and developments all combine to make the area lacking a core area large enough and with boundaries manageable to protect wilderness characteristics.

R10c - Gila Additions North Reserve: The area's narrow, odd shape and configuration between open roads combine with unmanageable boundaries to be unmanageable to protect wilderness characteristics.

RWB1 – Canyon Creek: There are multiple issues with the configuration of the area that make it unmanageable to protect wilderness characteristics. There are a number of cherry stem roads, including two that may connect on the ground and together extend nearly 3/4 across the polygon, high development system roads on all boundaries, and it lacks sizable core area where wilderness characteristics could be preserved.

RWB2 – Gila Addition North Central: The shape and configuration of this small area makes it unmanageable to protect wilderness characteristics. There is a large parcel of developed private land dominating the area, as well as several cherry-stemmed roads creating an awkward shaped area with unmanageable boundaries.

RG3 – Brushy Canyon: This area is both less than 5,000 acres and not contiguous to existing wilderness or similar management. During inventory, the steep terrain was considered as possibly making the area practicable to manage as wilderness. However, as part of the first step of the Evaluation it was determined that roads and other developments affect the entire area, making it not being manageable as wilderness at its present size.

G2 – Blue Primitive Addition: Though much of this consists of inventoried roadless area, its small size and configuration would not be manageable to protect wilderness characteristics. The entire 315-acre area is completely enclosed by fences and is mostly surrounded by open roads, having an outsized effect on such a very small area. Its addition would not contribute to the wilderness characteristics of the adjacent primitive area.

G2b and G2c – Blue Range South Additions: These small areas' convoluted and narrowed shapes, their orientation narrowly sandwiched between adjacent roads, lack of manageable boundaries, presence of ML1 closed but not decommissioned roads, and the gentle roadside terrain all combine to make these areas not manageable to protect wilderness characteristics.

G3c – Gila Addition Northwest: This tiny area consists of just 20 acres, and it is oriented in a very narrow space between two open forest roads, and lacks a core area to be able to protect wilderness characteristics. The area would not contribute positively to the wilderness characteristics or the management of wilderness characteristics if it were an addition to the existing adjacent wilderness.

G4a and G4b – Gila Additions West: These very small areas' odd shapes, orientation sandwiched between adjacent roads and private property, and the roadside terrain all combine to make them not manageable to protect wilderness characteristics.

B2– Brushy Mountain: There are multiple issues with the ability to manage the area's boundaries to protect wilderness characteristics, including relatively flat terrain, open vegetation cover, existing mining claims, mining operations on adjacent lands, and issues with access due to extensive private lands adjacent to area boundaries. Also, several closed, but not decommissioned roads extend deeply into the area from the west-northwest to the south, preventing sufficient core area available for protecting wilderness characteristics. All of these factors considered in aggregate contribute to the determination that the area is unmanageable to protect wilderness characteristics.

B3– Big Dry Creek: It was determined that this area was unmanageable to protect wilderness characteristics due to very deep incursions of private property inholdings, cherry stems, unmanageable boundaries, and a lack of core area. Even if boundary adjustments were made, the resulting smaller areas would be isolated from existing wilderness and not manageable to protect wilderness characteristics. Compounding issues with manageability are ML1 roads accessing into much of the area. There may also be issues with mining claims in the area.

B4 – Wahoo South: This area was determined to be unmanageable due to an aggregate of management factors, including unmanageable boundaries (proximity to firewood cutting areas and private property, flatness of terrain), the presence of an extensive network of closed roads, some not decommissioned, and all of these contributing to, and also compounded by, a lack of sizeable core

area due to deeply intruding cherry stems of open forest roads. These were also considered in context to the relative size of the area.

B6 – Sand Canyon: A number of problems cause this area to be unmanageable to protect wilderness characteristics, including its narrow shape relative to its very small size, proximity to private property all along its southeast boundary, the remaining boundary consisting of open roads, a cherry stem incursion deep into the area, and a lack of a core area to protect wilderness characteristics. There is also a closed, decommissioned but still substantially noticeable level 1 road that nearly bisects the area from north to south, contributing to there being insufficient core area available to protect wilderness characteristics.

B7 – Indian Peaks: It was determined that due to the very small size of the area combined with it being bounded on all sides by open roads, having a very deep cherry stem incursion by an open forest road, a closed but not decommissioned ML1 road along the southeast boundary, proximity to private property to the south, and area boundaries unmanageable (due to terrain and vegetation cover) to prevent continued motored incursions, and a lack of sufficient core area to protect wilderness characteristics considered in aggregate make the area unmanageable to protect wilderness characteristics.

B15 – Continental Divide WSA Addition: It was determined that due to its very small size, open terrain, generally unmanageable boundaries, and orientation in proximity to roads, powerlines, and other infrastructure this area is not manageable to protect wilderness characteristics. The area also would not contribute positively to the wilderness characteristics (or to their protection) of the adjacent BLM Wilderness Study Area.

S6c – Gila Addition Southwest: At the evaluation step, the area was determined to have been erroneously included in the Inventory, due to not meeting the criteria for size or adjoining existing wilderness or similarly managed area, and it was excluded from further consideration.

SW2 – Signal Peak: The area is relatively large in overall size, but has numerous and deeply intruded cherry stem roads. The overall shape is very narrow in places, and tortuous and octopus shaped overall, with multiple narrow protrusions and narrow chokepoints throughout. There is a prevalence of private lands inholding within and along the external boundaries, and the area is well-separated from existing wilderness and adjacent or close proximity between residential areas of Silver City, Hanover, Santa Clara, Piños Altos, Cherry Creek, and Lake Roberts. The considerations mentioned above combine to present a “frontcountry” feel or experience rather than a setting of a “primeval” nature. The Cobre Mine is directly adjacent to the south, with the influence of continuous industrial activity dominating the southeastern portion of the area. There is no access into the area through the adjacent mining lands. The northern and western portions of the area are affected by a tortuous shape and configuration compounded by adjacency and proximity to residential areas, deeply intruding roads and extensive inholding private properties. The barriers to manageability of the area to protect wilderness characteristics are pervasive throughout the entirety of the area, and in combination make the area unmanageable to protect wilderness characteristics.

W1a and W1b – Gila Additions Lake Roberts: It was determined that due to these small areas’ configuration, adjacency and close proximity to residentially developed private property, roads, high levels of development, and unmanageable boundaries that these areas are unmanageable to protect wilderness characteristics. Selection of the existing wilderness boundary locations seem likely to have considered existing level 1 road prisms and powerline ROWs within these areas.

W2b, W2c, and W2d – Gila Additions East: It was determined that due to narrow configurations and unmanageable boundaries, these areas are unmanageable to protect wilderness characteristics. In places, these areas are affected by utilities rights-of-way. Existing wilderness boundary locations were likely chosen due to these and other manageability considerations along the road corridor, and addition of these areas would not improve manageability of the existing wilderness, and they are not manageable to protect wilderness characteristics within the areas themselves.

W5 – Gila Addition North Central: Due to its very small size and awkward orientation between a powerline right of way and adjacent private lands, the ID Team determined that this area is not manageable to protect wilderness characteristics.

W6a, W6b, W6c, W6d, W6e, W6f, and W6g – Gila Additions Central: It was determined that due to existing legal rights (state highway and utility rights of way), configuration and proximity to utility and state highway rights of way, private property, and unmanageable boundaries, these very small and narrow areas are not manageable to protect wilderness characteristics. They would also not contribute positively to the protection of wilderness characteristics of the existing, adjacent wilderness

WB3 – Gila Addition North: It was determined that due to its very small size, orientation, and proximity to roads that this area is not manageable to protect wilderness characteristics.

WB5 – North Star: A number of problems that together make this area unmanageable to protect wilderness characteristics, including its narrow shape relative to its small size, proximity to private property along much of its boundary, the remaining boundary being open roads, a private property inholding deep into the area that nearly bisects it at one point, with closed, not decommissioned FR 4069e extending deeply from north to south into the area, and an overall lack of core area.

Analysis of Alternatives Process Documentation:

Applied Criteria in Each Alternative:

Alternative 1: 1986 Forest Plan

This is the “no action” alternative that analyzes effects if no changes were made to the previous forest plan (as amended). The 1986 forest plan recommended no new areas as wilderness, and therefore there is no necessity to develop analysis criteria for this alternative. Additionally, under the 1986 forest plan, both the Hell Hole and Lower San Francisco River Wilderness Study Areas were not recommended to Congress to be designated as wilderness. Because this alternative would be a continuation of the implementation of the 1986 plan, these Wilderness Study Areas are also not recommended to Congress for designation as wilderness under this alternative for the plan revision process.

Alternative 2: Proposed Action

This alternative is the proposed action for the revised forest plan, and includes the areas that the responsible official (forest supervisor) has determined are suitable to be recommended to congress for inclusion in the National Wilderness Preservation System. The DRAFT Proposed Forest Plan strives to balance consideration of stakeholder management concerns across the range of forest resources and consideration of the Gila National Forest’s resource management niches of Dispersed Recreation, Traditional Uses, and Ecological Restoration. The criteria for selection of areas to be

recommended for wilderness designation under this alternative were developed to be in alignment with the emphasis of this alternative.

The Gila National Forest fills a distinctive wilderness niche within the Southwest region, consisting of large, mostly contiguous wilderness areas, similar to Aldo Leopold's original vision when he recommended to the Forest Service that the Gila be preserved as wilderness. "By 'wilderness'", he wrote, "I mean a continuous stretch of country preserved in its natural state, open to lawful hunting and fishing, big enough to absorb a two weeks' pack trip, and kept devoid of roads, artificial trails, cottages, or other works of man."

The criteria for selection of areas to be recommended for wilderness designation under this alternative were developed to be in alignment with the emphasis of this alternative. Evaluated areas identified under this alternative were determined by the responsible official (forest supervisor) in consideration of, but not necessarily limited to, the following analysis criteria:

Step 1 Unless the forest supervisor exercises the discretion to consider otherwise, each area included in this alternative should have received an overall evaluation of wilderness characteristics ranking of MODERATE/HIGH, HIGH, or OUTSTANDING, and also contribute to the existing Gila National Forest wilderness niche of a large, mostly contiguous wilderness complex.

Step 2 -Identify for forest supervisor consideration: areas with 10 percent or more^h of their area coincident with moderate or greater relative probabilities of stand-replacement fireⁱ should a fire occur under extreme fire weather conditions; thus being candidates for restoration work that could include mechanical treatments.

^{h h} The 10 percent threshold was established for the probability of high severity fire based on the Forest Supervisor's judgement of what constituted an acceptable risk, knowing that recommendation to congress for wilderness designation would preclude mechanical treatments. This threshold was judged to be reasonable, and also applied to other criteria to provide for consistency in how 'a majority' of the evaluated area was determined

ⁱ Background Information on Likelihood of Stand Replacement Fire Probability Data Used for alternatives 2, 3, and 4.

Brief Description: This dataset was developed by Parks and others at the Rocky Mountain Research Station. It represents statistical model predictions of the relative likelihood of stand-replacement (high severity) fire in areas currently under tree cover. It does not predict the likelihood of fire occurrence, merely what is likely to occur should a fire happen. Extreme weather conditions are those moisture and temperature conditions that have been observed in the data only 5 percent of the time during active wildfire season.

Reference: Parks, S.A., L.M. Holsinger, M.H. Panunto, W.M. Jolly, S.Z. Dobrowski, and G.K. Dillon. High-severity fire: evaluating its key drivers and mapping its probability across western US forests. Environmental Research Letters 13(2018) 044037. Available online at <https://doi.org/10.1088/1748-9326/aab791>,

Note on rationale for using predictions under extreme weather conditions: Although predictions were prepared for the average and median fire season weather conditions, the extreme was chosen for this purpose because extreme weather conditions are predicted to occur more frequently in the future. These conditions are when initial attack is most difficult and least likely to be successful. All of these factors are being considered by the analysis in the context that wilderness non-conforming uses (including mechanical restoration) will not be permitted in any areas recommended to Congress as potential wilderness.

- Step 3** -Identify for forest supervisor consideration areas with more than 10 percent of their area being identified as potentially suitable for timber production. For more information on the timber suitability analysis, see Appendix C.
- Step 4** -Identify for forest supervisor consideration areas that have been identified as of importance to or as gathering areas by tribal communities that is important for them to have motorized access, or that have been identified as having current or potential for wilderness nonconforming traditional or recreational uses, including (but not limited to) mountain biking, motorized access, and fuelwood harvest.
- Step 5** -Identify for forest supervisor consideration areas that contain more than 10 percent of all water sources within the area that are associated with permitted grazing and require frequent maintenance or access by motorized means. Such improvements may include (but are not limited to) developed springs or wells, pipelines, solar panels, pumps, large above ground water storage structures or similar types of improvements.
- Step 6** -Identify for forest supervisor consideration areas that contain more than 1 mile of the total length of range fence within its boundaries that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means.
- Step 7** -Identify for forest supervisor consideration areas where boundaries may be adjusted to allow exclusion of any of the management concerns identified above, or for any documented additional relevant factors considered by the forest supervisor, and determine if the remaining modified areas would be manageable to protect wilderness characteristics.
- Step 8** -The final determination of which areas are to be included in this alternative will be decided by the forest supervisor’s discretion, giving consideration of, but not necessarily limited to, the criteria identified above. Any additional relevant criteria that were considered will also be documented in the analysis of alternatives within the plan revision Environmental Impact Statement.

Alternative 3

Issues addressed relevant to areas recommended to congress for wilderness designation under this alternative include restoration of rangelands and access to traditional recreation, cultural, and historical uses of the forest. Traditional recreation, cultural and historical uses may include, but are not limited to, tribal areas of importance and gathering areas requiring motorized access, motorized access and maintenance for permitted grazing of livestock^j, wilderness nonconforming recreational uses (including, but not limited to mountain biking and Off-Highway Vehicle (OHV) use) and gathering of forest products such as fuelwood.

This alternative emphasizes restoration objectives through mechanical treatments for grasslands and historically open-canopy woodlands and limits the use of prescribed fire^k. Under this alternative,

^j The Congressional Guidelines for Wilderness allow for consideration of allowing continued motorized use, on a case-by-case basis, for maintenance of range infrastructure in wilderness where it occurred prior to designation by Congress. It is considered as a factor here due to permittee concerns regarding the increased costs associated with non-motorized maintenance when motorized use may be limited or not approved by agency administrators.

^k This alternative focuses on restoration objectives for grasslands and open canopy woodlands where frequent, low-severity fire was characteristic of historic conditions. While Pinyon-Juniper Woodland (PJ Woodland) is

only areas eliminated for being not manageable to protect wilderness characteristics are initially excluded, and include all areas ranked in the Evaluation as LOW, MODERATE, MODERATE/HIGH, HIGH, or OUTSTANDING for possessing wilderness characteristics are given consideration.

The criteria for selection of areas to be recommended for wilderness designation under this alternative were developed to be in alignment with the emphasis of this alternative. Evaluated areas identified under this alternative are determined by the following analysis criteria:

Step 1 -Determine if the area contains 10 percent or more area with relative probabilities of high severity fire moderate or greater in grasslands and historically open-canopy woodlands:

- If the area does not contain 10 percent or more area with relative probabilities of high severity fire moderate or greater in the identified grassland/woodland ERUs, proceed to Step 2;
- If the area does contain more than 10 percent with relative probabilities of high severity fire moderate or greater in the identified grassland/woodland ERUs, determine if the boundary may be modified to so that it does not, but still remains manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed with the realigned area to Step 2;
- If the area boundary cannot be modified so that it does not contain 10 percent or more of lands with relative probabilities of high severity fire moderate or greater in the identified grassland/woodland ERUs but still remain manageable to protect wilderness characteristics, the area is eliminated from further consideration.

Step 2 -Determine if the area contains lands that have been identified as of importance to or a gathering area by tribal communities that is important for them to have motorized access:

- If the area does not contain tribal areas of importance or gathering areas, proceed to Step 3
- Determine if the area boundary may be modified so that it does not contain tribal areas of importance or gathering areas but will remain manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed to Step 3.
- If the area boundary cannot be modified so that it does not contain tribal areas of importance or gathering areas that are important for them to have motorized access, and still remain manageable to protect wilderness characteristics, the area is eliminated from further consideration.

Step 3 -Determine if areas contain lands that have been identified as having current, or feasible potential for, wilderness nonconforming traditional or recreational uses, including (but not limited to) mountain biking, motorized access, or fuelwood harvest:

conceptualized in the ERU framework as a historically closed-canopy, infrequent, high severity ecosystem, areas where it occurs on slopes less than 30 percent are included here to account for probable mapping errors that have been observed by Forest staff. The PJ Woodland ERU is present on the Forest, although many areas have been erroneously mapped as such due to the prevalence and degree of departure from historical conditions. Project-level work will require field validation of woodland type to determine what restoration needs actually exist. However, for the purposes of this analysis, historic impacts are assumed to have been concentrated on slopes less than 30 percent leading to a higher likelihood that these areas were historically open canopy woodlands. This 30 percent threshold was established in consultation with range specialists and based on animal behavior and slope factors included in standard capacity calculations (Holecheck 1988). Historic overgrazing impacts were likely higher on these slope gradients than they were on steeper terrain.

- If the area does not contain lands that have been identified as having feasible potential for a wilderness nonconforming traditional or recreational use proceed to step 4.
- Determine if the area boundary may be modified so that it does not contain lands that have been identified as having feasible potential for a wilderness nonconforming traditional or recreational use but will remain manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed to step 4.
- If the area boundary cannot be modified so that it does not contain lands that have been identified as having feasible potential for a wilderness nonconforming traditional or recreational use, and still remain manageable to protect wilderness characteristics, the area is eliminated from further consideration.

Step 4 -Determine if areas contain more than 10 percent of all developed water sources associated with permitted grazing that also require maintenance or access by motorized means. Such improvements may include (but are not limited to) developed springs or wells, pipelines, solar panels, pumps, large above ground water storage structures or other such types of improvements:

- If the area does not contain more than 10 percent of all developed water sources associated with permitted grazing that require maintenance or access by motorized means, proceed to step 4.
- Determine if the area boundary may be modified so that it does not contain more than 10 percent of all developed water sources associated with permitted grazing that also require maintenance or access by motorized means but will remain manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed to step 4.
- If the area boundary cannot be modified so that it does not contain more than 10 percent of all developed water sources associated with permitted grazing that also require maintenance or access by motorized means, and still remain manageable to protect wilderness characteristics, the area is eliminated from further consideration.

Step 5 -Determine if areas contain more than 1 mile of the total length of range fence within its boundaries that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means:

- If the area does not contain more than 1 mile length of range fence that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means, the area is included for analysis within the EIS alternative.
- Determine if the area boundary may be modified so that it does not contain more than 1 mile length of range fence that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means but will remain manageable to protect wilderness characteristics. If this may be accomplished, the area is included for analysis within the EIS alternative.
- If the area boundary cannot be modified so that it does not contain more than 1-mile length of range fence that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means, and still remain manageable to protect wilderness characteristics, the area is eliminated from analysis within the EIS alternative.

Step 6 -The final determination of which areas are to be included in this alternative will be decided by the forest supervisor's discretion, giving consideration of, but not necessarily limited to, the criteria identified above. Any additional relevant criteria that were considered will also

be documented in the analysis of alternatives within the plan revision Environmental Impact Statement.

Alternative 4

This alternative emphasizes restoration objectives for forested/timberland vegetation types through mechanical treatments while limiting the use of prescribed fire. Areas with high relative probabilities of stand-replacement fire are considered in the context of the need for forest restoration. The alternative also takes into consideration access to traditional recreation, cultural, and historical uses of the forest. Traditional recreation, cultural and historical uses may include, but are not limited to, tribal areas of importance and gathering areas that are important for them to have motorized access, motorized access and maintenance for permitted grazing of livestock, wilderness nonconforming recreational uses (including, but not limited to mountain biking and OHV use) and gathering of forest products such as fuelwood.

Under this alternative, only areas eliminated for being not manageable to protect wilderness characteristics are initially excluded, and include all areas ranked in the Evaluation as LOW, MODERATE, MODERATE/HIGH, HIGH, or OUTSTANDING for possessing wilderness characteristics are given consideration.

The criteria for selection of areas to be recommended for wilderness designation under this alternative were developed to be in alignment with the emphasis of this alternative. Evaluated areas identified under this alternative are determined by the following analysis criteria:

Step 1 -Remove from consideration areas that contain 10 percent or greater lands Identified as Potentially Suitable for Timber Production under Step 1 of the Timber Suitability Analysis

- If the area does not contain 10 percent or more area that is identified as may be suitable, proceed to step 2;
- If the area does contain more than 10 percent lands identified as may be suitable, determine if the boundary may be modified to so that contains less than 10 percent, but still remains manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed with the realigned area to step 2;
- If the area boundary cannot be modified so that it does not contain 10 percent or more of lands that “may be suited for timber production” and remain manageable to protect wilderness characteristics, the area is eliminated from further consideration.

Step 2 -Remove from further consideration areas that contain 10 percent or more area in forest/timber ERUs that have a moderate or higher probability of stand-replacement fire should a fire occur during extreme fire weather conditions

- If the area does not contain 10 percent or more area identified as forested combined with moderate to high probability of stand-replacement fire occurring during extreme fire weather conditions, proceed to step 3;
- If the area does contain more than 10 percent of its area identified as forested combine with having moderate to high probability of stand-replacement fire occurring during extreme fire weather conditions, determine if the boundary may be modified so that it contains less than 10 percent, but still remain manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed with the realigned area to Step 3;

- If the area boundary cannot be modified so that it does not contain 10 percent of its area identified as forested combined with having moderate or higher probability of stand-replacement fire should a fire occur during extreme fire weather conditions, the area is eliminated from further consideration.

Step 3 -Determine if the area contains lands that have been identified as of importance to or a gathering area by tribal communities that is important for them to have motorized access:

- If the area does not contain tribal areas of importance or gathering areas, proceed to Step 4;
- Determine if the area boundary may be modified so that it does not contain tribal areas of importance or gathering areas but will remain manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed to Step 4;
- If the area boundary cannot be modified so that it does not contain tribal areas of importance or gathering areas that are important for them to have motorized access, and still remain manageable to protect wilderness characteristics, the area is eliminated from further consideration.

Step 4 -Determine if areas contain lands that have been identified as having current, or feasible potential for, wilderness nonconforming traditional or recreational uses, including (but not limited to) mountain biking, motorized access, or fuelwood harvest:

- If the area does not contain lands that have been identified as having feasible potential for a wilderness nonconforming traditional or recreational use, proceed to step 5;
- Determine if the area boundary may be modified so that it does not contain lands that have been identified as having feasible potential for a wilderness nonconforming traditional or recreational use but will remain manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed to step 5;
- If the area boundary cannot be modified so that it does not contain lands that have been identified as having feasible potential for a wilderness nonconforming traditional or recreational use, and still remain manageable to protect wilderness characteristics, the area is eliminated from further consideration.

Step 5 -Determine if areas contain more than 10 percent of all developed water sources associated with permitted grazing that also require maintenance or access by motorized means. Such improvements may include (but are not limited to) developed springs or wells, pipelines, solar panels, pumps, large above ground water storage structures or other such types of improvements:

- If the area does not contain more than 10 percent of all developed water sources associated with permitted grazing that also require maintenance or access by motorized means, proceed to step 6;
- Determine if the area boundary may be modified so that it does not contain more than 10 percent of all developed water sources associated with permitted grazing that also require maintenance or access by motorized means but will remain manageable to protect wilderness characteristics. If this may be accomplished, preliminarily modify the boundary and proceed to step 6;
- If the area boundary cannot be modified so that it does not contain more than 10 percent of all developed water sources associated with permitted grazing that also require maintenance or access by motorized means, and still remain manageable to protect wilderness characteristics, the area is eliminated from further consideration.

Step 6 -Determine if areas contain more than 1 mile of the total length of range fence contained within its boundaries that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means:

- If the area does not contain more than 1-mile length of range fence within its boundaries that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means, the area is included for analysis within the EIS alternative;
- Determine if the area boundary may be modified so that it does not contain more than 1-mile length of range fence that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means but will remain manageable to protect wilderness characteristics. If this may be accomplished, the area is included for analysis within the EIS alternative;
- If the area boundary cannot be modified so that it does not contain more than 1-mile length of range fence that is currently accessed by the permittee for authorized purposes of fenceline inspection, repairs and maintenance by motorized means, and still remain manageable to protect wilderness characteristics, the area is eliminated from analysis within the EIS alternative.

Step 7 -The final determination of which areas are to be included in this alternative will be decided by the forest supervisor’s discretion, giving consideration of, but not necessarily limited to, the criteria identified above. Any additional relevant criteria that were considered will also be documented in the analysis of alternatives within the plan revision Environmental Impact Statement.

Alternative 5

Issues addressed under this alternative relevant to recommendation of areas to congress for wilderness designation include emphasis on considering the greatest amount of areas with at least moderately ranked characteristics as recommended wilderness combined with emphasis of natural processes over use of mechanical treatments, and minimizing risk of wildfire to values at risk within the wildland-urban interface areas of the forest.

The criteria for selection of areas to be recommended for wilderness designation under this alternative were developed to be in alignment with the emphasis of this alternative. Evaluated areas identified under this alternative are determined by the following analysis criteria:

Step 1 -Unless the forest supervisor (responsible official) exercises the authority to consider otherwise, each area to be included in the alternative has received an overall evaluation of wilderness characteristics ranking of MODERATE, MODERATE/HIGH, HIGH, or OUTSTANDING, and;

Step 2 -Determine if areas allow for mechanical restoration of defensible space adjacent to private property or contain WUI areas identified as a priority for restoration with mechanical equipment.

- If the area does not inhibit mechanical restoration of defensible space adjacent to private property and does not contain WUI areas identified as a priority for restoration with mechanical equipment, the area is included for analysis within the EIS alternative.
- Determine if the area boundary may be modified so that it does not inhibit mechanical restoration of defensible space adjacent to private property and does not contain WUI areas identified as a priority for restoration with mechanical equipment, but it will remain manageable

to protect wilderness characteristics. If this may be accomplished, the area is included for analysis within the EIS alternative.

- If the area boundary cannot be modified so that it does not inhibit mechanical restoration of defensible space adjacent to private property and does not contain WUI areas identified as a priority for restoration with mechanical equipment, and still remain manageable to protect wilderness characteristics, the area is eliminated from analysis within the EIS alternative.

Step 3 -The final determination of which areas are to be included in this alternative will be decided by the forest supervisor’s discretion, giving consideration of, but not necessarily limited to, the criteria identified above. Any additional relevant criteria that were considered will also be documented in the analysis of alternatives within the plan revision Environmental Impact Statement.

Results of the Analysis of Alternatives:

The detailed narrative of the results of the ID Team’s analysis of each area for each alternative may be found in the document Wilderness ID Team Alternatives Analysis Process Documentation ([link](#)), and summaries of the results of the analysis may be found in table 8. This summary table includes which areas recommended, and number of acres of the area recommended, as well as total acres recommended, for each alternative except alternative 1; because there is no new recommended wilderness under this alternative, it is not included in the table. Figure 3 through figure 6 display the recommended areas for each alternative.

Table 7. Summary number of areas and acres of recommended wilderness by alternative

Alternative	Number of Areas Recommended	Total Acres Recommended
1	0	0
2	13	110,402
3	26	130,012
4	17	72,901
5	58	745,286

Table 8. Summary of recommended wilderness by alternative –alternatives 2 through 5

Evaluated Area	Evaluation Acres	Evaluation Overall Ranking Score	Evaluation Overall Ranking	Alternative 2 Acres	Alternative 3 Acres	Alternative 4 Acres	Alternative 5 Acres
Q1-LARGO	15,288	10.3	M	0	0	0	14,265
Q2-THE HUB	36,344	13.5	MH	0	0	0	34,085
Q4-CHAVEZ LAKE	7,237	10.3	M	0	0	0	6,759
Q6-FOX MOUNTAIN	12,956	11.6	M	0	0	0	9,704
Q9-APACHE MOUNTAIN	17,972	10.3	M	0	0	0	13,942
Q11-MOTHER HUBBARD	5,728	15.7	H	0	0	0	5,689
QG1-NOLAN NORTH	8,685	15.7	H	6,718	7,686	0	7,609
QG2-NOLAN SOUTH	4,404	11.7	M	0	0	0	4,404
QR1-UPPER FRISCO BOX	41,047	14.7	H	0	0	0	36,691
QR2-UPPER FRISCO BOX EAST	18,810	9	M	0	0	0	14,252
R1-EAGLE PEAK	31,993	11.7	M	0	0	0	31,169
R3-MORAGA CANYON	8,527	10.3	M	0	0	0	8,162
R4-O-BAR-O MOUNTAIN	20,010	12	MH	0	0	0	18,555
R9-WAGON TONGUE	14,628	11.7	M	0	0	0	11,463
R10a-GILA ADDITIONS NORTH RESERVE	536	9	M	0	536	0	536
R10b -GILA ADDITIONS NORTH RESERVE	657	9	M	0	657	207	657
RB1-EAST ELK MOUNTAIN	9,064	10	M	0	0	0	8,924
RG1-ASPEN MOUNTAIN	22,089	16	OS	19,053	0	0	21,895
RG2-DEVILS CREEK	61,067	13	MH	0	0	0	43,383
RG4-NORTH MOGOLLON MOUNTAINS	21,591	12	MH	0	11,584	0	20,398
G1-MINERAL CREEK	20,525	23.3	OS	16,538	16,540	0	16,848
G3-GILA RAIN CREEK ADDITION	1,298	10.3	M	0	374	871	1,095
G5-PARK MOUNTAIN	11,316	10.7	M	0	0	0	10,737
G6-LOWER SAN FRANCISCO	21,196	18.3	OS	0	0	14,746	21,018
G7-HELL HOLE	20,535	11	M	0	0	0	19,623
G8-SMOOTHING IRON MESA	3,588	12.3	MH	0	0	3,152	3,588
G9-BLUE RANGE SE ADDITION	3,040	6	M	0	0	0	2,856
G10-BLUE RANGE SW ADDITION	3,709	8	M	0	0	0	3,709

Evaluated Area	Evaluation Acres	Evaluation Overall Ranking Score	Evaluation Overall Ranking	Alternative 2 Acres	Alternative 3 Acres	Alternative 4 Acres	Alternative 5 Acres
G11-GILA DRY CREEKS ADDITION	3,129	10.3	M	0	1,973	373	2,827
G12-GILA WHITEWATER ADDITION	3,463	13.7	MH	1,960	3,116	0	2,223
B1a-ALDO LEOPOLD SECO ADDITIONS	5,741	14.3	H	4,724	517	4,031	5,741
B1b-ALDO LEOPOLD SECO ADDITIONS	265	14.3	H	0	208	0	229
B1c-ALDO LEOPOLD SECO ADDITIONS	78	14.3	H	48	78	40	48
B5-STONE CREEK	8,384	11.3	M	0	0	0	8,383
B8-BEAVERHEAD	9,849	9	M	0	0	0	8,055
B10-ALDO LEOPOLD ADDITION NORTHEAST	15,909	14.3	H	8,381	4,076	0	15,181
B11-ALDO LEOPOLD ADDITION SOUTHEAST	1,242	12.7	MH	944	943	943	1,242
B13-WAHOO NORTH	20,139	11.3	M	0	0	0	19,737
B14-ALDO LEOPOLD ADDITION CARBONATE CREEK	5,380	14	H	2,819	3,592	0	4,546
SB1-SAWYER PEAK	41,063	13.7	MH	0	21,007	23,353	39,150
S1-MOGOLLON BOX/TADPOLE RIDGE	48,067	17	OS	0	930	4,856	46,437
S2-GILA MIDDLE BOX	25,335	16	OS	0	0	0	24,523
S3-BEAR MOUNTAIN	11,124	9	M	0	0	0	10,056
S4-NORTH BURROS	15,786	9	M	0	0	0	15,556
S5-SADDLE ROCK	6,734	9.3	M	0	0	0	6,519
S6a-GILA ADDITIONS SOUTHWEST	526	9	M	0	11	120	447
S6b-GILA ADDITIONS SOUTHWEST	4,643	9	M	0	270	0	4,558
S6d-GILA ADDITIONS SOUTHWEST	1,040	9	M	0	248	0	1,040
S7-BURRO PEAK	7,522	6	M	0	0	0	7,319
S8-KNIGHT PEAK	5,618	6.3	M	0	0	0	5,294
S9-ROYAL JOHN	6,915	11.7	M	0	0	0	6,915
S10-LOWER GALLINAS CANYON	9,048	8.7	M	0	0	0	8,544
SW1-GILA ADDITION SAPILLO	264	12	MH	0	186	256	128

Evaluated Area	Evaluation Acres	Evaluation Overall Ranking Score	Evaluation Overall Ranking	Alternative 2 Acres	Alternative 3 Acres	Alternative 4 Acres	Alternative 5 Acres
W1c-GILA ADDITION LAKE ROBERTS	732	10	M	0	0	691	393
W3-ALDO LEOPOLD ADDITION WEST	3,394	12	MH	1,110	1,109	0	3,389
W4-ALDO LEOPOLD ADDITION MCKNIGHT CANYON	12,458	16.3	OS	11,094	11,050	0	12,458
W7-GILA ADDITION EAST	1,057	11	M	0	0	642	564
WB1-TAYLOR CREEK	27,335	15	H	10,012	6,672	0	26,852
WB2-GILA ADDITION EAST	4,437	14	H	0	1,434	4,437	3,919
WB4-GILA ADDITION NORTHEAST	14,153	10.7	M	0	9,230	0	13,862
WB6-GILA ADDITION BEAVER CREEK	4,975	11	M	0	0	2,273	4,252
WSB1-RABB PARK	43,998	15	H	27,002	25,984	0	42,878
Alternative Total:	-	-	-	110,402	130,012	72,901	745,286

Rankings: N = NONE, L = LOW, M = MODERATE, MH = MODERATE/HIGH, H = HIGH, OS = OUTSTANDING

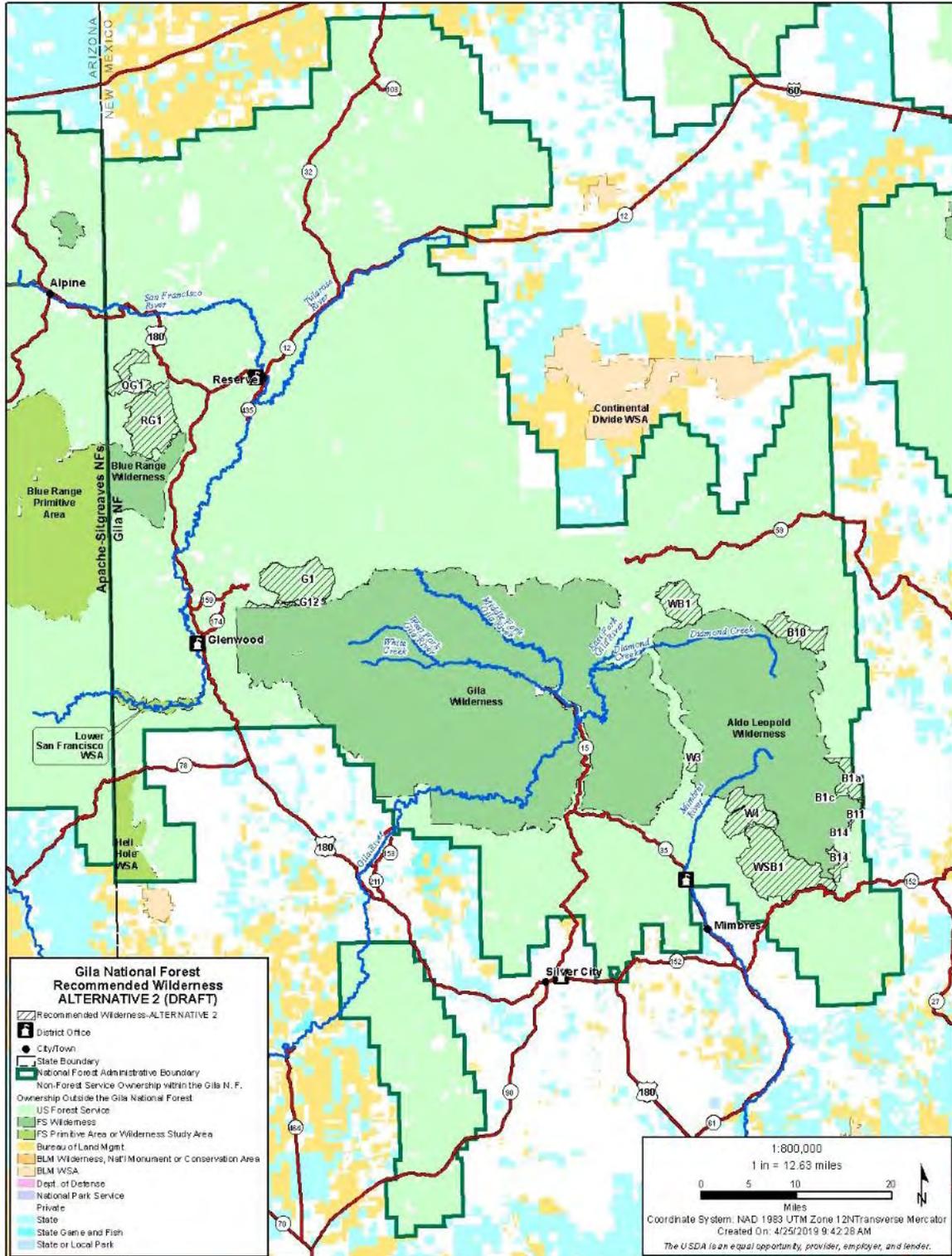


Figure 3. Recommended wilderness under alternative 2

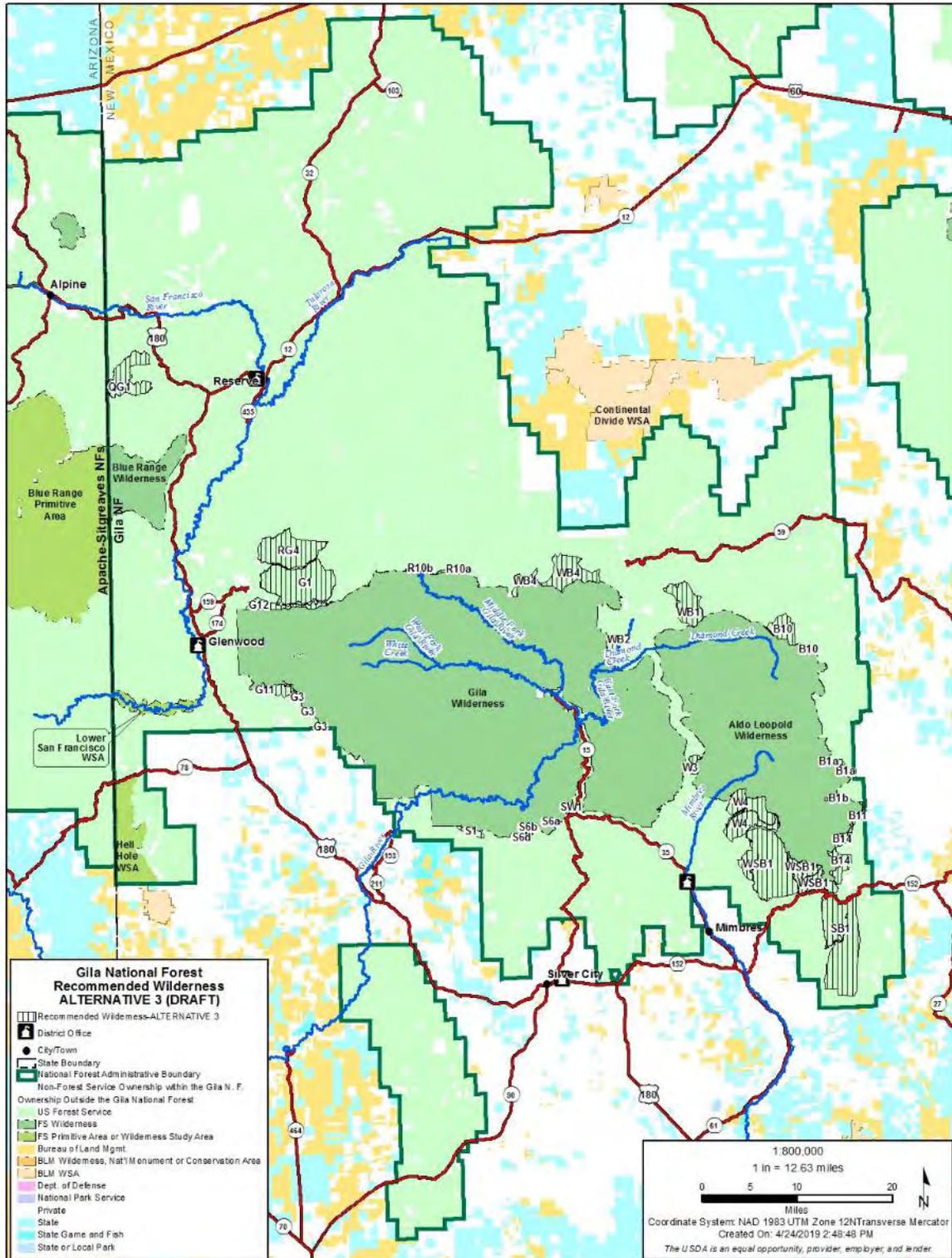


Figure 4. Recommended wilderness under alternative 3

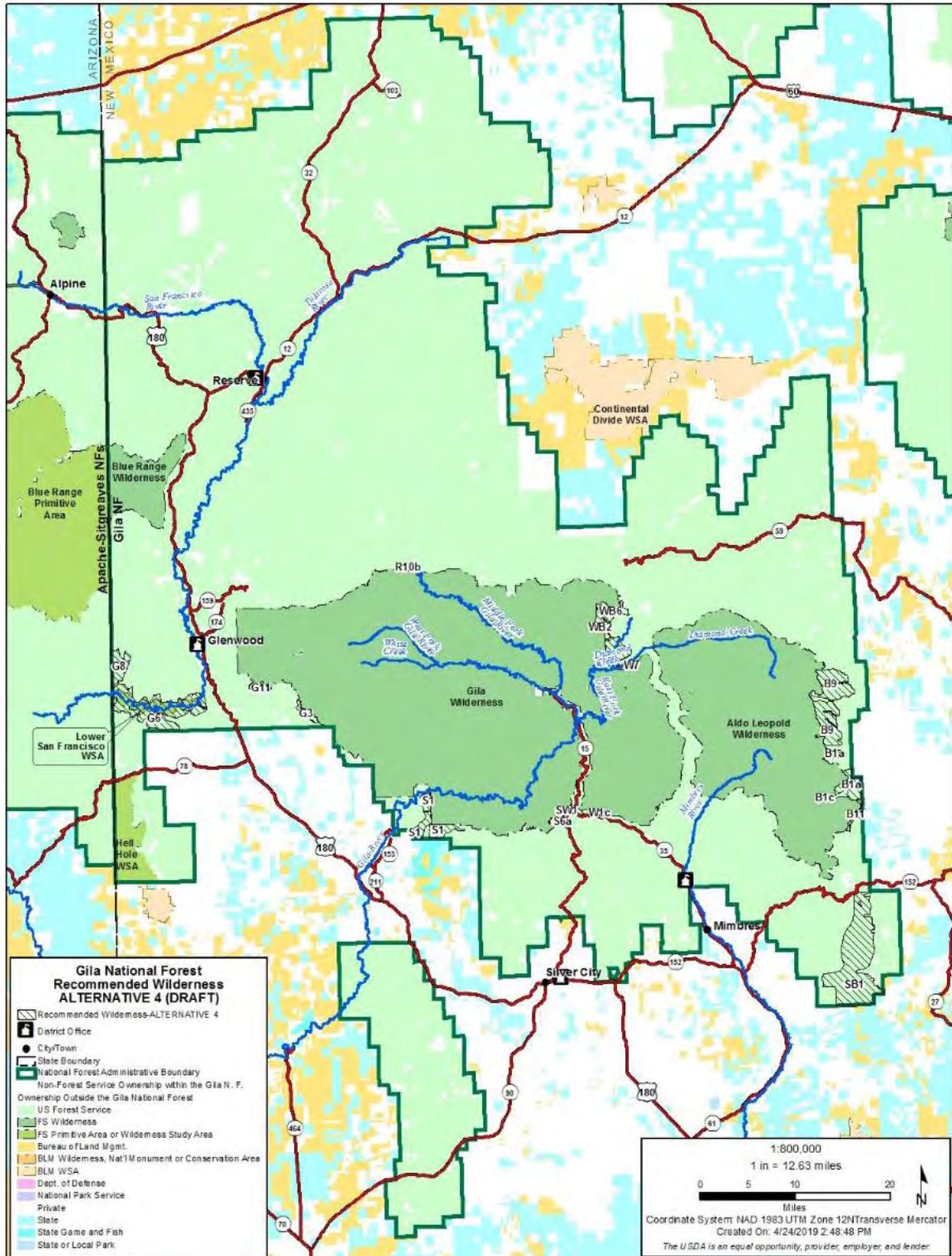


Figure 5. Recommended wilderness under alternative 4

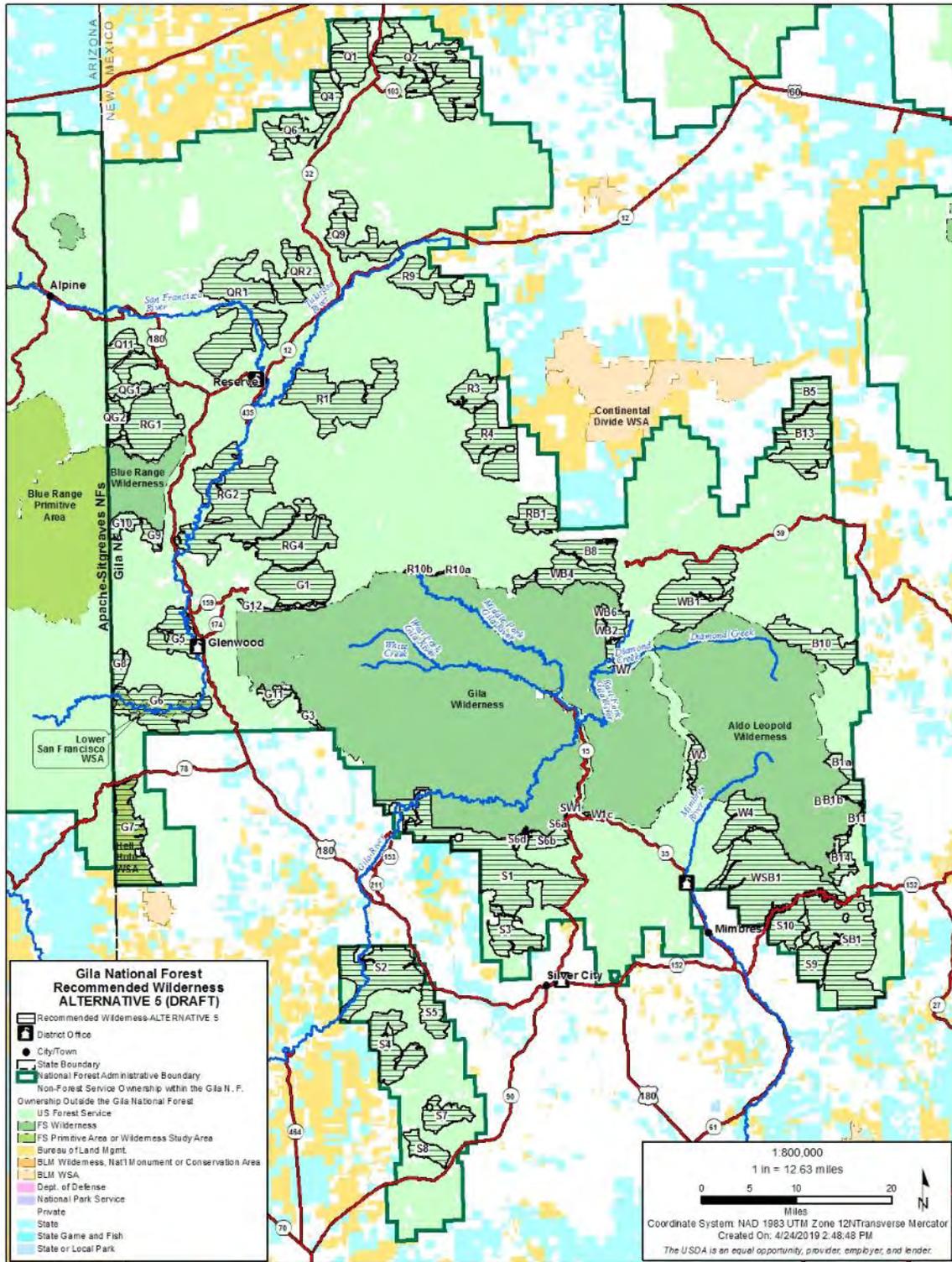


Figure 6. Recommended wilderness under alternative 5

Description of Areas Recommended for Wilderness Designation in Alternatives

Because of differences in criteria applied to address issues within each alternative, the overall acres and orientation of the boundaries of each of these recommended areas is sometimes varied from their locations between the evaluation and each of the alternatives they are included within.

Q1 - Largo

Alternative 5 - 14,265 acres, for detailed boundary locations see figure 7

Location and Boundaries: The Q1 – Largo area is located in the central to eastern part of the northernmost of region of the Quemado Ranger District, and lies within Catron County, New Mexico.

General description: The majority of the vegetation cover throughout the area is piñon-juniper, with some open grasslands areas and occasional stringers of ponderosa pine. This is overall relatively gentle terrain, the geology consists of lots of Datil soils and associated erosional features, such as steep slopes, mesas, and hoodoos, and is dominated by Largo Mesa.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive, non-motorized setting, but with areas of semi-primitive motorized settings to the northwest, and roaded natural along the south, southwest, and southeast boundaries
- This area is mostly within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Agua Fria, East Demetrio, and El Caso grazing allotments.

Table 9. Evaluated wilderness characteristics of the Q1 - Largo area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	6
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	10.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

- Other Features of Value are present within the area, including a proposed research natural area that will likely be recommended in the revised plan as well. The area also offers scenic opportunities of features in the northern portion of the district.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- There are very good opportunities for solitude within the area, outside of hunting seasons the likelihood of encountering other visitors is extremely low, essentially guaranteeing opportunities for solitude.

Based upon recommendation of Quemado district employees familiar with the area on the ground, two adjacent inventoried areas were combined together and a narrow boundary created between two cherry-stemmed roads was removed to develop this area’s boundaries. Current area boundaries are generally determined by setbacks from forest system roads and defensible space for adjacent private property, and there are a number of deeply intruding cherrystemmed forest system roads.

General description: This is a relatively large area that includes most of Escondido Mountain. Most of the vegetation cover throughout the lower elevations is primarily piñon-juniper, but with some stringers of ponderosa pine and mixed conifer on the higher elevations. There are interesting geologic erosional features and hoodoos at the part of the area that it is named for, “The Hub”. This is overall relatively steep and rugged terrain, and there are substantial views from much of the area, and access to several hiking trails. Access to some areas may be challenging because of the need to cross private property where easements have not been established. There is a fair level of development in immediately adjacent areas, such as the developed recreation area at Quemado Lake and private property housing developments. There are system hiking trails in the area, though they receive very light levels of use.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is managed as for a core area of semi-primitive, non-motorized setting, with area boundaries that feature areas of semi-primitive motorized, roaded natural, and rural settings.
- Nearly half of this area is within Inventoried Roadless Area (IRA), and is therefore that portion is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Agua Fria, Escondido, El Caso, and San Antone grazing allotments

Table 10. Evaluated wilderness characteristics of the Q2 – the Hub area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	6
Step 5 – Other Features of Value	LOW/MODERATE	1.5
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	13.5

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including “The Hub,” a wide, shallow box canyon area that features an interesting and accessible geologic area colloquially referred to as

“bubble rocks”, an unusual group of spherical rock formations. There is also outstanding scenery available throughout the area, including views of Quemado Lake from higher elevations.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural throughout at least 90 percent of the area, and does not appear to be manipulated by humans.
- Current ecological conditions within the area reflect that there has been very little management activity occurring within the area, except for the permitted grazing of livestock, and there is only minor evidence of any type of modern human land management activity.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- For the relative size of the area, there are few range improvements, with natural barriers providing a large portion of livestock containment.
- Improvements are very few in number and rarely encountered, are not concentrated and their appearance detracts very little from apparent naturalness.
- There are very good opportunities for solitude. The area receives use during antler gathering and hunting seasons, but because of the steep, rugged terrain, OHV access into the area is difficult, and outside of hunting seasons, the likelihood of encountering other visitors is extremely low, allowing for great opportunities for solitude.
- Because of the relative size of the area, combined with the presence of trails and rugged, variable terrain, opportunities for primitive recreation are high.

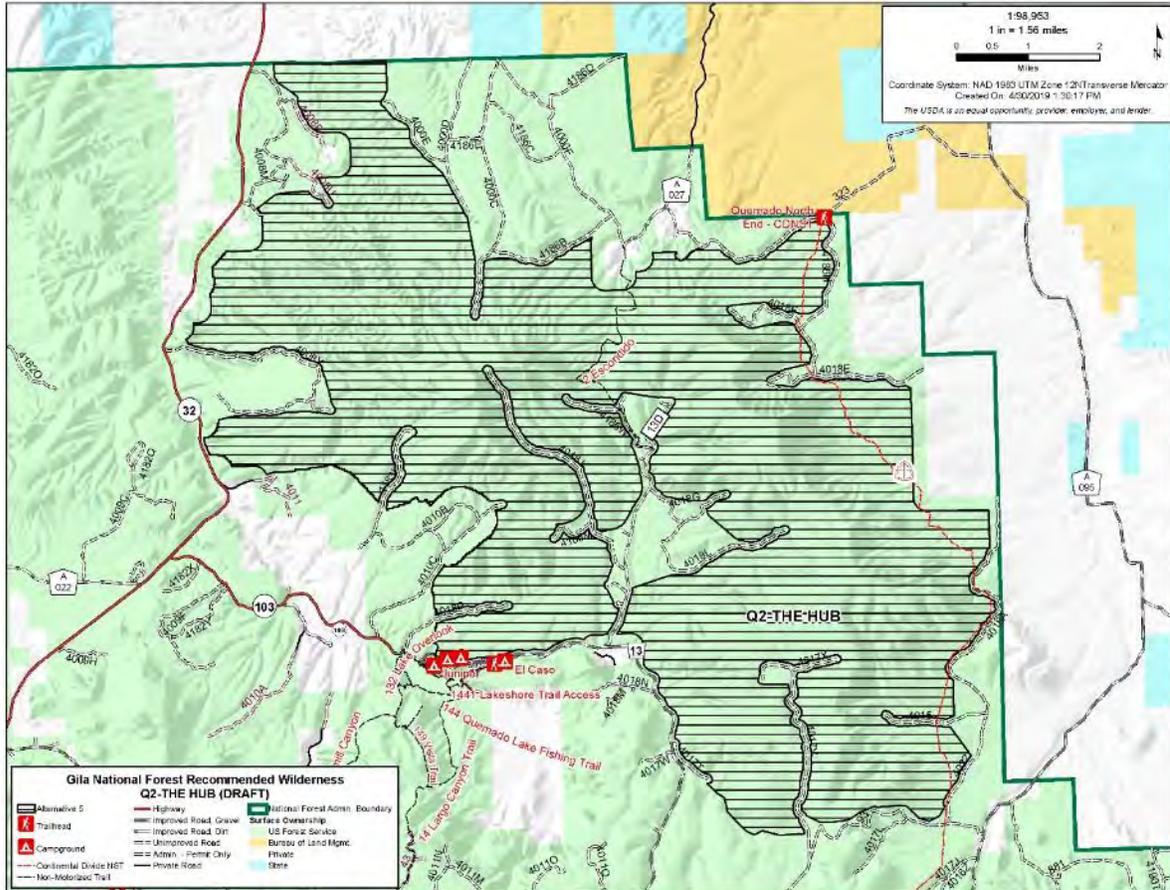


Figure 8. Recommended wilderness by alternative for Q2-the Hub

Q4 – Chavez Lake

Alternative 5 - 6,759 acres, for detailed boundary locations see figure 9

Location and Boundaries: The Q4 – Chavez Lake area is located in the central part of the northernmost of region of the Quemado Ranger District, within Catron County, New Mexico. Area boundaries are generally determined by setbacks from roads and defensible space with adjacent private and other ownership lands.

General description: Chavez Lake is a small area located on a large mesa top, with rough terrain bordering the core of the area. The majority of the vegetation cover throughout this area is piñon-juniper, with some open grass areas. There are excellent views of Fox Mountain and a fair amount permitted grazing improvements.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive, non-motorized setting
- This area is not located within any Inventoried Roadless Area (IRA), and is therefore not currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the East Demetrio, West Demetrio, and Jewett Gap grazing allotments.

Table 11. Evaluated wilderness characteristics of the Q4 – Chavez Lake area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	10.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- This is a very remote and rarely visited area for most of the year, and there is a high probability of finding solitude at most times.

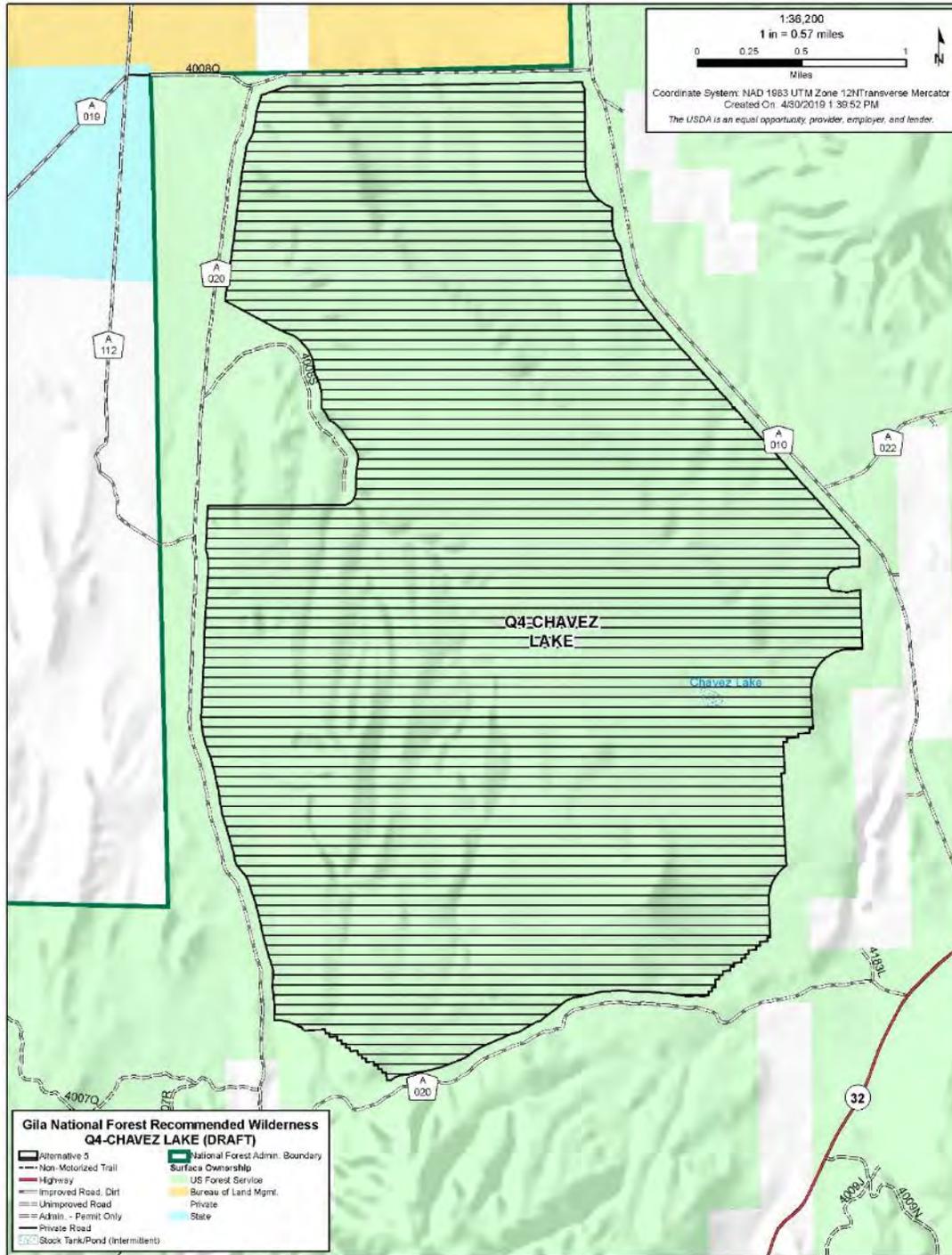


Figure 9. Recommended wilderness by alternative for Q4-Chavez Lake

Q6 – Fox Mountain

Alternative 5 - 9,704 acres, for detailed boundary locations see figure 10.

Location and Boundaries: The Q6 – Fox Mountain area is located in the north-central region of the Quemado Ranger District, in Catron County, New Mexico. Boundaries were generally determined by roads and boundaries with private properties, with some adjustments to avoid including improvements considered substantially noticeable and to avoid cherrysteming of roads where possible.

General description: The Fox Mountain is a small to moderate-sized area moderate sized featuring some of the more steep and rugged terrain for this part of the Quemado District. The vegetation cover throughout this area is a classic southwestern mountains mix, and depending upon elevation and aspect may be piñon-juniper at lower, south-facing slopes, stringers of ponderosa pine in drainages and north-facing slopes, or mixed conifer at the highest elevations facing primarily to the north.

The Fox Mountain Lookout, which is also the site of an electronic communication site with a small building, is located adjacent to the area.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this core of the area is predominantly managed as a semi-primitive, non-motorized setting, but with significant areas of semi-primitive motorized and small areas of roaded natural.
- This area is less than half located within inventoried roadless area (IRA), and is currently managed to protect roadless characteristics in those areas.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the West Demetrio and Jewett Gap grazing allotments.

Table 12. Evaluated wilderness characteristics of the Q6 – Fox Mountain area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4.6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	6
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	11.6

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3 and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

- Other Features of Value are present within the area, including superior scenery of the northern part of the forest from Fox Mountain.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects active management activity occurring within the area, including past vegetation treatments as well as past and current permitted grazing of livestock. The composition of plant and animal communities appears natural in the majority of the area.
- There has been past logging activity and piñon-juniper pushes in some locations within the area (such as the Blanco Canyon area), but little to no noticeable management activity has occurred within the steeper and less accessible locations. Current ecological conditions within the area reflect that there has been management activity occurring and modern human land management activity is noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- For the relative size of the area, there are few range improvements; most of the ones in the general area were excluded from the inventoried area by boundary adjustments. For its moderate size, there are very few fences in particular.
- There are few opportunities for motorized access into the area, and the few existing roads are often impassible in wet weather. Outside of hunting or antler gathering seasons the likelihood of encountering any other visitors is extremely low in most parts of the area. This is a very remote and rarely visited area for most of the year, and finding solitude at most times is likely throughout the area.
- There may be issues with access to the area across private property to reach the Blanco Trail, but throughout the majority of this area there are few limitations to the types and pursuit of primitive recreation opportunities. This a reasonably large-sized area with a variability of terrain and no additional management restrictions to confine recreation pursuits.

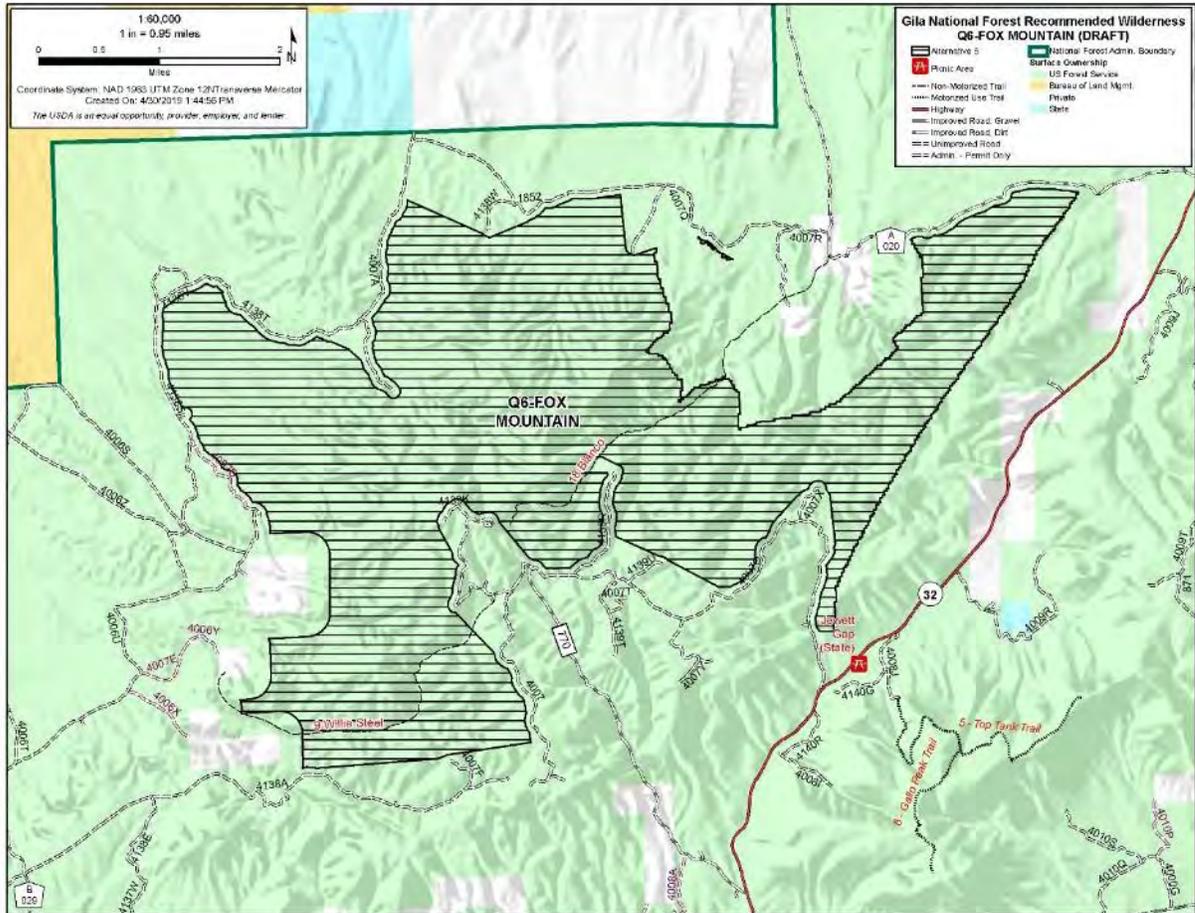


Figure 10. Recommended wilderness by alternative for Q6-Fox Mountain

Q9 – Apache Mountain

Alternative 5 - 13,942 acres, for detailed boundary locations see figure 11

Location and Boundaries: The Q9 – Apache Mountain area is located in the central region of the Quemado Ranger District, within Catron County, New Mexico. NM State Hwy 32 passes by the southwestern-most corner of the area and NM State Hwy 12 passes to the southeast, and setbacks from these comprise some of the area boundaries, along with setbacks from forest system roads, and setbacks to provide defensible space for adjacent private property, around the entire area.

General description: This is a small-to-moderate sized area that is somewhat narrow and crescent shaped, but also consists of some of the most steep and rugged terrain on the Quemado District. The vegetation cover is mostly piñon-juniper with ponderosa pine and mixed conifer in pockets on the north slopes. Very little management activity has occurred, and a majority of the area consists of inventoried roadless area identified from the 2001 Roadless Rule.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive, non-motorized setting, with areas of semi-primitive motorized near area boundaries, and a small area of roaded natural to the southeast.
- This area is mostly within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Gallo Mountain, East Jewett, East Apache Creek, and West Sand Flat grazing allotments.

Table 13. Evaluated wilderness characteristics of the Q9 – Apache Mountain area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	10.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.

- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- This is a very remote and rarely visited area for most of the year, and finding solitude at most times is almost a certainty outside of hunting or antler gathering seasons. The likelihood of encountering any other visitors at other times of the year is extremely low, providing very good opportunities for solitude within this area.
- Throughout this moderately sized area, there is a fair amount of core area and there are few limitations to the types and pursuit of primitive recreation opportunities available. There is some variability of terrain from mild to challenging, and few restrictions to confine recreation pursuits.

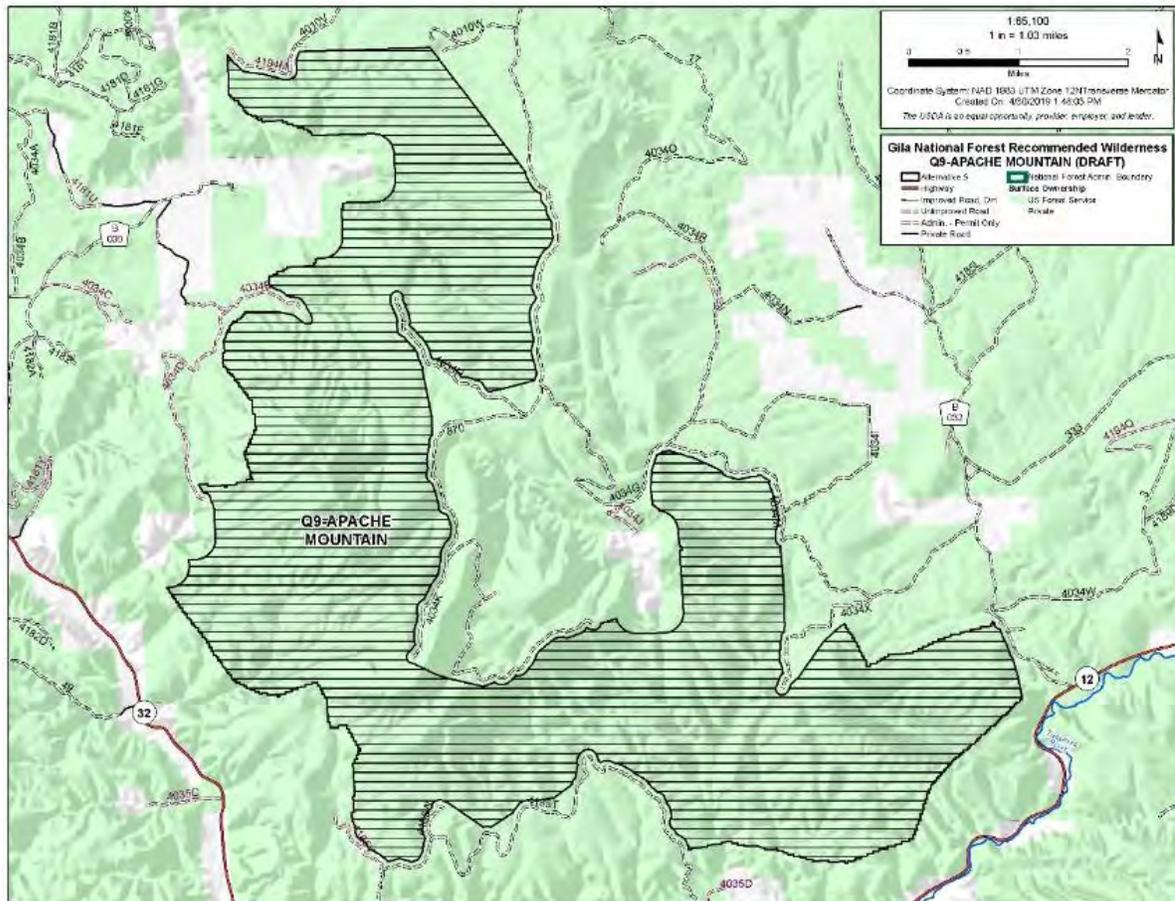


Figure 11. Recommended wilderness by alternative for Q9-Apache Mountain

Q11 – Mother Hubbard

Alternative 5 - 5,689 acres, for detailed boundary locations see figure 12

Location and Boundaries: The Q11 –Mother Hubbard area is located in the southwestern region of the Quemado Ranger District, on the boundary with lands of similar status and similarly managed by the Apache-Sitgreaves National Forests on the Arizona side of the state line boundary. The area is within Catron County, New Mexico.

General description: The character of the Mother Hubbard area consists of mostly steep and rugged terrain, including deeply incised canyons and drainages, and vegetation consists mostly of ponderosa pine-oak forest with some smaller areas of mixed conifer, and piñon-juniper at lower elevations. Areas of grassy meadow are mixed in throughout, including some drainage bottoms. There are several perennial streams within the canyons, sometimes resulting in dramatic waterfalls and scenic riparian areas with associated vegetation. Mother Hubbard is separated on its southern boundary from QG1 Nolan North, formerly identified as QG1a, Nolan North by a motorized trail that follows the bottom of the Dry Blue River Drainage. Mother Hubbard is part of a larger inventoried roadless area that crosses state and forest boundaries into neighboring national forest lands. That additional contiguous 2,100 acres of inventoried roadless area is overlapped by 2,656 acres of evaluated potential wilderness from the Apache-Sitgreaves forest plan revision process completed in 2015.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive, non-motorized setting with semi-primitive motorized settings along south and east boundaries.
- This area is entirely within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Luna grazing allotment.

Table 14. Evaluated wilderness characteristics of the Q11 – Mother Hubbard area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (SOLITUDE) HIGH (RECREATION)	9
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	HIGH	15.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

- Other Features of Value are present within the area, including scenic qualities for its dramatic terrain, waterfalls, and quality riparian areas.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area, and reflects very little active management activity occurring within the area.
- There is only minor evidence of any type of modern human land management activity.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- For the relative size of the area, there are very few improvements, except a range fence to the northeast.
- Outside of hunting or antler gathering seasons the likelihood of encountering any other visitors at other times of the year is extremely low particularly within areas with steeper and more challenging terrain, providing very good opportunities for solitude. Despite its relatively small size, much of this area is remote and rarely visited for most of the year, and finding solitude in the rugged terrain at most times is almost a certainty throughout the area.
- Throughout this moderately sized area, there is good core area available to pursue a variety of activities, and there are few limitations to the types and pursuit of primitive recreation opportunities available. There is variability of terrain, some very challenging, and few restrictions to confine recreation pursuits.

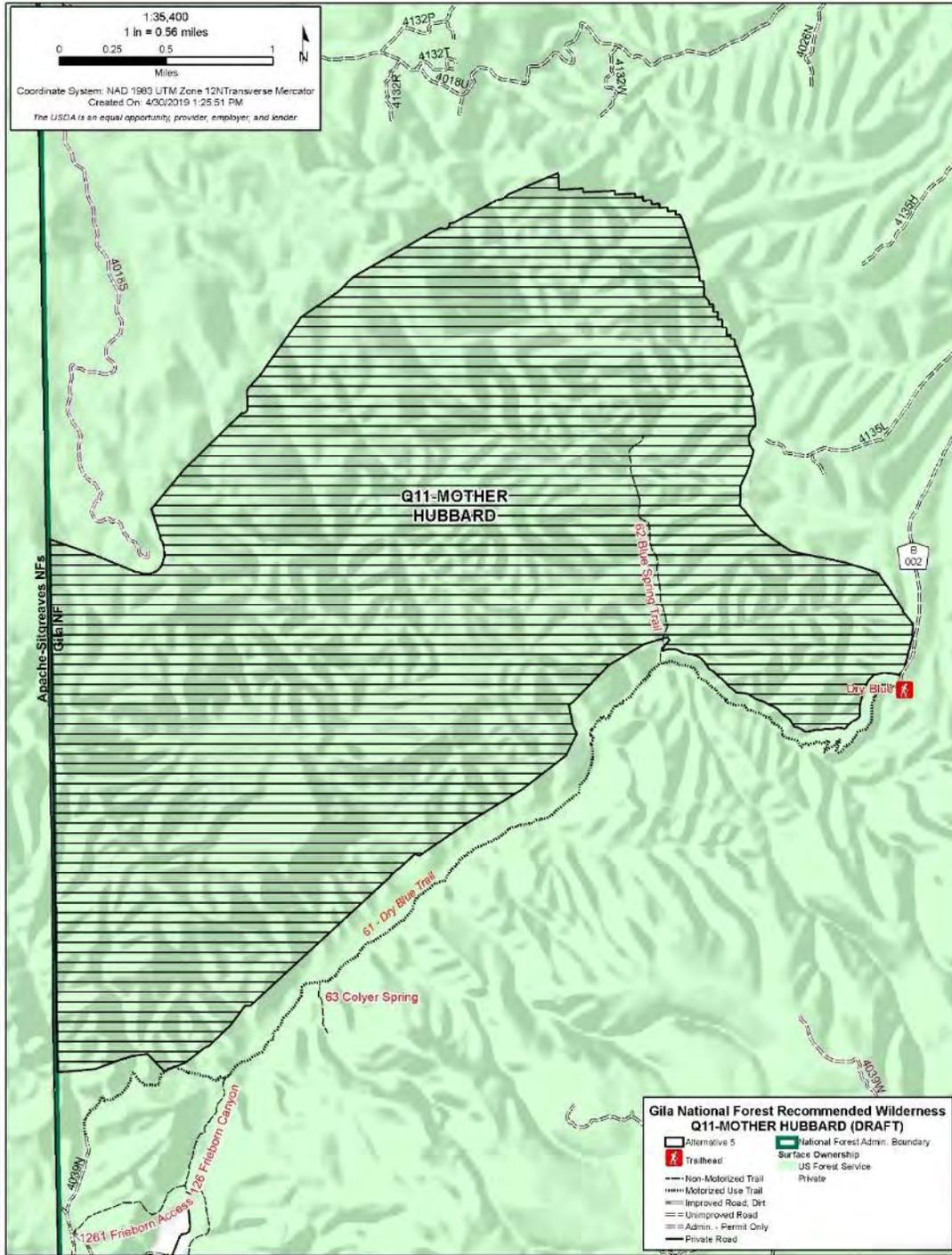


Figure 12. Recommended wilderness by alternative for Q11-Mother Hubbard

QG1 – Nolan North

Alternative 2 - 6,717 acres, alternative 3 - 7,686 acres, alternative 5 - 7,609 acres
 For detailed boundary locations see figure 13.

Location and Boundaries: This area is located in the relatively remote southwestern region of the Quemado Ranger District, within Catron County, New Mexico, near the Blue River and at the edges of the Mogollon Rim. Boundaries include a combination of natural features, including topography, roads and fencelines, and previously identified boundaries for inventoried roadless areas and wildland-urban interface defensible space. Boundaries are set back from constructed features and private property outside of WUI areas to allow for maintenance of rights of way, defensible space for fire, and pre-established Travel Management dispersed camping corridors.

General description: Nolan North is a generally crescent shaped area consisting of mostly steep, rugged terrain with deeply incised canyons and drainages, and vegetation that consists mostly of ponderosa pine-oak forest with some smaller areas of mixed conifer, and piñon-juniper at lower elevations. Areas of grassy meadow are mixed in throughout, including grassy parks in the floodplains of some drainage bottoms. There are several perennial streams within the canyons, with elevation changes of the Mogollon Rim area sometimes resulting in dramatic waterfalls during times of higher flows, and scenic riparian areas with associated vegetation.

Current Uses and Management:

- ROS Settings: Under alternatives 2, 3, and 5, this area is predominantly managed for a semi-primitive, non-motorized setting. There are very small areas of roaded natural settings along southern and eastern boundaries in all three alternatives.
- These recommended areas are almost entirely within Inventoried Roadless Area (IRA) in all three alternatives, and are therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- Very little management activity has occurred within the area mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Luna grazing allotment.

Table 15. Evaluated wilderness characteristics of the QG1 – Nolan North area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (Solitude) HIGH (Primitive Recreation)	9
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	HIGH	15.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.

- The Nolan North area is of a relatively small size, but is part of a larger contiguous area with an additional 2,100 acres of inventoried roadless area on the Apache-Sitgreaves side of the Arizona-New Mexico border. This in turn is overlapped by 2,656 acres of evaluated potential wilderness from their forest plan revision process completed in 2015.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The area composition of plant and animal communities that visibly appear to be natural for at least 90 percent of the area, and reflects very little management activity, especially the more inaccessible, rugged parts of the area.
- Current ecological conditions within the area reflect that much of the area overlays an existing Inventoried Roadless Area, with challenging terrain but with some management activity occurring, including past logging and vegetative treatments.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- For the relative size of the area, there are few range improvements, mostly consisting of fences crossing a small part of the area to the northeast and the south within Nolan North, and the boundary fences along the state line.
- Outside of hunting or antler gathering seasons the likelihood of encountering any other visitors is extremely low, providing very good opportunities for solitude.
- This is a remote, rugged and rarely visited area for most of the year, and finding solitude at most times is almost a certainty throughout the area.
- Throughout this relatively small area, there is a good core area to pursue a variety of activities, and there are few limitations to the types and pursuit of primitive recreation opportunities available.
- There is variability of terrain, some very challenging, and very few management restrictions to confine recreation pursuits.

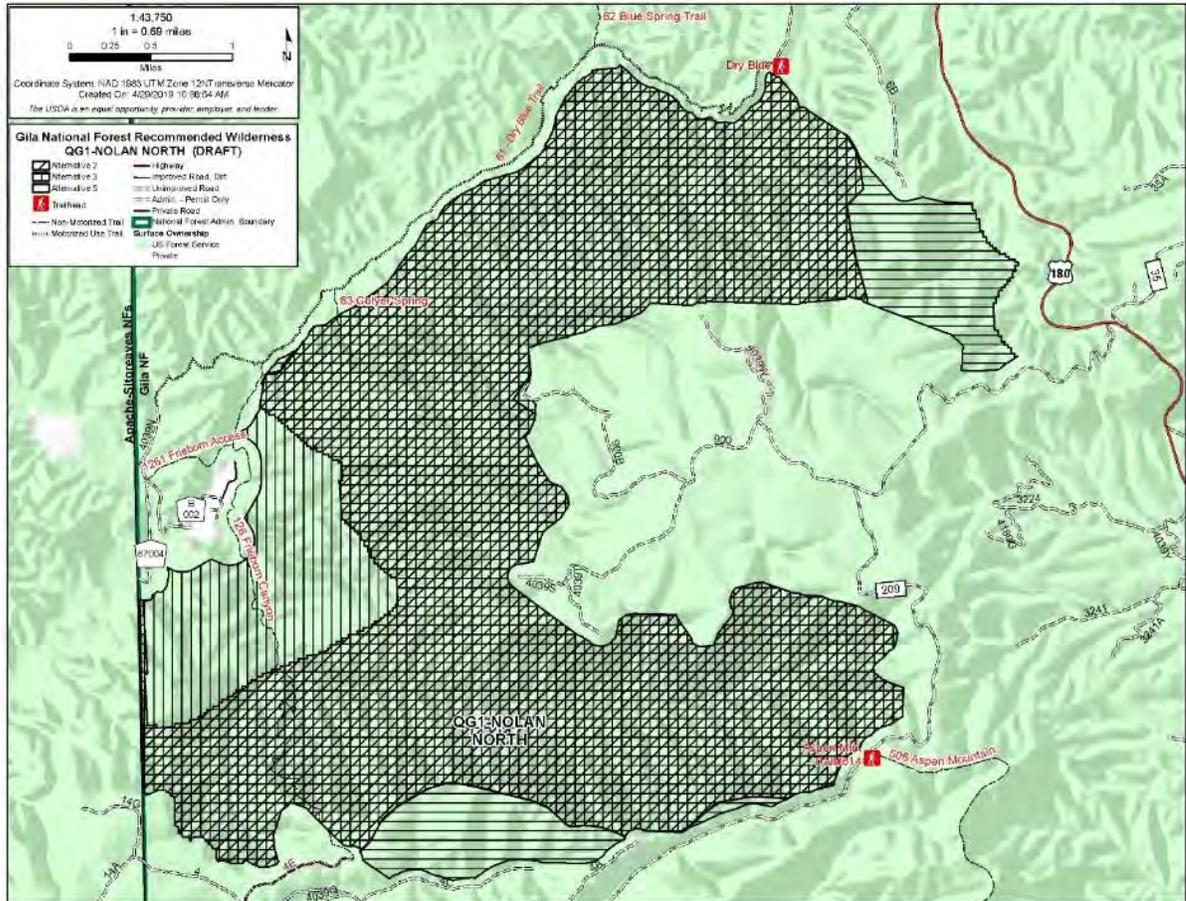


Figure 13. Recommended wilderness by alternative for QG1-Nolan North

QG2 – Nolan South

Alternative 5 - 4,404 acres, for detailed boundary locations see figure 14.

Location and Boundaries: The QG2 – Nolan South area is located in the southwestern region of the Quemado Ranger District, near the Blue River and at the edges of the Mogollon Rim, within Catron County New Mexico. Area boundaries predominantly coincide with the existing inventoried roadless area, with some adjustments to accommodate alternative analysis criteria.

General description: The character of the areas is fairly rugged terrain with vegetation that consists mostly of ponderosa pine-oak forest with some smaller areas of mixed conifer, and piñon-juniper at lower elevations. Because of this is Mogollon Rim country, there are some relatively flat, plateau areas with areas of grassy meadow mixed in throughout. This area is of a relatively small size considered on its own, but is part of a larger contiguous area, with an additional 2,100 acres of adjacent inventoried roadless area evaluated as potential wilderness from the Apache-Sitgreaves forest plan revision. The nearby Mother Hubbard and Aspen Mountain inventoried roadless areas within this relatively remote area are separated from Nolan North and South mostly by single forest roads.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive, non-motorized setting but with roaded natural settings along the south, east, and north boundaries.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore most of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Luna grazing allotment.

Table 16. Evaluated wilderness characteristics of the QG2 – Nolan South area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (SOLITUDE) HIGH (RECREATION)	8
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	11.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

- Nolan South is part of a larger contiguous area, with an additional adjacent 2,100 acres of inventoried roadless area evaluated as potential wilderness from the Apache-Sitgreaves forest plan revision. Their plan revision decision of whether to recommend it as wilderness deferred until the Gila makes a decision of whether to recommend Nolan South within its boundaries.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- For the relative size of the areas, there are few e improvements, mostly consisting of fences crossing the center of Nolan South, the boundary fence along the state line, and some earthen tanks.
- This is a very remote, rugged and rarely visited area for most of the year, and finding solitude at most times is almost a certainty throughout the area.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is extremely low, providing very good opportunities for solitude.
- Within this relatively small area there is a good sizeable core area to pursue a variety of activities, and there are few agency management limitations to the types and pursuit of primitive recreation opportunities available.

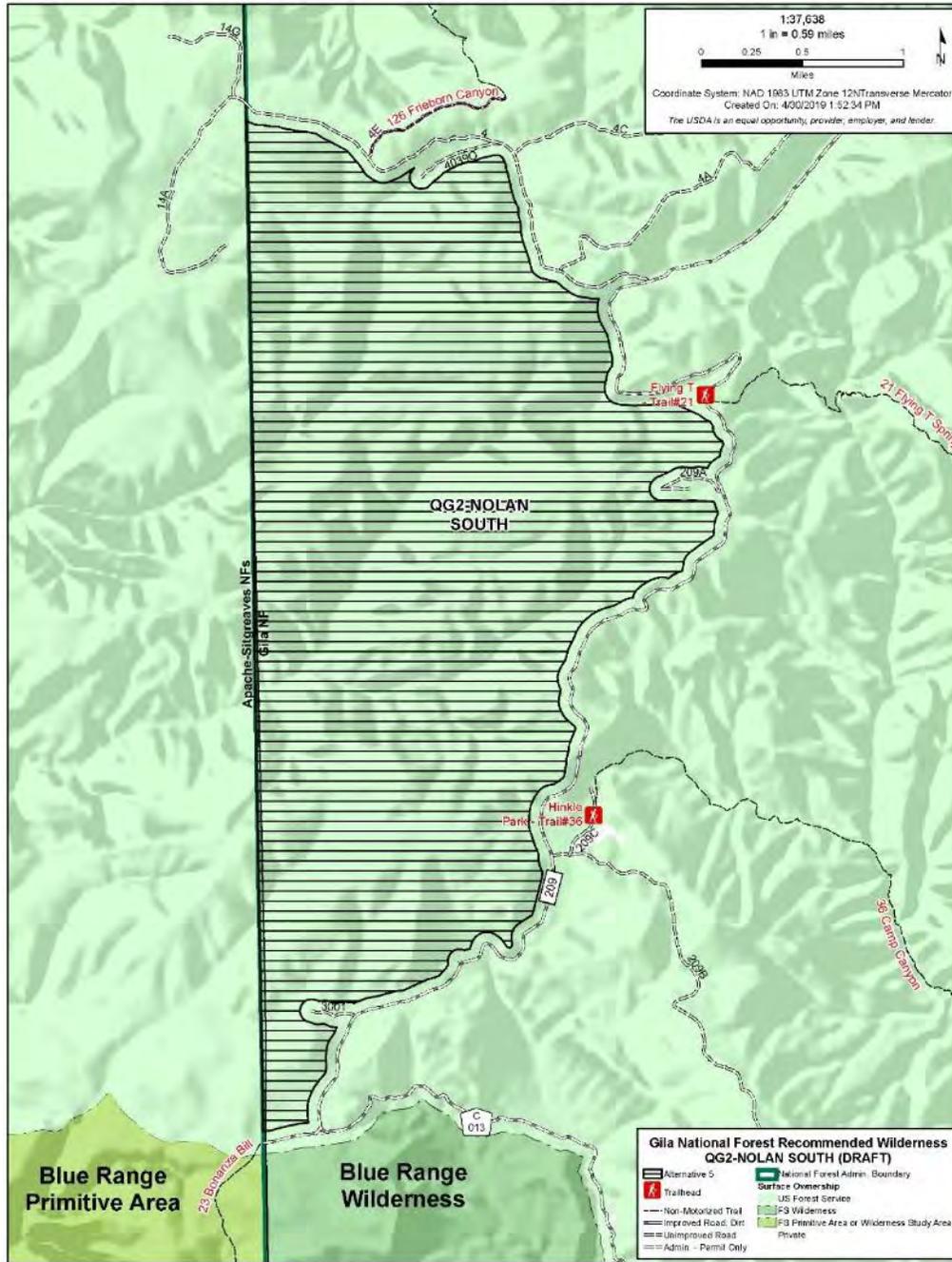


Figure 14. Recommended wilderness by alternative for QG2-Nolan South

QR1 – Upper Frisco Box

Alternative 5 - 36,691 acres, for detailed boundary locations see figure 15.

Location and Boundaries: The QR1 – Upper Frisco Box area is located in the south-central region of the Quemado Ranger District, and crosses boundaries into the north-central portion of the Reserve Ranger District and occurs within Catron County, New Mexico. Area boundaries are primarily determined by setbacks from forest system roads and defensible space for adjacent private property, but also with adjustments to exclude areas that were determined to not be manageable to protect wilderness characteristics.

General description: The Upper Frisco Box is a moderately large area that has as its centerpiece the Upper Frisco Box, a spectacularly scenic, and physically challenging slot canyon that is unique within the Gila region of New Mexico. Terrain is variable throughout the area, with some rolling relief, mesa tops, some high ridges, and deeply incised large canyons. The vegetation cover within the area consists of mostly piñon-juniper with ponderosa pine and mixed conifer in pockets on the north slopes of the higher ridges. The town of Reserve is located a few miles to the southeast of the area, and although neither is close to the boundary at any point, it is situated roughly between US HWY 180 to the west and southwest, and NM State HWY 12 on the southeast to east. There is an extensive system of trails providing access throughout the area, including through the Gila Box slot canyon

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with small areas near the boundaries of semi-primitive motorized and roaded natural settings.
- This area is mostly within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Centerfire, Cross V, Laney, and Black Bob grazing allotments.

Table 17. Evaluated wilderness characteristics of the QR1 – Upper Frisco Box area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	HIGH	3
Overall Rank of Wilderness Characteristics	HIGH	14.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including the Upper Frisco Box slot canyon, which is very unique to this area of New Mexico, and is an outstanding scenic and recreation feature of value. There are other opportunities for scenery throughout the area as well.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- For the large relative size of this area, there are few improvements.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is low, providing very good opportunities for solitude throughout much of the area.
- Throughout this relatively large area, there is a considerable amount of core area, trails for access, and there are few limitations to the types and pursuit of primitive recreation opportunities available. There is variability of terrain from mild to challenging, and few restrictions to confine recreation pursuits. The area also features recreation experiences unique to this part of New Mexico, with opportunities for very challenging slot-canyoneering within the Upper Frisco Box Canyon. There are currently few management restrictions on recreation pursuits as well.

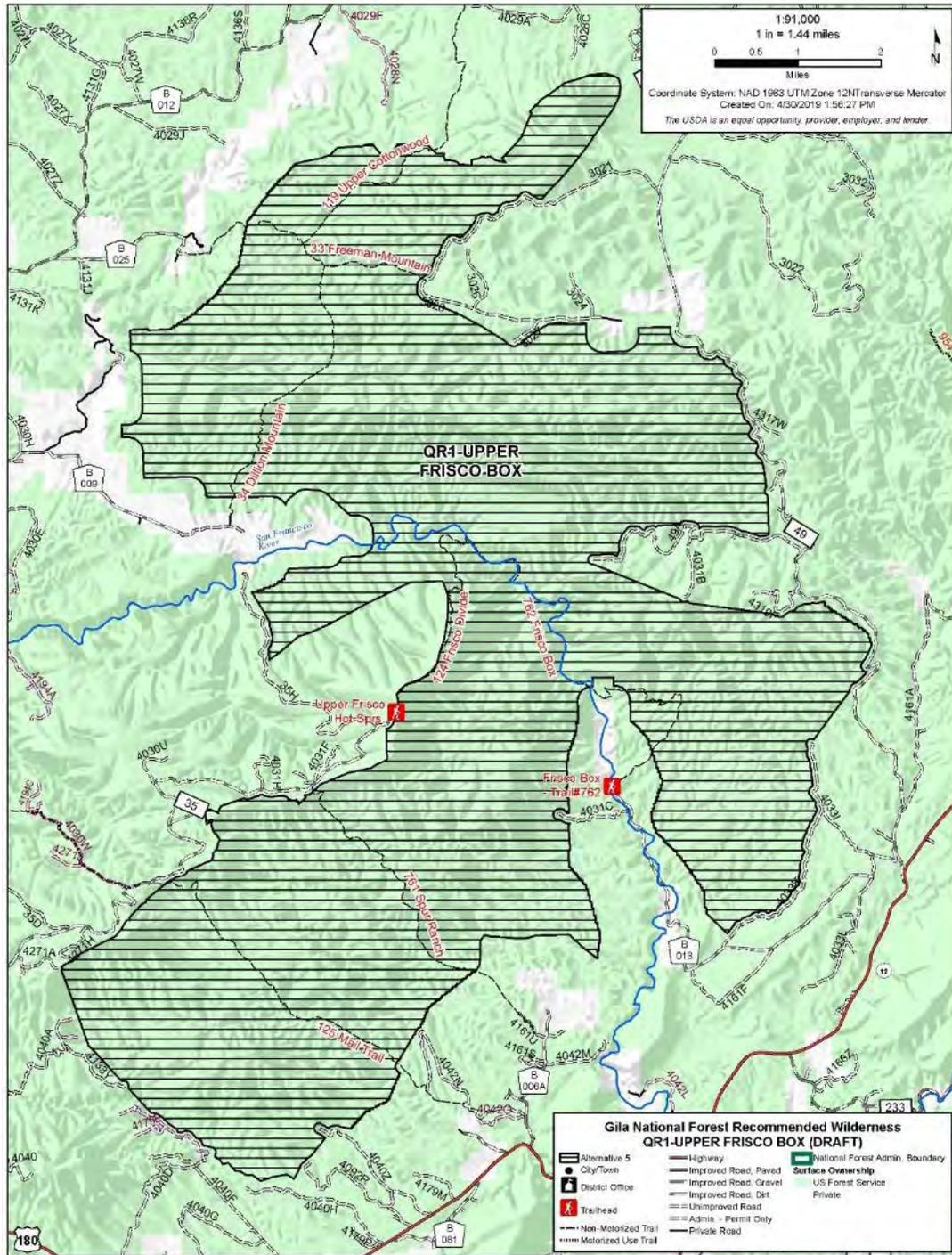


Figure 15. Recommended wilderness by alternative for QR1-Upper Frisco Box

QR2 – Upper Frisco Box East

Alternative 5 - 14,252 acres, for detailed boundary locations see figure 16.

Location and Boundaries: The QR2 – Upper Frisco Box East area is located in the south-central region of the Quemado Ranger District, and crosses district boundaries and most of the area is located in the north-central portion of the Reserve Ranger District. It is located within Catron County, New Mexico. Area boundaries are primarily determined by setbacks from forest system roads and defensible space for adjacent private property, but also with adjustments to exclude areas that were determined to not be manageable to protect wilderness characteristics.

General description: The Upper Frisco Box East is a moderately sized area. Terrain within the area is moderate to fairly rugged, and the vegetation cover is mostly piñon-juniper with ponderosa pine some areas, depending upon elevation and aspect.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with small areas near the boundaries of semi-primitive motorized and roaded natural settings.
- This area contains no Inventoried Roadless Area (IRA), and is therefore not currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the Cross V, Apache Canyon, and West Apache Creek grazing allotments.

Table 18. Evaluated wilderness characteristics of the QR2 – Upper Frisco Box East area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (RECREATION) MODERATE (SOLITUDE)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area, particularly in the southern half where there is less accessible terrain.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and concentrated in some locations, and their presence may impose limitations on the apparent naturalness of the area.

- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is fairly low, providing very good opportunities for solitude throughout much of the area.
- There are few limitations to the types and pursuit of primitive recreation opportunities available. There is variability of terrain from mild to challenging, and few restrictions to confine recreation pursuits.

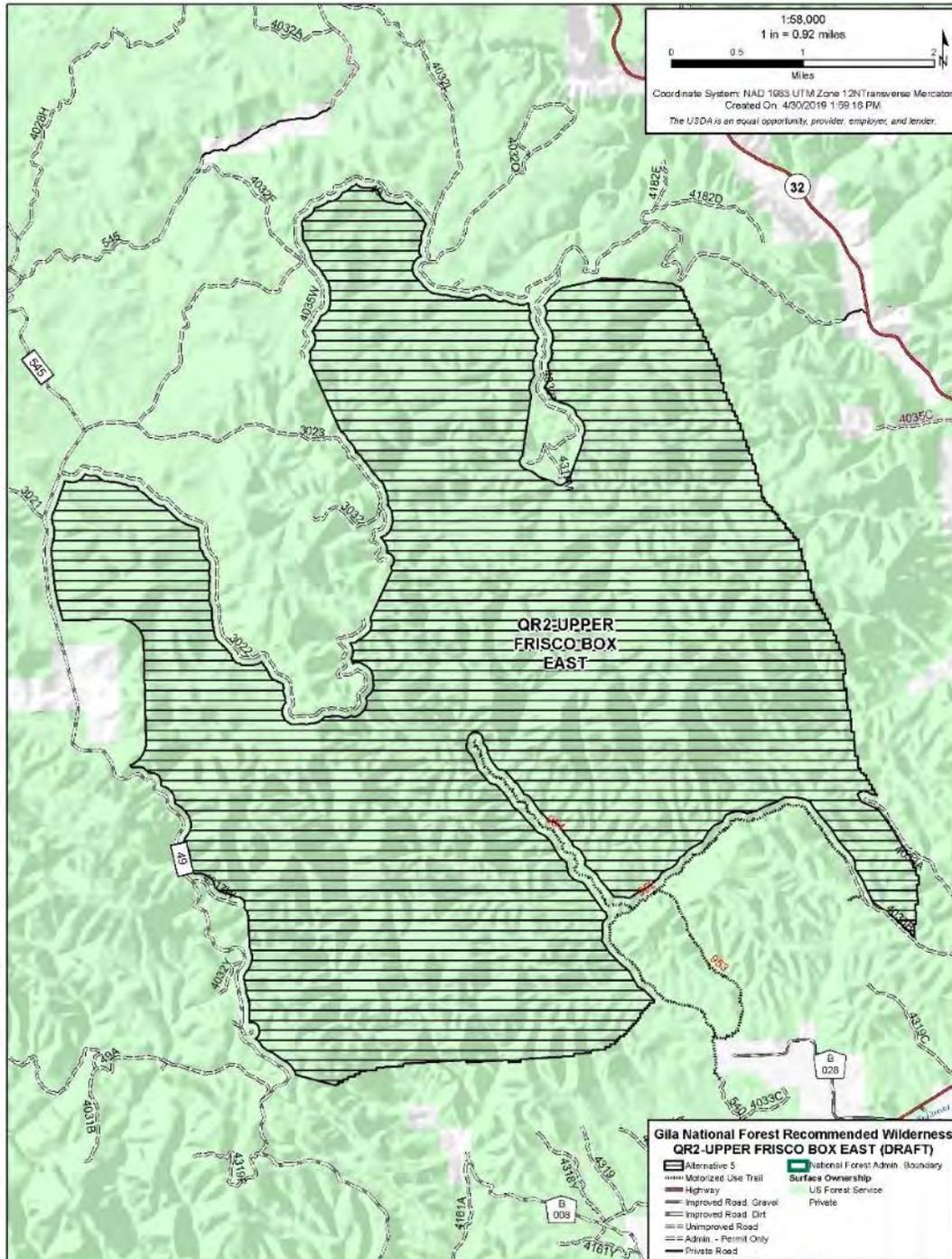


Figure 16. Recommended wilderness by alternative for QR2-Upper Frisco Box East area

R1 – Eagle Peak

Alternative 5 - 31,169 acres, for detailed boundary locations see figure 17.

Location and Boundaries: The R1 – Eagle Peak area is located in the southeastern region of the Reserve Ranger District, and occurs within Catron County, New Mexico. Area boundaries coincide with the inventoried roadless area, after adjustments were made to exclude inventoried areas that were determined to be not manageable to protect wilderness characteristics.

General description: Vegetation cover throughout this fairly large area is mostly piñon-juniper with ponderosa pine some areas, and some mixed conifer at higher elevations and north-facing slopes. It is a classic southwestern mountain forest regime, where vegetation cover is largely dependent upon elevation and aspect. There is some fairly rugged terrain in the southern portion, and the Eagle Peak lookout tower is located just outside the area boundary. The Continental Divide National Scenic Trail passes nearby, but does not pass through the area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with small areas of semi-primitive motorized and roaded natural, mostly along the north boundary of the area.
- This area is almost entirely within Inventoried Roadless Area (IRA), and therefore almost the entire area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Deep Canyon, Eagle Peak, and Negrito/Yeguas grazing allotments.

Table 19. Evaluated wilderness characteristics of the R1 – Eagle Peak area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (RECREATION) MODERATE (SOLITUDE)	7
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	11.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including quality scenery within Negrito Canyon and views of and from Eagle Peak.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, but is concentrated in some locations,
- Outside of hunting or antler gathering seasons there are some areas where likelihood of encountering other visitors is low, providing good opportunities for solitude throughout much of the area.
- Throughout this relatively large area, there is a lot of core area, trails for access, and there are few limitations to the types and pursuit of primitive recreation opportunities available. Eagle Peak is a popular side hike destination for Continental Divide Trail through-hikers. There is variability of terrain from mild to challenging, and few management restrictions to confine recreation pursuits.

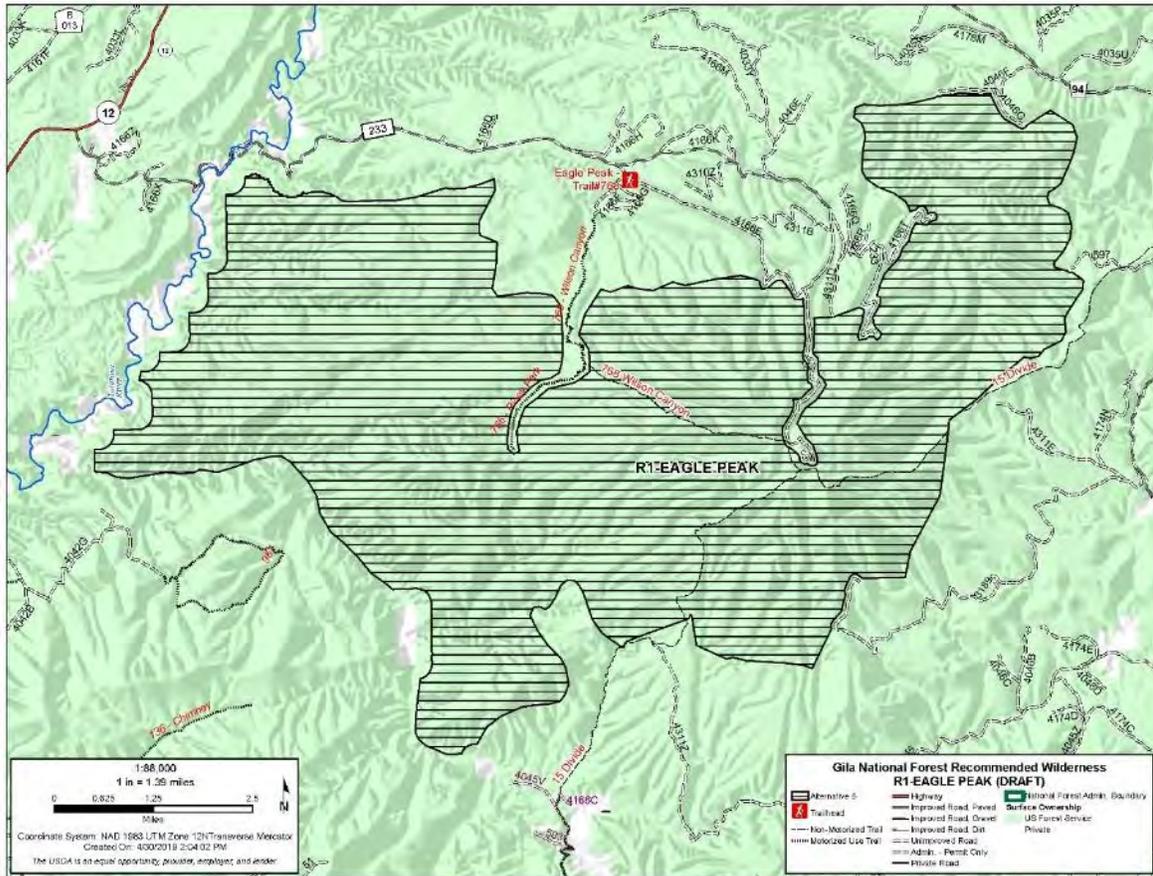


Figure 17. Recommended wilderness by alternative for R1-Eagle Peak

R3 – Moraga Canyon

Alternative 5 - 8,162 acres, for detailed boundary locations see figure 18.

Location and Boundaries: The R3 –Moraga Canyon is located on the eastern forest boundary and the eastern region of the Reserve Ranger District within Catron County, New Mexico. Area boundaries are primarily determined by setbacks from forest system roads and defensible space with private property boundaries, but with adjustments to exclude areas that were determined to not be manageable to protect wilderness characteristics.

General description: The character of the terrain is rolling hills and drainages, and the predominant vegetation cover is open grasslands with few trees (mostly piñon-juniper).

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this core of the area is managed as a semi-primitive non-motorized setting, with areas of semi-primitive motorized and roaded natural nearer to the area boundaries.
- None of this area is included within Inventoried Roadless Area (IRA), and therefore it is not currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the Y Canyon grazing allotment.

Table 20. Evaluated wilderness characteristics of the R3 – Moraga Canyon area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	10.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- The area consists primarily of open, rolling grassland that may provide ideal pronghorn habitat, and this type of open, rolling grasslands are an underrepresented vegetation type within existing wilderness on the forest.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Recent management projects were undertaken with the intention of opening a wildlife migration corridor from the Plains of San Agustin to Collins Park for encouraging migration of pronghorn into this part of the forest.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and may be concentrated in some locations.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors in the Moraga Canyon area is relatively low, providing moderate opportunities for solitude.
- There are few limitations to the types and pursuit of primitive recreation opportunities available.

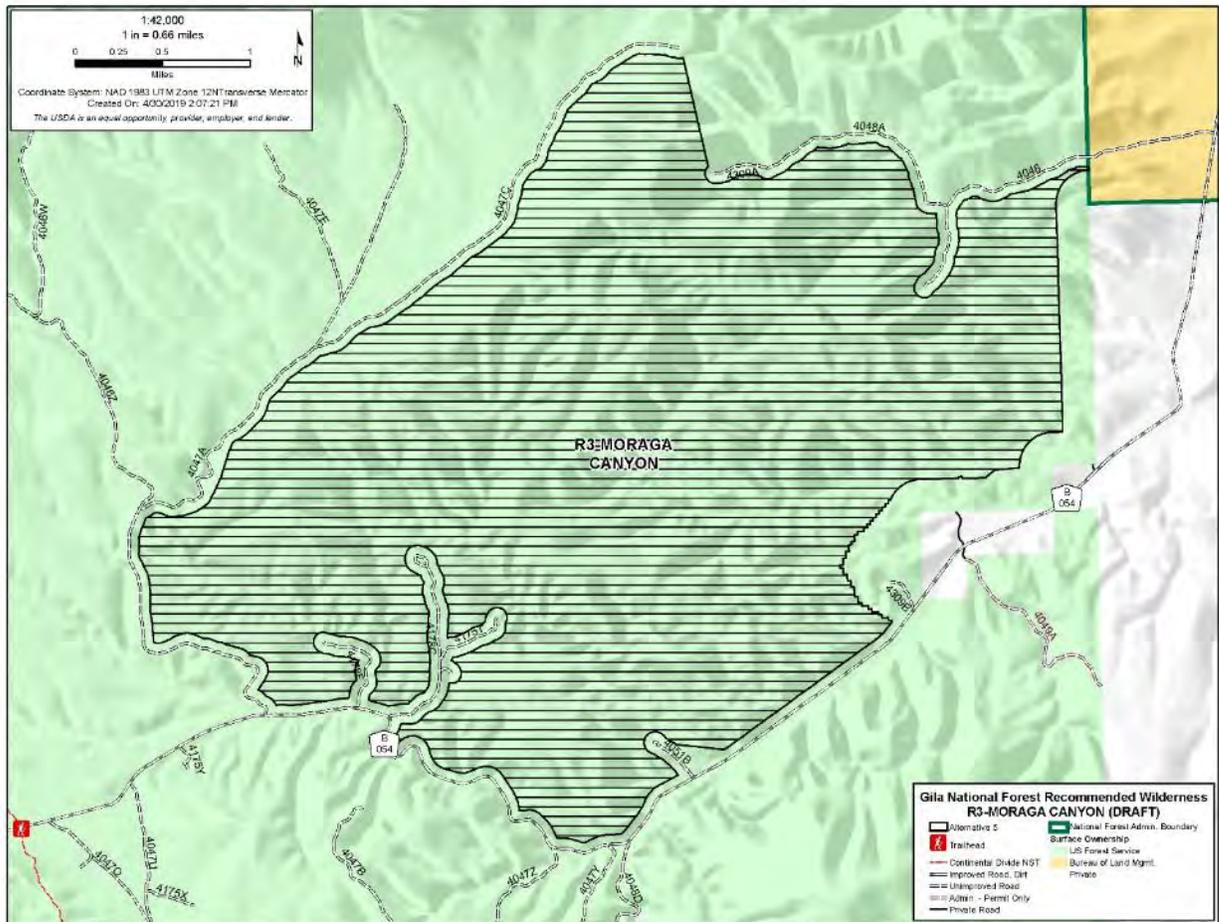


Figure 18. Recommended wilderness by alternative for R3-Moraga Canyon

R4 – O-Bar-O Mountain

Alternative 5 – 8,162 acres, for detailed boundary locations see figure 19.

Location and Boundaries: The R4 – O-Bar-O area is located in the eastern region of the Reserve Ranger District, within Catron County, New Mexico. Area boundaries are primarily determined by setbacks from forest system roads and defensible space with private property and other ownership boundaries, and the forest boundary, but with adjustments made in some areas to exclude locations that were determined to not be manageable to protect wilderness characteristics.

General description: This a moderately large area that is located on the eastern forest boundary. There is variable terrain throughout the area, including two high elevation areas at O-Bar-O Mountain and Salvation Peak. The vegetation cover throughout the area is primarily piñon-juniper, with ponderosa pine at higher elevations, and open grasslands at lower elevations. A section of the Continental Divide National Scenic Trail passes through this area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with areas of roaded natural along the north and south boundaries and semi-primitive motorized along eastern boundary areas.
- This area is not within any Inventoried Roadless Area (IRA), and is not currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the Y Canyon and O-Bar-O grazing allotments.

Table 21. Evaluated wilderness characteristics s of the R4 – O-Bar-O Mountain area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	6
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	12

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- The area contains rolling grassland that may make ideal pronghorn habitat and are an underrepresented vegetation type within wilderness on the forest.
- The Continental Divide National Scenic Trail passes through the area.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.

- Rolling grasslands may make ideal pronghorn habitat, and vegetation treatments within the area have been with intention of opening a wildlife corridor from the Plains of San Agustin to Collins Park for encouraging migration of pronghorn into the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The large size of the area provides a good core area for solitude opportunities, and outside of hunting or antler gathering seasons the likelihood of encountering other visitors is low in most areas except along the Continental Divide National Scenic Trail.
- This is a relatively large area with a great deal of variable terrain, and trail opportunities on the Continental Divide Trail, there is a sizeable core area, very few range fences and improvements, and there are few limitations to the types and pursuit of primitive recreation opportunities available.

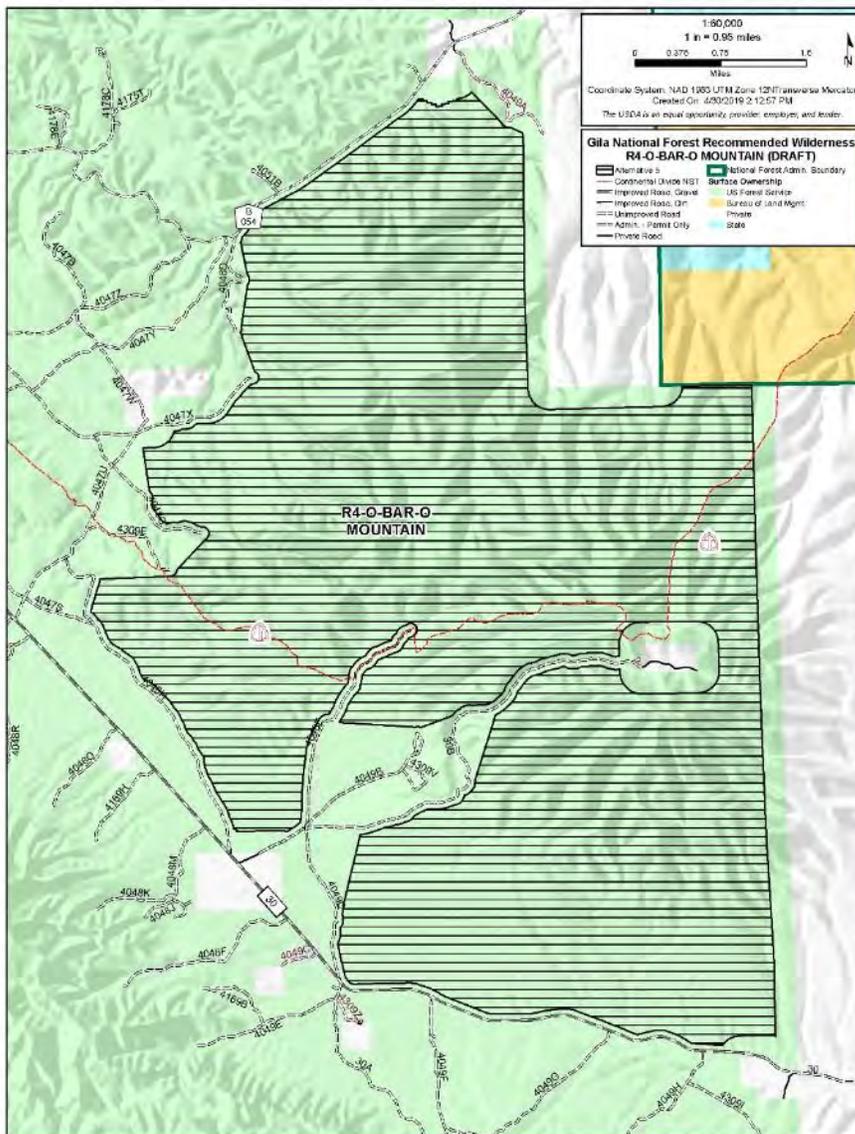


Figure 19. Recommended wilderness by alternative for R4-O-Bar-O Mountain

R9 – Wagon Tongue

Alternative 5 - 11,463 acres, for detailed boundary locations see figure 20.

Location and Boundaries: The R9 – Wagon Tongue area is moderately sized and located in the northeastern part of the Reserve Ranger District within Catron County, New Mexico. Area boundaries are primarily determined by setbacks from forest system roads and defensible space with private property and other ownership boundaries, and the forest boundary, but with adjustments made in some areas to exclude locations that were determined to not meet inventory criteria.

General description: Terrain in this area is moderate to very rugged with canyons, ridges and mountains, including Wagon Tongue Mountain. Vegetation cover is classic southwestern mountains mix, with primarily piñon-juniper and ponderosa pine but also mixed conifer on north-facing slopes and at higher elevations. A section of the Continental Divide National Scenic Trail passes through this area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with some areas of semi-primitive motorized settings along area boundaries, and a very small area of roaded natural on the east boundary.
- This area is mostly within Inventoried Roadless Area (IRA), and is therefore this portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Govina and Dark Canyon grazing allotments.

Table 22. Evaluated wilderness characteristics of the R9 – Wagon Tongue area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	11.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Largely due to remoteness of the area’s location and lack accessibility, the current composition of plant and animal communities and current ecological conditions reflect that there has been very little management activity occurring within the area

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- This is a fairly remote region of the forest, and not as easily accessed by those unfamiliar with the area. Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is exceptionally low except along the Continental Divide National Scenic Trail.
- The area features variable terrain, and trail opportunities on the Continental Divide Trail, combined with sizeable core areas for primitive recreation.

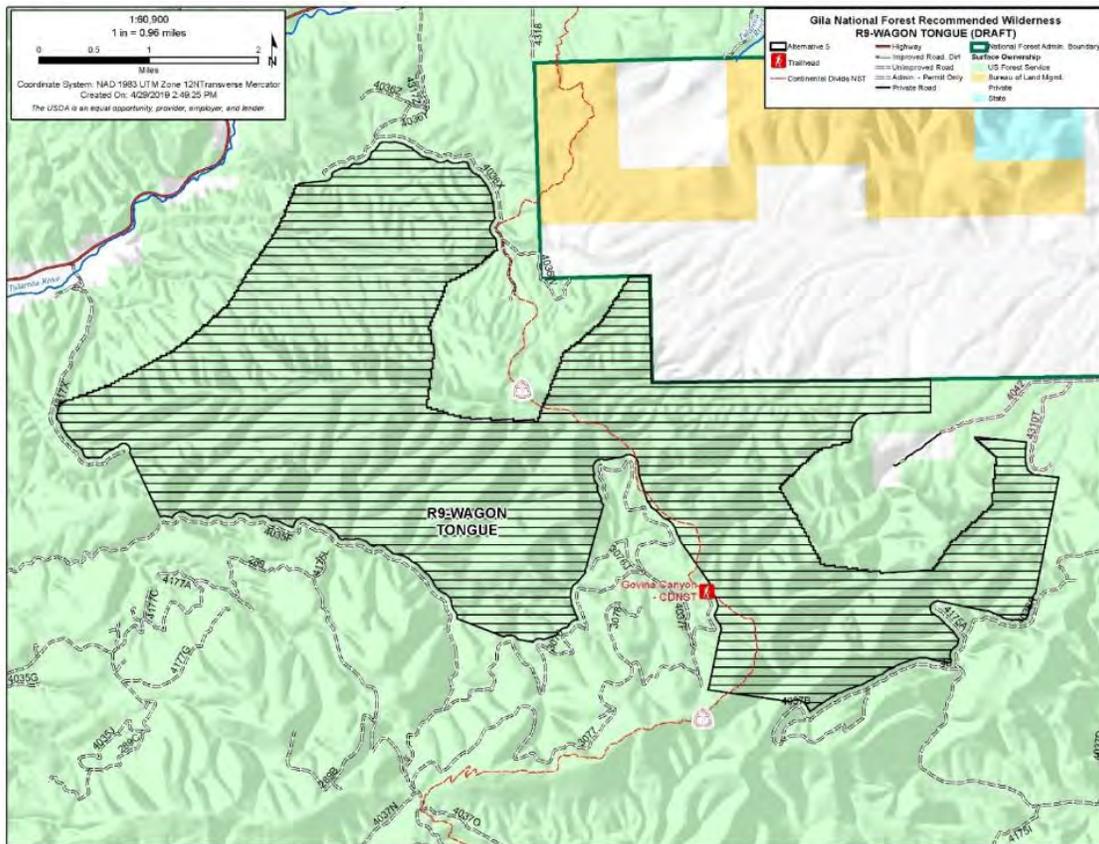


Figure 20. Recommended wilderness by alternative for R9-Wagon Tongue

R10a – Gila Addition North Reserve

Alternative 3 - 536 acres, alternative 5 - 536 acres, for detailed boundary locations see figure 21.

Location and Boundaries: R10a – Gila Addition North Reserve is a small area located adjacent to Aeroplane Mesa Campground adjacent to the Gila Wilderness boundary in the south portion of the Reserve Ranger District, within Catron County, New Mexico. The area boundaries generally consist of setbacks from forest roads to the north, and shared boundaries with the Gila Wilderness, of which it would become an addition if designated, to the south.

General description: This is a very small area of moderate to somewhat steep terrain sandwiched between the existing wilderness boundary and forest roads.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as roaded natural settings, with some areas of semi-primitive non-motorized.
- This area is entirely within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the T-Bar grazing allotment.

Table 23. Evaluated wilderness characteristics of the R10a – Gila Addition North Reserve area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICEINT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE(BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3 and 5.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- There are no limitations to the types and pursuit of primitive recreation opportunities available.

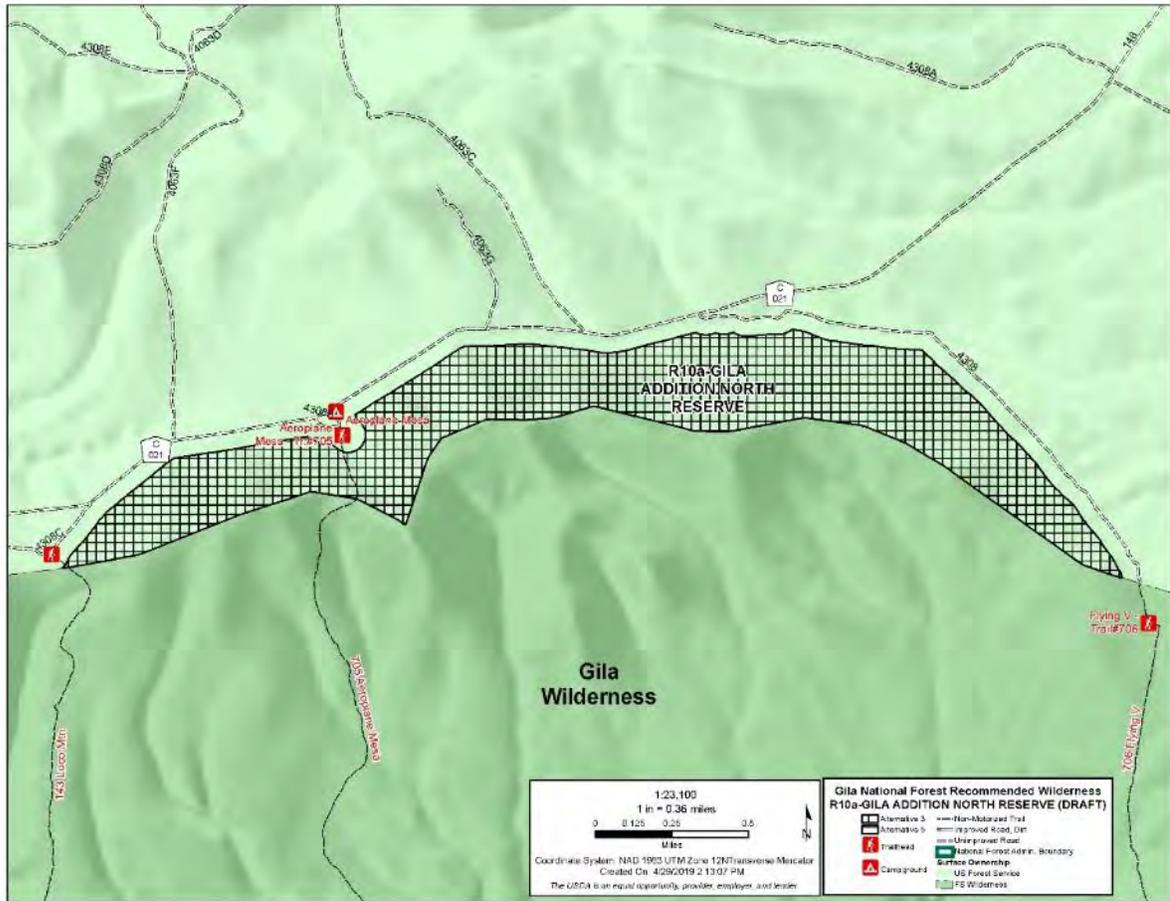


Figure 21. Recommended wilderness by alternative for R10a-Gila Addition North Reserve

R10b – Gila Addition North Reserve

Alternative 3 - 657 acres, alternative 4 - 207 acres, alternative 5 - 657 acres, for detailed boundary locations see figure 22.

Location and Boundaries: R10b – Gila Addition North Reserve is located generally south of Snow Lake and adjacent to the north boundary of the Gila Wilderness, in the southern portion of the Reserve Ranger District, Catron County, New Mexico. Area boundaries generally coincide with the inventoried roadless area boundaries, with some adjustments to exclude areas not manageable to protect wilderness characteristics and substantially noticeable improvements. The area would become an addition to the existing Gila Wilderness if it were to be designated by Congress.

General description: This is a very small area of moderate to somewhat steep terrain located in the general vicinity of Snow Lake Dam and the headwaters of the Middle Fork Gila River. The Snow Lake Trail also passes through this area.

Current Uses and Management:

- ROS Settings: Under all three alternatives it is recommended in, this area is predominantly managed as a semi-primitive, motorized and roaded natural settings, with a very small area of semi-primitive non-motorized.
- This area is entirely within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the T-Bar grazing allotment.

Table 24. Evaluated wilderness characteristics of the R10b – Gila Addition North Reserve area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICEINT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE(BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3, 4, and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appear to be natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- There are moderate opportunities for solitude as compared with the adjacent wilderness; however, there are no limitations to the types and pursuit of primitive recreation opportunities available, beyond those normally applied to national forest lands.

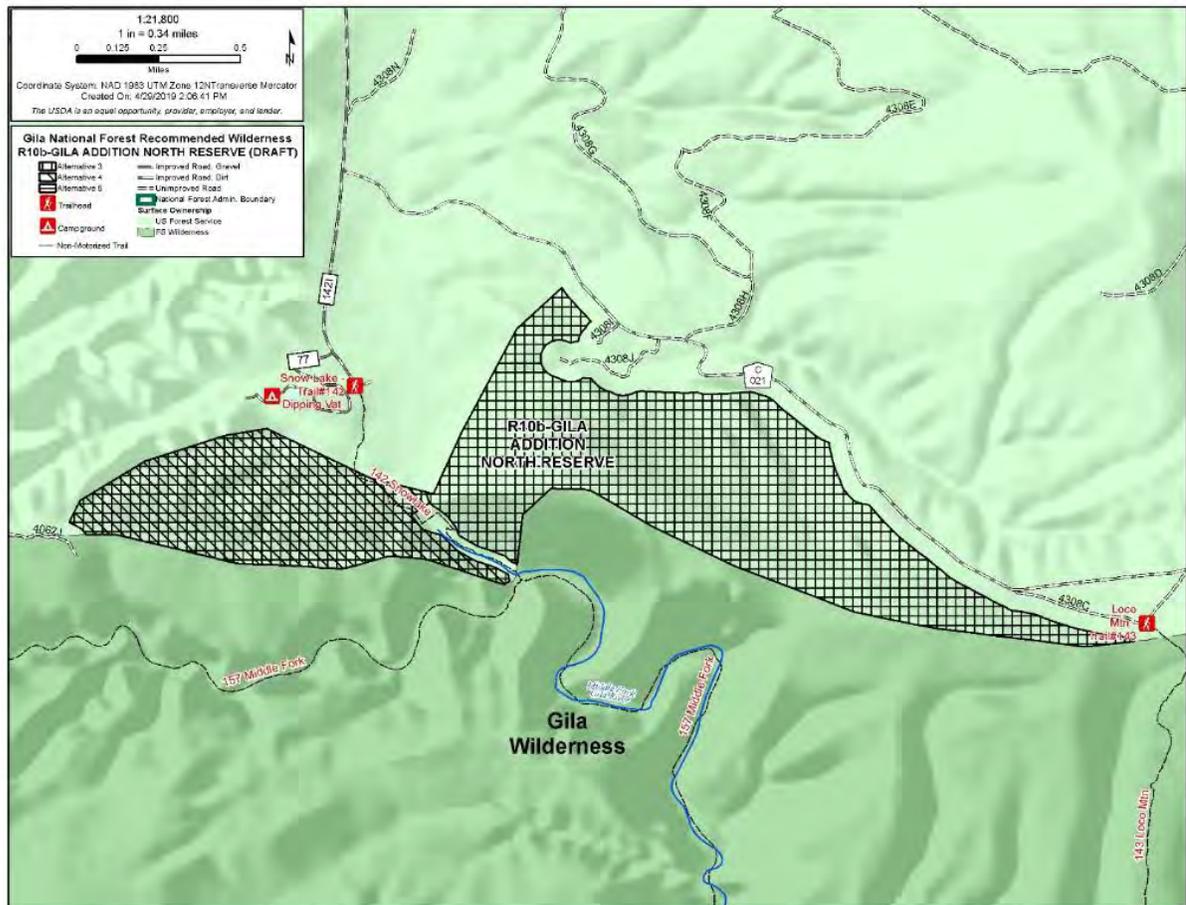


Figure 22. Recommended wilderness by alternative for R10b-Gila Addition North Reserve

RB1 – East Elk Mountain

Alternative 5 - 8,924 acres, for detailed boundary locations see figure 23.

Location and Boundaries: The RB1 – East Elk Mountain area is located in the southeastern region of the Reserve Ranger District, and crosses boundaries so that a very small part off the area is located in the northeastern portion of the Black Range Ranger District and is within Catron County, New Mexico. Area boundaries are primarily determined by setbacks from forest system roads, defensible space with private property, and the forest boundary.

General description: This is a relatively small area with terrain that varies from mild to challenging, with rolling grasslands and steep mountain slopes. Terrain is particularly rugged in the vicinity of East Elk Mountain, gradually becoming less so until turning to rolling hills and changing from forest to grasslands. Vegetation cover is mostly piñon-juniper with ponderosa pine and mixed conifer in some areas, generally depending upon elevation and aspect.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, the core area is managed as a semi-primitive non-motorized setting, but with substantial areas of semi-primitive motorized around the area boundaries.
- None of this area is within Inventoried Roadless Area (IRA), and therefore none of the area is currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the O-Bar-O and Black Mountain grazing allotments.

Table 25. Evaluated wilderness characteristics of the RB1 – East Elk Mountain area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	10

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and concentrated in some locations.
- Outside of hunting and antler gathering seasons the likelihood of encountering other visitors is fairly low in this area, providing good opportunities for solitude, and there are few limitations to the types and pursuit of primitive recreation opportunities available.

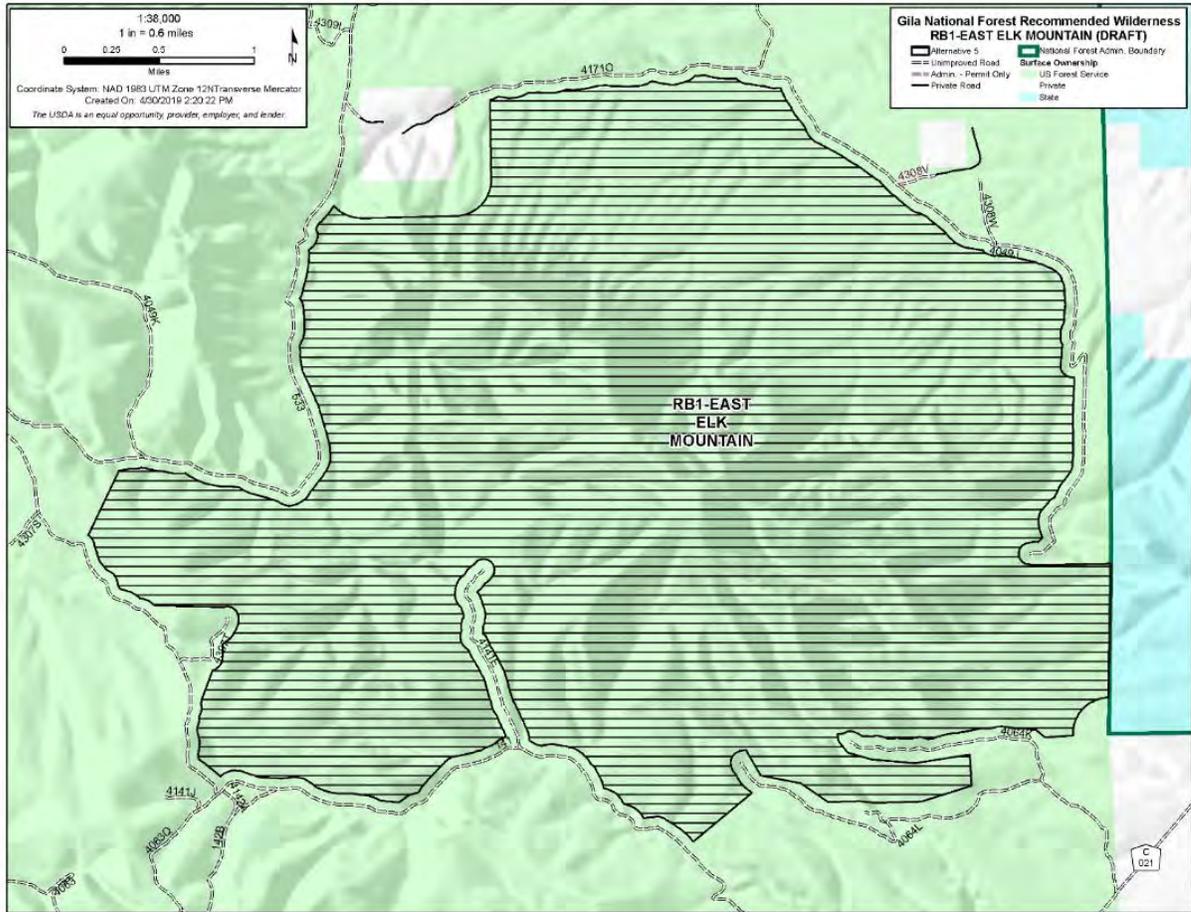


Figure 23. Recommended wilderness by alternative for RB1-East Elk Mountain

RG1 – Aspen Mountain

Alternative 2 - 19,053 acres, alternative 5 - 21,895 acres. For detailed boundary locations, see figure 24.

Location and Boundaries: The Aspen Mountain recommended area is located in the northwestern portion of the Glenwood Ranger District within Catron County, New Mexico. It is oriented close to the existing Blue Range Wilderness, separated forest system road. Southern and western boundaries are generally buffered from roads, though in some instances incorporate range fences. In alternative 2, the boundary is adjusted to exclude the area west of the Saddle Mountain Lookout, incorporating range fences to the east of the access road and tying in to the south boundary using a combination of range fence and the natural contours of the terrain.

General description: This is a moderately large area, with variable vegetation cover that is a classic example of southwestern mountain forests, mostly piñon-juniper at lower elevations varied with ponderosa pine and mixed conifer, depending upon elevation and aspect. Terrain is steep throughout much of the area, and features scenic escarpments in the vicinity of the several mountain peaks and deep canyons, but with milder terrain near Pueblo Park Campground the south central boundaries.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting. There are small areas of roaded natural settings along southern and northwestern boundaries, and a very small area of semi-primitive motorized to the southwest and northeast. Under alternative 5, there is additional area of roaded natural on the southwest and west boundaries, and additional semi-primitive motorized management to both the southwest and northeast
- This area is almost entirely within Inventoried Roadless Area (IRA) under both alternatives, and is therefore currently managed to protect roadless characteristics
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Luna and Leggett grazing allotments

Table 26. Evaluated wilderness characteristics of the RG1 – Aspen Mountain area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (Both)	7
Step 5 – Other Features of Value	MODERATE	2
Overall Rank of Wilderness Characteristics	OUTSTANDING	16

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2 and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.
- Other Features of Value are present within the area, including a concentration of prehistoric sites at Pueblo Park that are a notable heritage resource
- There is dramatic scenery – views into the Blue Range Wilderness’ Tige Rim area in particular, as well as the dramatic escarpments and views areas within the Aspen Mountain area – including Chimney Rock.
- The area also contains a small amount of Ponderosa Pine – Willow ERU, which is currently an under-represented vegetation type within designated areas on the Forest.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Because of limited access of the area’s roadless character and difficult terrain, there have been few management actions beyond limited permitted grazing. The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.
- Although historic and current fire suppression within the area may affect fire regimes, ecological conditions reflect only minor modern human land management activities, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Not a lot of range improvements or fences throughout, especially in context of the size of the area. There are cherry stem roads to the northeast that were excluded.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is low, providing good opportunities for solitude throughout much of the area, with the western portion providing high opportunities.
- Throughout this moderately large-sized area, there are few limitations to the types and pursuit of primitive recreation opportunities available, including good non-motorized trail use opportunities accessing much of the area.
- There is variability of terrain from mild to challenging, with steep mountain slopes, long ridgelines, and deep canyons. There are few management restrictions to confine recreation pursuits.

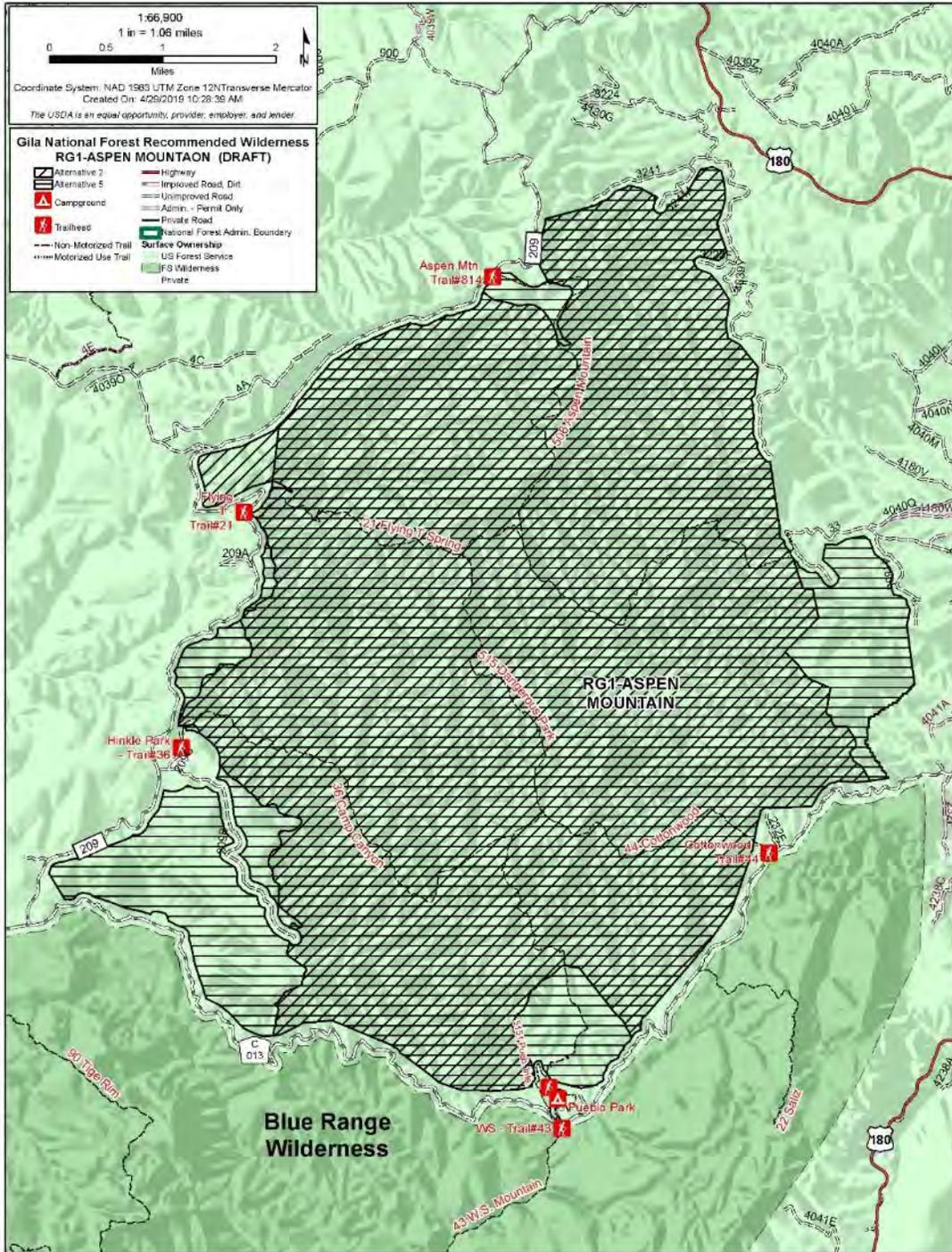


Figure 24. Recommended wilderness by alternative for RG1-Aspen Mountain

RG2 – Devil’s Creek

Alternative 5 - 43,383 acres, for detailed boundary locations see figure 25.

Location and Boundaries: The RG2 – Devil’s Creek area is located in partly in the southwestern region of the Reserve Ranger District and crosses boundaries with approximately half located in the northwestern portion of the Glenwood Ranger District, west of US 180 and generally west, northwest of Cosmic Campground, and generally southeast of the town of Reserve within Catron County, New Mexico. Area boundaries are similar in alignment to inventoried roadless area boundaries, but vary due to setbacks from forest roads, setback for defensible space adjacent to private property ownership, and exclusion of areas determined to be not manageable to protect wilderness characteristics.

General description: The Devil’s Creek area is a very large region of deeply incised canyons located along the San Francisco River and many of its tributaries. There is mostly rugged terrain throughout and erosive soils leading down into the canyon from the Devil’s Park area. The vegetation cover is primarily piñon-juniper, with stringers of ponderosa pine, depending upon elevation and aspect. The terrain is steep and features scenic views of the San Francisco River, and lies immediately adjacent to Cosmic Campground International Dark Sky Sanctuary, which has been recognized as the first International Dark Sky Sanctuary located on National Forest System lands and also in North America. International Dark Sky Sanctuaries are lands possessing an exceptional or distinguished quality of starry nights. This status would indicate that the Devil’s Creek area possesses similar dark sky characteristics.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, but with some areas of semi-primitive motorized along some area boundaries, and very small areas of roaded natural to the east and northwest.
- The majority of this area is within Inventoried Roadless Area (IRA), and is therefore, this portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Leggett, Frisco Plaza, Negrito/Yeguas, Kelly, Devil’s Park, Alma, and Deep Creek grazing allotments.

Table 27. Evaluated wilderness characteristics of the RG2 – Devil’s Creek area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	MODERATE	2
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	13

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including exceptional scenic values within the San Francisco River corridor, including tributaries – and secluded Saliz Canyon in particular. The area contains a concentration of prehistoric sites that represents a notable heritage resource. The area is adjacent to the Cosmic Campground Dark Sky Sanctuary. The area also contains a small amount of the Desert Willow ERU, which is currently under-represented within Gila National Forest designated areas.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Current ecological conditions reflect that there has been management activity occurring within the area, but only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and may be concentrated in some locations.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is low, providing good overall opportunities for solitude throughout much of the area, with the south portion providing better quality opportunities than areas in the north.
- Throughout this relatively large-sized area, there are few limitations to the types and pursuit of primitive recreation opportunities available. There is variability of terrain from mild to challenging, water recreation along the river and its tributaries, and deep canyons.

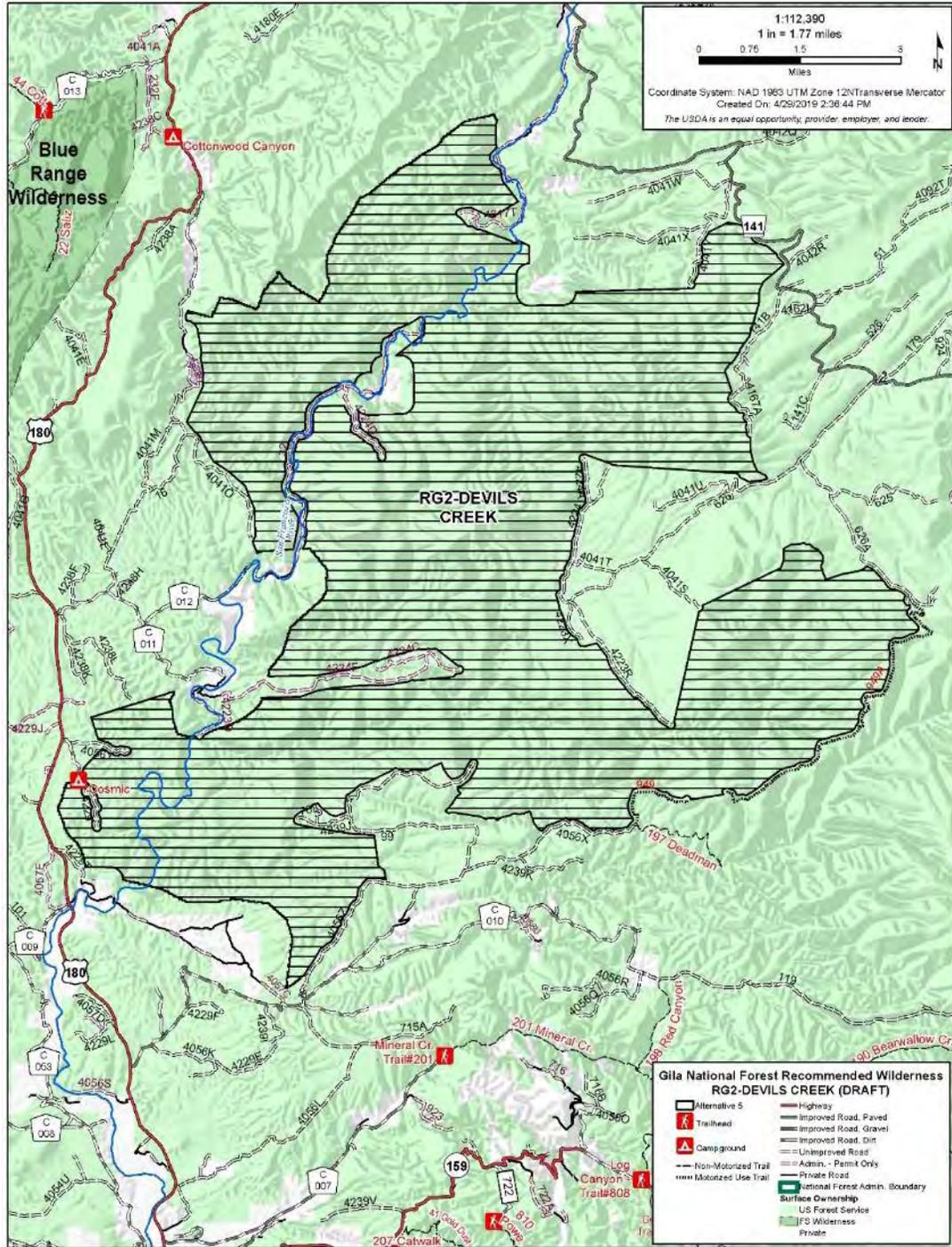


Figure 25. Recommended wilderness by alternative for RG2-Devil's Creek

RG4 – North Mogollon Mountains

Alternative 5 - 20,398 acres, for detailed boundary locations see figure 26.

Location and Boundaries: The RG4 – North Mogollon Mountains area is located in partly in the southwestern region of the Reserve Ranger District and crosses boundaries with approximately half of the area is located north, northwest of the Bear wallow Mountain Lookout in the northwestern portion of the Glenwood Ranger District in Catron County, New Mexico. Hogan, Claremont, and Waterman Cabins are all located just outside the area boundaries on the southeast. Area boundaries are generally determined by setbacks from forest roads, and defensible space adjacent to private property ownership to the southeast.

General description: This is an area of mostly rugged, mountainous terrain with variable vegetation cover that is a classic example of southwestern mountain forests, mostly piñon-juniper at lower elevations varied with ponderosa pine and mixed conifer, depending upon elevation and aspect.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, but with a core area of primitive setting. There are areas of semi-primitive motorized settings along area boundaries, and two very small roaded natural areas.
- This area is located mostly within Inventoried Roadless Area (IRA), and is therefore these portions of the area are currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Deep Creek and Copper Creek grazing allotments.

Table 28. Evaluated wilderness characteristics of the RG4 – North Mogollon Mountains area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	12

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and mostly concentrated in some locations.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors during other times of the year is low, providing good overall opportunities for solitude throughout much of the area.
- Deep Creek is a mostly perennial stream for water-based primitive recreation. Throughout this moderately large-sized area, there are few limitations to the types and pursuit of primitive recreation opportunities available.

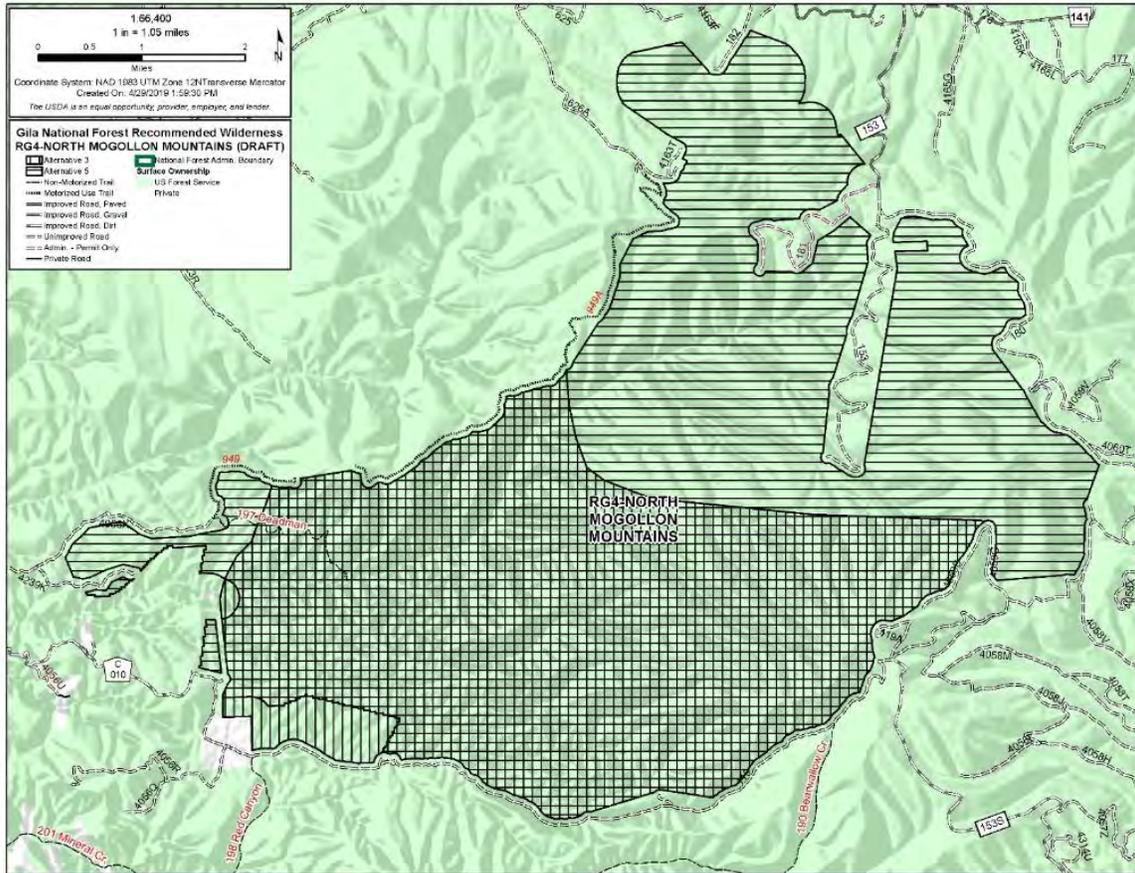


Figure 26. Recommended wilderness by alternative for RG4-North Mogollon Mountains

G1 – Mineral Creek

Alternative 2 - 16,538 acres, alternative 3 - 16,540 acres, alternative 5 - 16,848 acres for detailed boundary locations see figure 27.

Location and Boundaries: The G1 – Mineral Creek area is located in the northwestern portion of the Glenwood Ranger District, within Catron County, New Mexico. Area boundaries to the north, east, and south are determined by buffers from forest system roads, and in some instances buffers from range fences. The west boundary varies between alternatives, determined by a combination of buffers from defensible space for private properties, wildland urban interface, and following natural features.

General description: Mineral Creek is a moderately sized area of rugged terrain with of deeply incised canyons, ridgelines, and mountain peaks. The vegetation cover is primarily piñon-juniper, with stringers of ponderosa pine, aspen, and mixed conifer depending upon elevation and aspect. Much of the area was affected by the Whitewater Baldy fire.

Current Uses and Management:

- ROS Settings: Under all three alternatives it is recommended in, this area is predominantly managed as for primitive and semi-primitive non-motorized settings, though there are small areas of roaded natural along the southern and eastern boundaries (and for alternative 5, along the west boundary) and small areas of semi-primitive motorized setting along the north boundary.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics in alignment with law, policy and regulation.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- Very little management activity has occurred within the area mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is partly within the Copper Creek grazing allotment.

Table 29. Evaluated wilderness characteristics of the G1 – Mineral Creek area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	OUTSTANDING	9.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (Both)	10
Step 5 – Other Features of Value	OUTSTANDING	4
Overall Rank of Wilderness Characteristics	OUTSTANDING	23.3

Factors considered and process used to determine recommendation:

- This area was ranked as OUTSTANDING in the evaluation of wilderness characteristics, and meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria
- Other Features of Value are present within the area, including a great deal of visible mining history, outstanding geologic features, exceptional scenery, and provides quality representation of a lot of plant communities
- Manageability to protect wilderness characteristics is possible due to the moderately large size of this area, the rugged terrain, location, manageable boundaries, and lack of known existing legal rights or uses conflicts.
- There are few private inholdings and cherry-stem motorized routes, and the area's size, terrain and configuration allow for a sufficient core areas to protect wilderness characteristics.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural throughout the area. This reflects very little active management activity occurring within the area, including vegetation treatments and permitted grazing of livestock.
- The area has never been logged, and there is nearly non-existent evidence of any type of modern human land management activity throughout.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, do not detract from the apparent naturalness of the area, do not appear modern, and they contribute significantly to the historical character and cultural context of the area including a few broken down historic cabins
- There are not a lot of range improvements or fences for the size of the area. Steep slopes have limited impacts of human development
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is exceptionally low
- Terrain, vegetation cover, and low use throughout the area all contribute to excellent opportunities for solitude
- There are few limitations to the types and pursuit of primitive recreation opportunities available. Lots of good non-motorized trail opportunities
- The Gila Native Plant Society, Western New Mexico University, and Aldo Leopold High School all make use this area for its excellent environmental education purposes

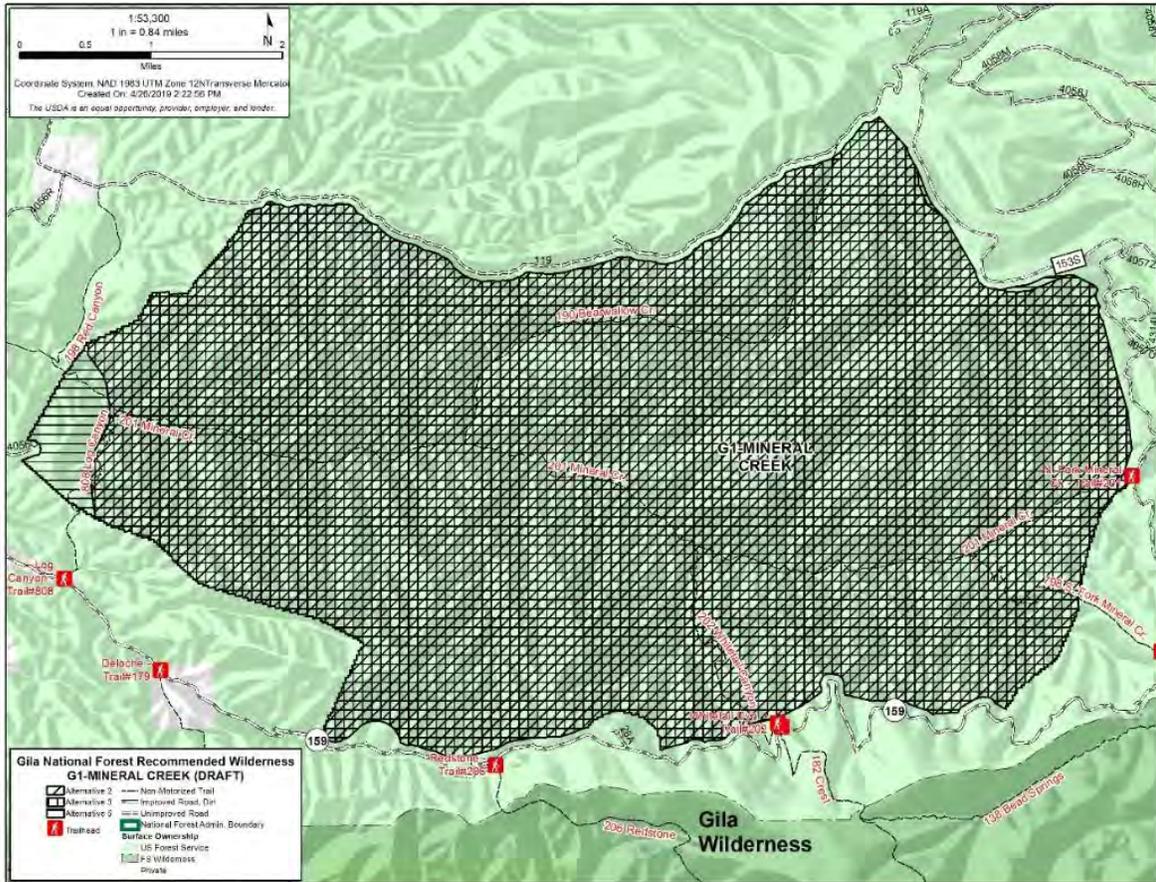


Figure 27. Recommended wilderness by alternative for G1-Mineral Creek

G3 – Gila Rain Creek Addition

Alternative 3 - 374 acres, alternative 4 - 923 acres, alternative 5 - 1,095 acres, for detailed boundary locations see figure 28.

Location and Boundaries: G3 – Gila Rain Creek is located in the central region of the Glenwood Ranger District directly on the western boundary of the Gila Wilderness, within Catron County, New Mexico. East and northeast boundary is shared with the existing wilderness, and remaining area boundaries generally follow inventoried roadless area boundaries, with some adjustments for setbacks from roads, to account for alternative exclusion criteria, and allow for defensible space around private property inholdings.

General description: This is a very small area that would become an addition to the existing Gila Wilderness if designated by congress. Terrain is generally moderate, with some steep, rugged areas, and flat mesa tops. Vegetation cover is generally piñon-juniper woodlands and ponderosa pine-oak, depending upon slope aspect and elevation. Rain Creek Trail #186, and Rain Creek itself both pass through the area, and Sacaton Cabin is just outside of the area boundary to the northwest.

Current Uses and Management:

- ROS Settings: Under all three alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting, but with small areas of semi-primitive motorized and roaded natural settings.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Rain Creek/74 Mountain grazing allotment.

Table 30. Evaluated wilderness characteristics of the G3 – Gila Rain Creek Addition area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	10.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3, 4, and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

- This area was determined to be manageable to protect wilderness characteristics, with boundaries adjusted to the bases of where steeper slopes begin, approximately the boundary of the inventoried roadless area, excluding areas lacking wilderness characteristics.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Vegetation appears moderately natural in some locations, but the mesa tops reflect past management activities.
- There is only moderate evidence of modern human land management activity characteristic of modern human-caused disturbance.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and are generally concentrated in a few locations.
- This area is moderate in both solitude and primitive and unconfined recreation by comparison to areas located nearby and with opportunities available elsewhere on the Forest.

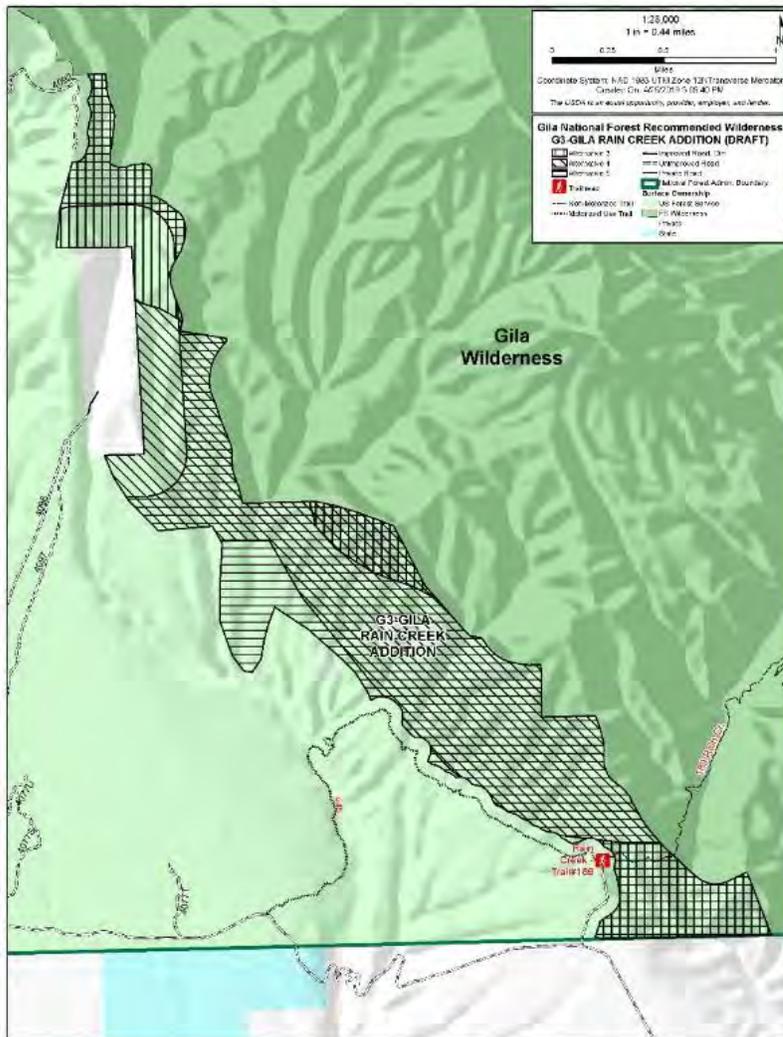


Figure 28. Recommended wilderness by alternative for G3-Gila Rain Creek Addition

G5 – Park Mountain

Alternative 5 - 10,737 acres, for detailed boundary locations see figure 29.

Location and Boundaries: The G5 – Park Mountain area is located in the central region of the Glenwood Ranger District north of Brushy Mountain Lookout and the Lower San Francisco Wilderness Study Area and west of the Glenwood Ranger Station the community of Glenwood within Catron County New Mexico. Boundaries of this area are generally determined by setbacks from forest system roads and US Hwy 180 in most instances, but also by a powerline, adjustments to exclude substantially noticeable improvements and setback for defensible space with adjacent private property to the north and east.

General description: This is a relatively small area of steep to moderate terrain. Vegetation is mostly grassland and piñon-juniper. The San Francisco River flows through the area, with possible opportunities for water-based recreation such as river floating, but the canyon is steep and difficult to access.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is managed as a semi-primitive non-motorized setting, with some areas of semi-primitive motorized and roaded natural along the area boundaries.
- None of this area is within Inventoried Roadless Area (IRA), and therefore none of the area is currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the Roberts Park, Harve Gulch, and Pleasanton grazing allotments.

Table 31. Evaluated wilderness characteristics of the G5 – Park Mountain area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	10.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities visibly appears natural for at least 90 percent of the area, reflecting very little active management occurring within the area
- The appearance of ecological conditions reflect very little of any type of modern human land management activity, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, are not concentrated in location, and their appearance detracts very little from apparent naturalness of the overall area.
- This area is moderate in both solitude and primitive and unconfined recreation by comparison to areas located nearby and with opportunities available elsewhere in the forest.
- Steeper sections on east side have solitude opportunities, though not a lot of trails and may be difficult to access. People could float the section of the San Francisco River passing through the area, but access might be an issue taking out to the south, and the steep bluffs prevent access to the river from within much of the area.

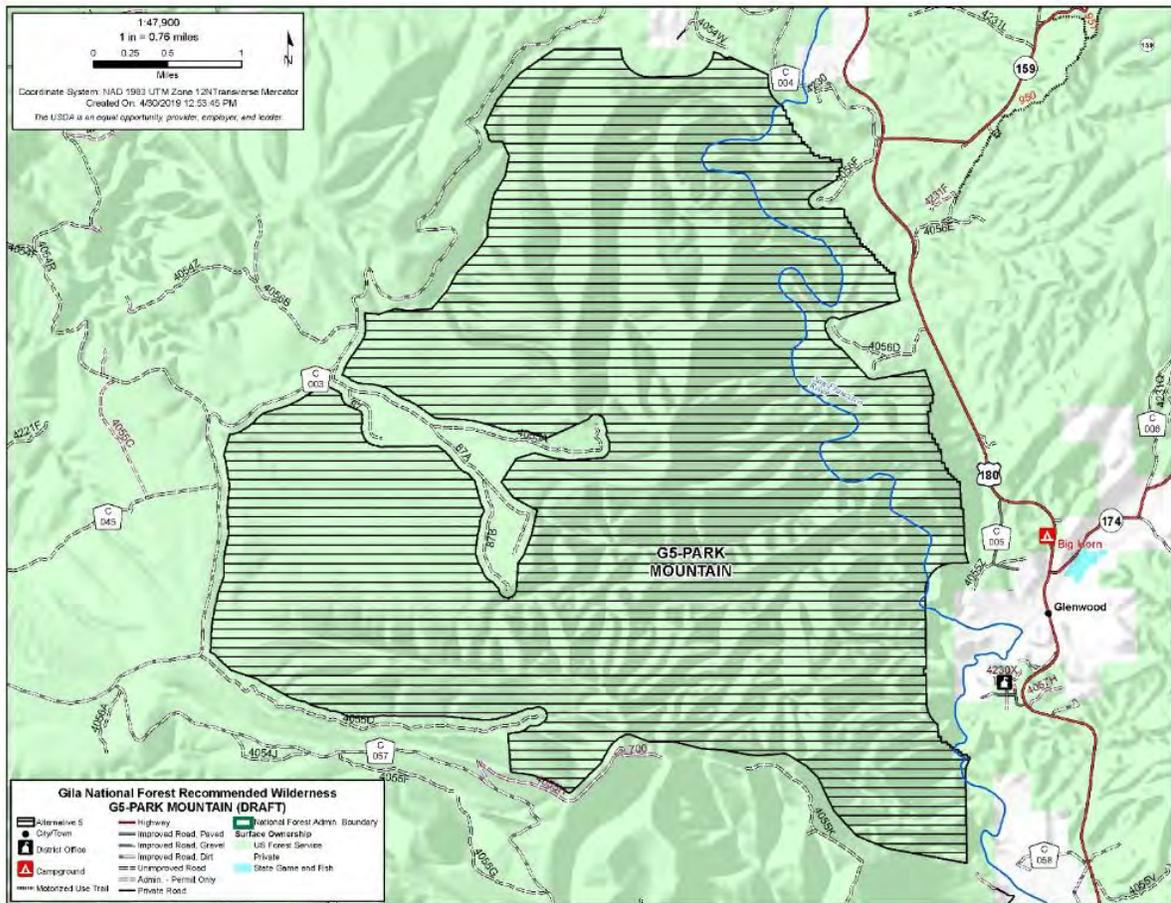


Figure 29. Recommended wilderness by alternative for G5-Park Mountain

G6 – Lower San Francisco

Alternative 4 – 14,746 acres, alternative 5 – 21,018 acres for detailed boundary locations see figure 30.

Location and Boundaries: The G6 – Lower San Francisco area is located in the west-central region of the Glenwood Ranger District, overlaying the entire Lower San Francisco Wilderness Study Area, and occurs within northwestern Grant County and southwestern Catron County New Mexico just south of the town of Glenwood. This area contains the entire Lower San Francisco River congressionally designated Wilderness Study Area, and is oriented roughly between Sundial Mountain just east of US 180, and where the San Francisco River passes into eastern Arizona.

General description: This relatively large area contains moderate to steep and rugged terrain, including the gorge of the lower San Francisco River and tributaries. Vegetation within the river gorge is riparian, and elsewhere is a mix of grasslands, piñon-juniper, and ponderosa pine-oak. There are hot springs along the river that attract recreational use, and the San Francisco Hot Springs Trail #250 leads into the area. The New Mexico Wilderness Act of 1980 designated the Lower San Francisco Wilderness Study Area for review to determine if it featured wilderness characteristics worthy of designation as wilderness. The 1986 Forest Plan evaluated the area and did not recommend that it should be designated as wilderness. Until such time that Congress acts on this recommendation, these lands are mandated by law to be managed to maintain existing wilderness character.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as for semi-primitive non-motorized and primitive settings, with small areas of semi-primitive motorized settings near area boundaries to the northwest, northeast and southeast.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future.
- Permitted commercial grazing occurs within the area, which is part of the Pleasanton and Potholes grazing allotments.

Table 32. Evaluated wilderness characteristics of the G6 – Lower San Francisco area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (RECREATION) HIGH (SOLITUDE)	9
Step 5 – Other Features of Value	HIGH	3
Overall Rank of Wilderness Characteristics	OUTSTANDING	18.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 4 and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area. The area is well-known and popular with recreationists for its numerous hot springs and also features scenic and interesting geology that is visible all along the river corridor.
- The area also contains the entire 8,800-acre Lower San Francisco Wilderness Study Area.
- The San Francisco River in this area is designated as critical habitat for both the loach minnow and spokedace species of fishes, and also contains a small amount of the Desert Willow ERU, which is under-represented within designated areas on the Forest.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area, reflecting very little active management. Some areas reflect diversity at potential.
- Conditions within the area reflect very little of any type of modern human land management activity, limited mostly to areas close to the outside boundaries. There have been no piñon-juniper pushes, and not a lot of vegetation treatments have occurred in the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are not concentrated in location, or they contribute to the historical character and cultural context of the area and their appearance detracts very little from apparent naturalness.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is exceptionally low in much of the area. Some places within the area offer a high degree of solitude.
- There is a wide range of primitive recreation opportunities available, including excellent opportunities for water recreation along the river, its tributaries, and their accompanying deep canyons, including floating the river when conditions allow, swimming, and fishing, bathing in hot springs, and hiking.

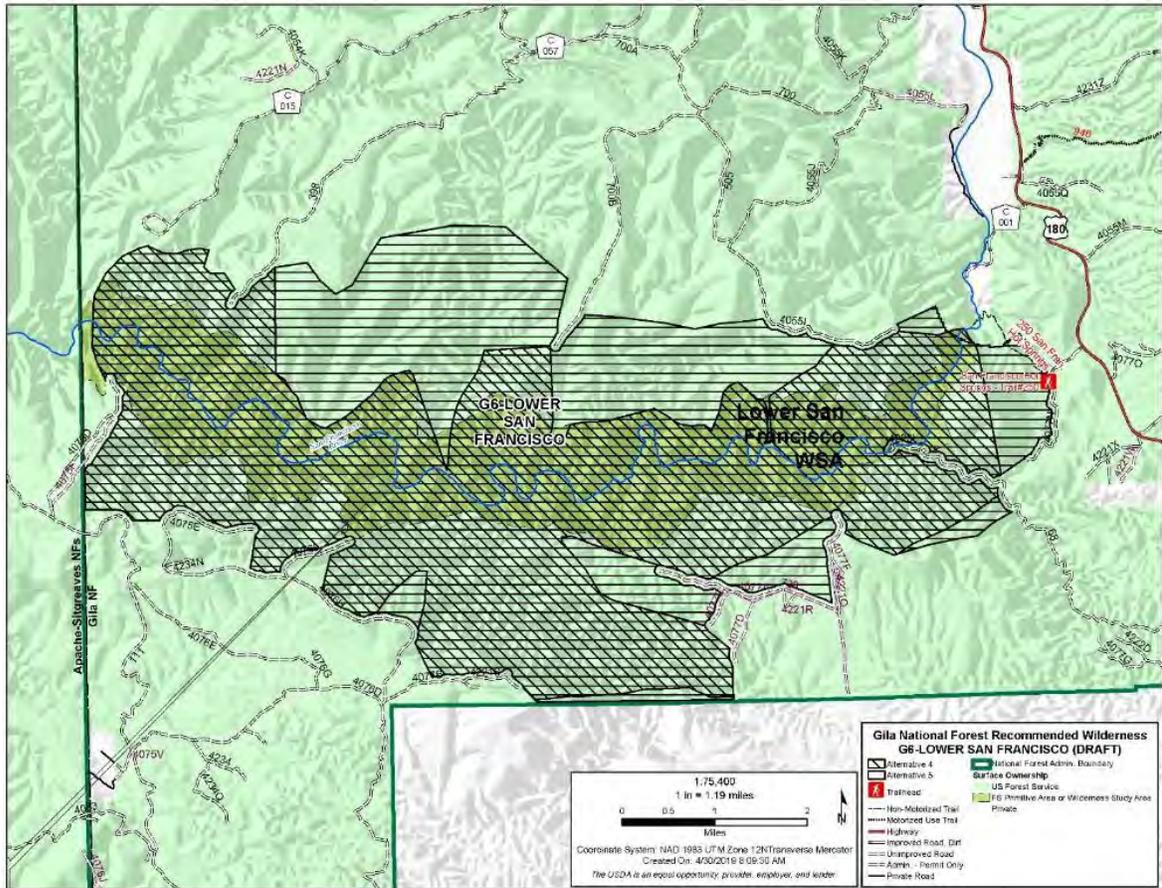


Figure 30. Recommended wilderness by alternative for G6-Lower San Francisco

G7 – Hell Hole

Alternative 5 – 19,623 acres, for detailed boundary locations see figure 31.

Location and Boundaries: The G7 – Hell Hole area is located in the south westernmost region of the Glenwood Ranger District on the border with Arizona, overlaying the entire Hell Hole Wilderness Study Area (WSA), and within Grant County, New Mexico. Area boundaries generally follow those of the WSA, which in turn are largely determined by the state line, forest boundary, setbacks from private property to allow for defensible space, and setbacks from forest system roads and state highway. Boundaries also include some areas not in the WSA, but that met the criteria for the inventory.

General description: The landscape of the southern portion of the area is dominated by topographic features including deep, rugged canyons, rocky peaks, and steep cliffs. The northern portion of the area is primarily rolling hills. Vegetation varies greatly with elevation and aspect. The presence of ponderosa pine in the area is somewhat unusual, as it is rather scarce in surrounding areas. The area lends itself to a variety of primitive recreation activities. When the New Mexico Wilderness Act was passed in 1980, it designated the Hell Hole Wilderness Study Areas (WSAs) for review to determine if it feature wilderness characteristics that make it worthy of designation by Congress as wilderness. The 1986 Forest Plan evaluated the Hell Hole WSA for wilderness suitability and did not recommend that it should be designated as wilderness. Until such time that Congress acts to designate or release these lands to other forest uses, they must be managed to maintain or enhance existing wilderness character. This area is contiguous to the BLM managed Hoverrocker WSA, which is a tiny remnant of a much larger previous wilderness study area that once extended across the state boundary into Arizona. Most of that WSA was in the past released to other resource management, but this small remnant does provide a contiguous link between the Hell Hole and another BLM wilderness study area, the Apache Box WSA.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed with a core area of primitive surrounded by semi-primitive non-motorized settings, and also some roaded natural along the north boundary and semi-primitive motorized along the east boundary of the area.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore almost the entire area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Tennessee, Mule Creek, Winchester, Blue Creek, and Apache Creek grazing allotments.

Table 33. Evaluated wilderness characteristics of the G7 – Hell Hole area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	7
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	11

Factors considered and process used to determine recommendation:

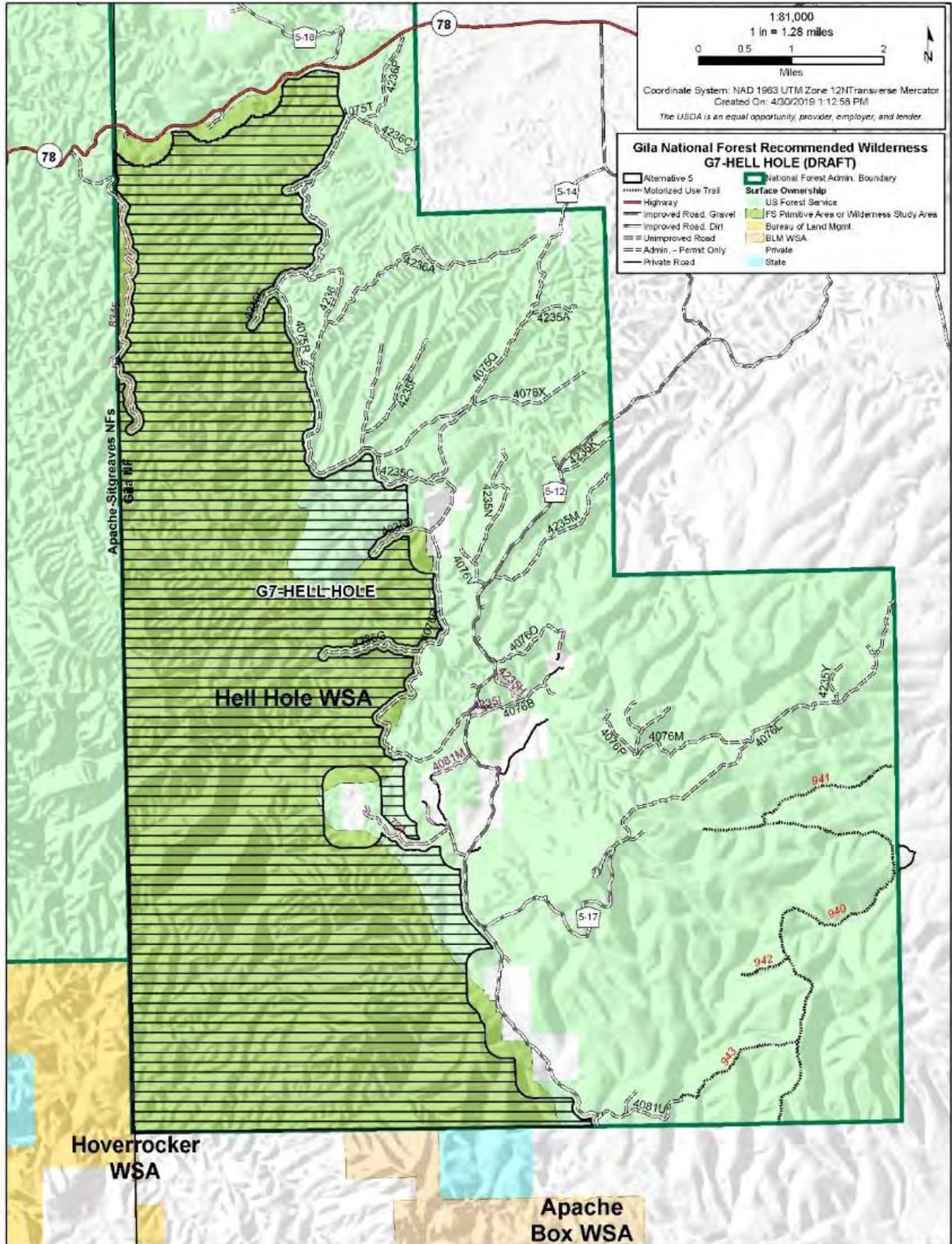
- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to inventory or alternative-specific criteria.
- Other Features of Value are present within the area, including the Wilderness Study Area designation and exceptional scenic qualities.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- There are very good opportunities for solitude throughout most of the area, except for those locations near adjacent roads. Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is exceptionally low.
- There are few limitations to the types and pursuit of primitive recreation opportunities available, and there are few system trails providing access into the area.



G8 - Smoothing Iron Mesa

Alternative 4 - 3,152 acres, alternative 5 - 3,588 acres for detailed boundary locations see figure 32.

Location and Boundaries: The G8 – Smoothing Iron Mesa area is located in the southwestern region of the Glenwood Ranger District and occurs within Catron County, New Mexico. The eastern boundary of the area consists of a setback from a powerline, and the western boundary is the state line with New Mexico, meeting the powerline to the south. The north boundary is determined by setbacks from forest system roads

General description: This is a small area of mostly moderate mesa-top terrain, but with deeply incised canyon in some areas. Vegetation is mostly pinyon-juniper and grasslands. This area was included in the inventory despite its small size due to being part of a much larger inventoried roadless area extending across the state line into the Apache-Sitgreaves National Forests. Webster Canyon passes through the area, and the Lower San Francisco Wilderness Study Area is to the south and southeast.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting, but with some areas of semi-primitive motorized and roaded natural settings.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Citizen and Pleasanton grazing allotments.

Table 34. Evaluated wilderness characteristics of the G8 - Smoothing Iron Mesa area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	6
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	12.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 4 and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including being adjacent to the wilderness study area, and scenic canyon settings of narrow slot canyons and steep side walls.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area, particularly within the canyon bottoms and drainages.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, are not concentrated in location, do not appear modern, and detract very little from the apparent naturalness of the area.
- Outside of hunting and antler gathering seasons the likelihood of encountering other visitors is very low. Terrain, vegetation cover, and low use all contribute to good opportunities for solitude. Recreation opportunities are moderate compared to those available nearby and forest-wide.

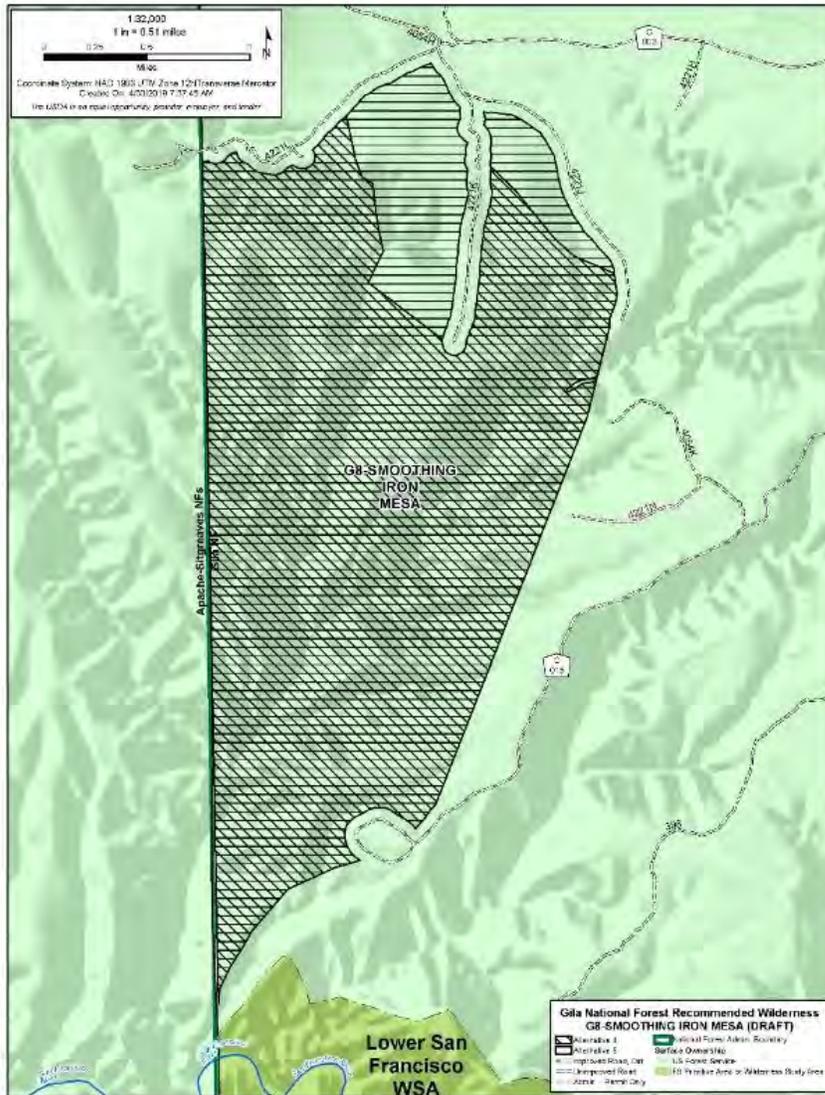


Figure 32. Recommended wilderness by alternative for G8-Smoothing Iron Mesa

G9 – Blue Range SE Addition

Alternative 5 - 2,856 acres, for detailed boundary locations see figure 33.

Location and Boundaries: The G9 – Blue Range SE Addition area is a very small area located in the western region of the Glenwood Ranger District, nearby to the state line and adjacent to the Blue Range Wilderness, within Catron County, New Mexico. Area boundaries are generally determined by shared boundary with the existing wilderness, and setbacks from a powerline, forest system roads and defensible space with adjacent private property.

General description: This very small area consists of moderate to steep terrain, and vegetation cover is predominantly grassland and piñon-juniper. The area would become an addition to the existing Blue Range Wilderness if it were designated by Congress.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is managed as a semi-primitive non-motorized setting near the existing wilderness, with roaded natural setting area to the south, and semi-primitive motorized settings to the west.
- This area is partially within Inventoried Roadless Area (IRA), and is therefore this portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- Permitted commercial grazing occurs within the area, which is part of the Pueblo Creek, Whiterocks, and Alma grazing allotments.

Table 35. Evaluated wilderness characteristics of the G9 – Blue Range SE Addition area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (SOLITUDE) LOW (RECREATION)	3
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	6

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and concentrated in some locations.
- This area is moderate in both solitude and primitive and unconfined recreation by comparison to areas located nearby and with opportunities available elsewhere on the Forest.

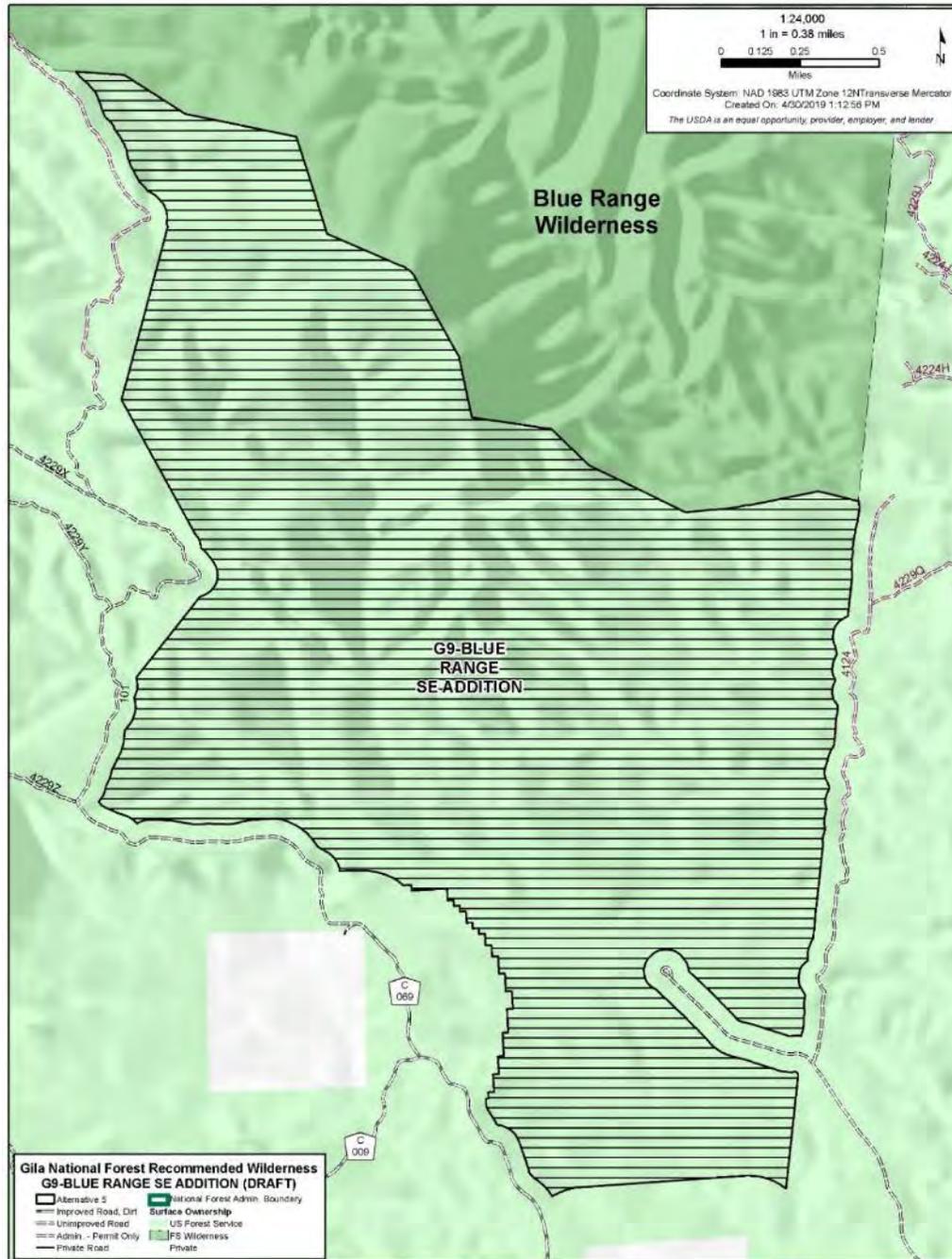


Figure 33. Recommended wilderness by alternative for G9-Blue Range SE Addition

G10 – Blue Range SW Addition

Alternative 5 - 3,709 acres, for detailed boundary locations see figure 34.

Location and Boundaries: The G10 – Blue Range SW Addition area is a very small area located in the western region of the Glenwood Ranger District, on the state line and adjacent to the Blue Range Wilderness within Catron County, New Mexico. Area boundaries are generally determined by shared boundary with the existing wilderness and Blue Range Primitive Area (also the Arizona state Line), and setbacks from forest system roads and substantially noticeable improvements.

General description: This is a very small area consisting of steep to moderate dissected terrain and with vegetation cover consisting mostly of piñon-juniper. If designated by congress, the recommended area would become an addition to the existing Blue Range Wilderness.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, but with areas of primitive near boundaries with the wilderness and Blue Range Primitive Area, and semi-primitive motorized settings near the south boundaries.
- This area is no part of the area within Inventoried Roadless Area (IRA), and therefore it is not currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the Whiterocks and Alma grazing allotments.

Table 36. Evaluated wilderness characteristics of the G10 – Blue Range SW Addition area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (SOLITUDE) LOW (RECREATION)	4
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	8

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and is concentrated within some location.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors during is fairly low, providing moderate opportunities for solitude compared to nearby areas and other locations in the forest.

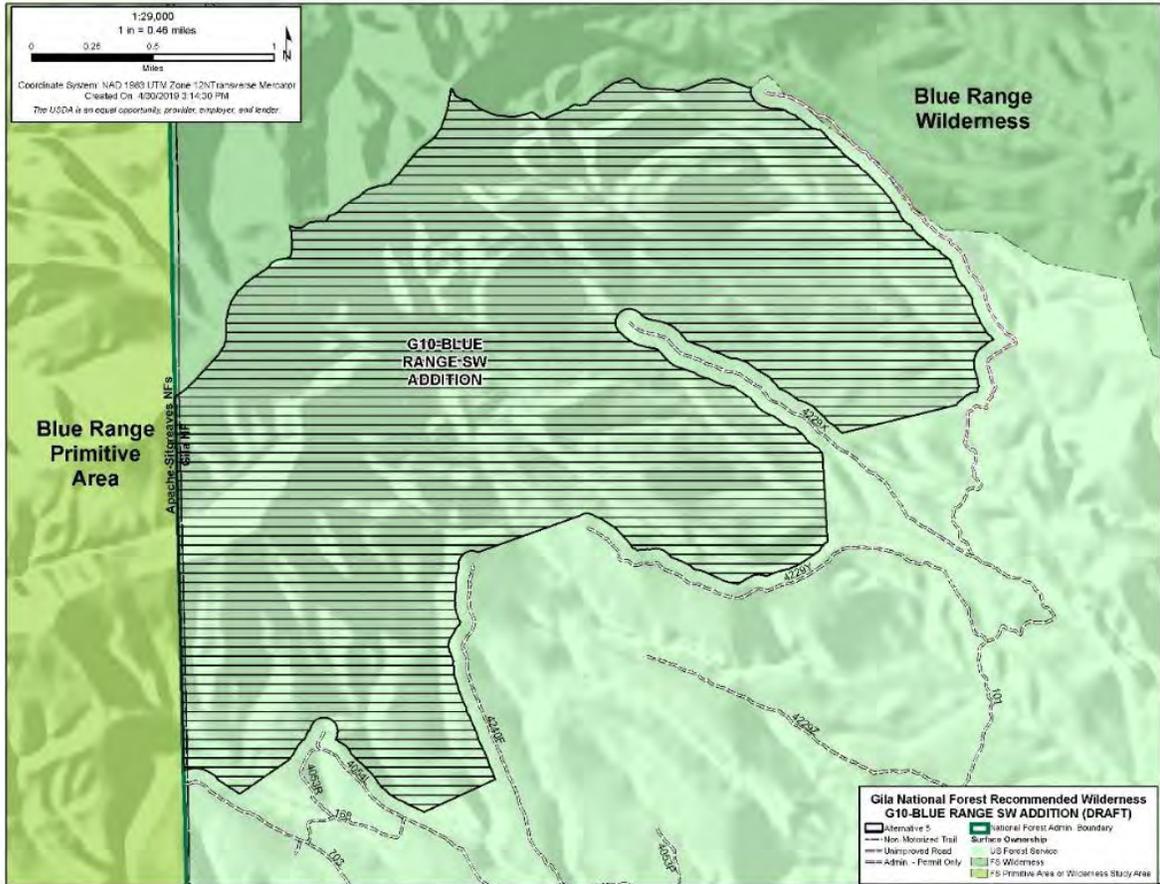


Figure 34. Recommended wilderness by alternative for G10-Blue Range SW Addition

G11 – Gila Dry Creeks Addition

Alternative 3 - 1,973 acres, alternative 4 - 373 acres, alternative 5 - 2,827 acres for detailed boundary locations see figure 35.

Location and Boundaries: The G11 – Gila Dry Creeks Addition is a moderately small area located in the central region of the Glenwood Ranger of the District directly on the western boundary Gila Wilderness. Boundaries to the north are shared with the existing Gila Wilderness, and all other boundaries coincide with the inventoried roadless area boundaries, with adjustments for alternative criteria-specific exclusions and defensible space adjacent to private property.

General description: This is a relatively small area of steep terrain adjacent to the existing wilderness. Vegetation is generally piñon-juniper woodlands, grasslands, and ponderosa pine-oak, often depending upon elevation and slope aspect. Dry Creek, Little Dry Creek, and the Little Dry Trail # 180 pass through the evaluated area.

Current Uses and Management:

- ROS Settings: Under all three alternatives it is recommended in, this area is predominantly managed for semi-primitive non-motorized and primitive settings with small areas of semi-primitive motorized and roaded natural settings near boundaries in alternatives 3 and 5.
- This area is entirely within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Dry Creek grazing allotment.

Table 37. Evaluated wilderness characteristics of the G11 – Gila Dry Creeks Addition area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	10.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3, 4, and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- The area appears to moderately reflect ecological conditions normally associated without human intervention by comparison to the adjacent Gila Wilderness and other nearby areas. Steep slopes have grass components that are at potential for apparent naturalness.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The extent to which existing improvements on the landscape represent a departure from apparent naturalness is moderate compared to the adjacent wilderness and other areas of the Forest.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is exceptionally low. Terrain, vegetation cover, and low use throughout the area all contribute to excellent opportunities for solitude. There are few limitations to the types and pursuit of primitive recreation opportunities available.

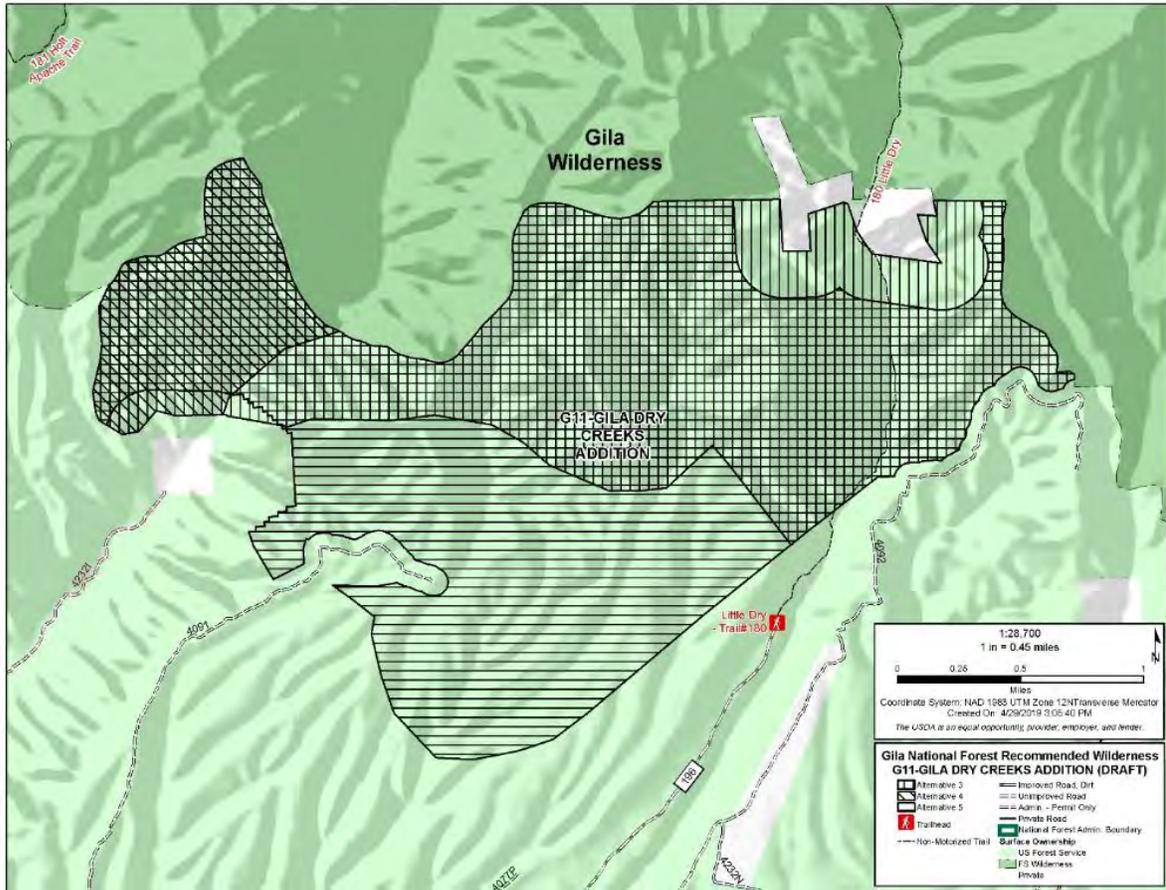


Figure 35. Recommended wilderness by alternative for G11-Gila Dry Creeks Addition

G12 – Gila Whitewater Addition

Alternative 2 - 1,960 acres, alternative 3 - 3,116 acres, alternative 5 - 2,223 acres for detailed boundary locations see figure 36.

Location and Boundaries: The G12 – Gila Whitewater Addition is a moderately small area located in the central region of the Glenwood Ranger District directly on the western boundary of the Gila Wilderness. Area boundaries are generally determined by the existing wilderness boundary, buffers from Forest system roads, defensible space around private property and priority WUI areas, and adjustments to exclude substantially noticeable improvements.

General description: The area is contiguous with existing wilderness, located on very steep and challenging terrain between the existing wilderness boundary and the Bursum Road. If designated by congress, this area would become an addition to the existing Gila Wilderness.

Current Uses and Management:

- ROS Settings: Under all three alternatives it is recommended in, this area is predominantly managed as semi-primitive non-motorized and primitive settings. There are roaded natural settings along the north boundary of the eastern half of the area, and for alternative 5, the very northwestern boundary.
- This area is entirely within Inventoried Roadless Area (IRA) under all alternatives, and therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing does not currently occur within the area.

Table 38. Evaluated wilderness characteristics of the G12 – Gila Whitewater Addition area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	13.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.
- The area is contiguous with existing wilderness, and would contribute to the connectivity between the existing wilderness and G1 -Mineral Creek, which is recommended in the same alternatives.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, though they may be concentrated in some locations, contributing to a limited extent to the historical character and cultural context of the area.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is very low.
- Terrain, vegetation cover, and low use throughout the area all contribute to excellent opportunities for solitude.
- There are few limitations to the types and pursuit of primitive recreation opportunities available, and there are few management restrictions to confine recreation pursuits. Lots of trails to provide recreation opportunities.

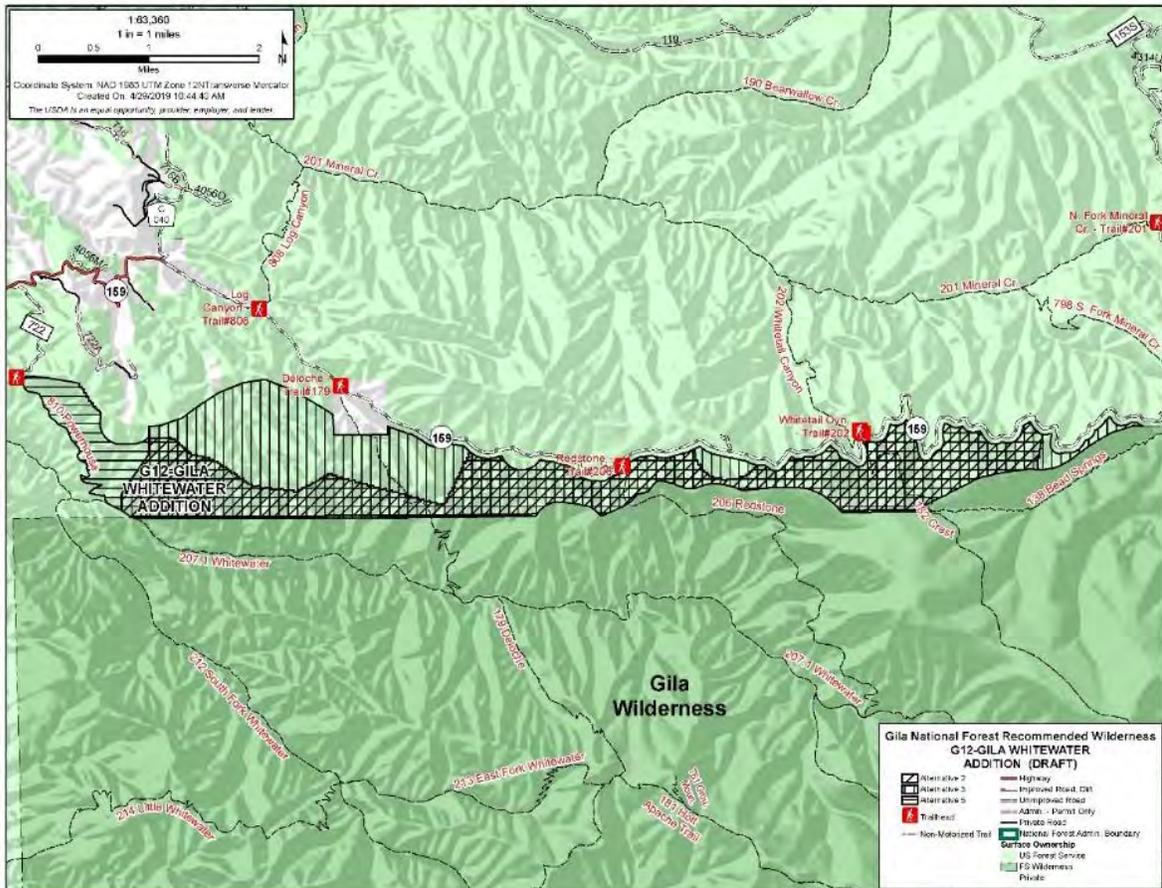


Figure 36. Recommended wilderness by alternative for G12-Gila Whitewater Addition

B1a – Aldo Leopold Seco Addition

Alternative 2 - 4,724 acres, alternative 3 - 517 acres, alternative 4 - 4,031 acres, alternative 5 - 5,741 acres, for detailed boundary locations see figure 37.

Location and Boundaries: The B1a, Aldo Leopold Seco Addition is located contiguous to the eastern boundary of the Aldo Leopold Wilderness, in the east-central Black Range Ranger District within Sierra County, New Mexico. Northernmost boundaries are determined by separation from a dissimilar evaluated area along the section line, and setbacks from roads. Western boundaries are shared with the Aldo Leopold Wilderness, which it would become an addition to if designated. Eastern boundaries consist of the Forest boundary with other ownership, and the south boundary determined by roads, with some adjustments to exclude infrastructure.

General description: This area consists of moderate to very steep, rugged terrain along the eastern front of the Black Range Mountains, and the vegetation consists of a classic southwestern mountains mix, of piñon-juniper, ponderosa pine, and mixed conifer with each species presence generally depending upon elevation and slope aspect.

Current Uses and Management:

- ROS Settings: Under all alternatives it is recommended in, this area is predominantly managed for semi-primitive non-motorized and primitive settings, with very small areas of roaded natural setting on the western boundary in alternatives 2, 4, and 5, and a small area of semi-primitive roaded setting on the northeast boundary for alternative 5.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing does not currently occur within the area, which is mostly within the Animas grazing allotment, but partly within the Hermosa allotment.

Table 39. Evaluated wilderness characteristics of the B1a – Aldo Leopold Seco Addition area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	HIGH	14.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for all of the alternatives, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.

- Other Features of Value are present within the area, including Chiricahua Leopard Frog habitat in Seco Creek and excellent scenery.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural throughout the area, and does not appear to be manipulated by humans. This reflects very little past or current active management within the area.
- The area has only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, mostly concentrated in some locations, some appear to be fairly modern, and by their presence may impose limitations on the apparent naturalness of the area.
- Opportunities for solitude are high outside of hunting or antler gathering seasons, the likelihood of encountering other visitors during non-hunting season times of the year is low.
- There also exist very good opportunities for primitive and unconfined recreation within the area.

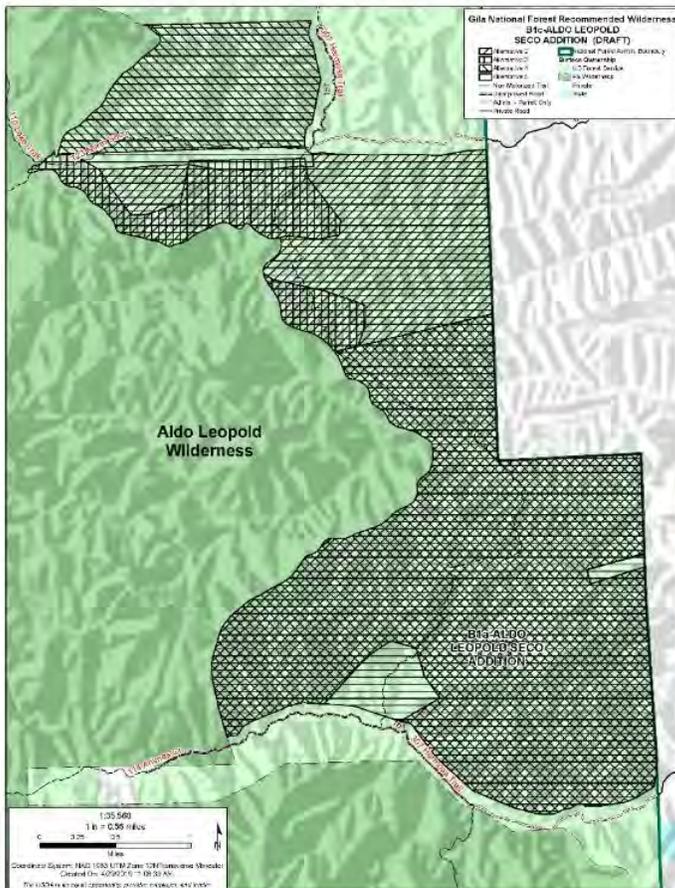


Figure 37. Recommended wilderness by alternative for B1a-Aldo Leopold Seco Addition

B1b – Aldo Leopold Seco Addition

Alternative 3 - 208 acres, alternative 5 – 229 acres, for detailed boundary locations see figure 38.

Location and Boundaries: The B1b -Aldo Leopold Seco Addition is located contiguous to the eastern boundary of the Aldo Leopold Wilderness, in the east-central Black Range Ranger District within Sierra County, New Mexico. This area’s boundaries are determined by a road to the north, and shared boundaries with the Aldo Leopold Wilderness (which it will be an addition to if designated) on all other sides.

General description: This very small area consists of moderate to somewhat rugged terrain, and the vegetation cover consists of a classic southwestern mountains mix, with piñon-juniper, ponderosa pine, and mixed conifer occurring depending upon elevation and slope aspect.

Current Uses and Management:

- ROS Settings: This entire recommended area is managed as a primitive setting.
- This area is partially within Inventoried Roadless Area (IRA), and this portion is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain and access issues.
- Permitted commercial grazing does not currently occur within the entire area, which is part of the Animas grazing allotment.

Table 40. Evaluated wilderness characteristics of the B1b – Aldo Leopold Seco Addition area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	HIGH	14.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 3, though in some instances with area boundaries adjusted due to alternative-specific criteria for recommendation.
- Other Features of Value are present within the area are excellent scenic resources compared to other nearby areas.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural throughout the area, and does not appear to be manipulated by humans. This reflects very little past or current active management within the area.

- The area has only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, mostly concentrated in some locations, some appear to be fairly modern, and by their presence may impose limitations on the apparent naturalness of the area.
- Opportunities for solitude are high outside of hunting or antler gathering seasons, the likelihood of encountering other visitors during non-hunting season times of the year is low.
- There are also very good opportunities for primitive and unconfined recreation within the area.

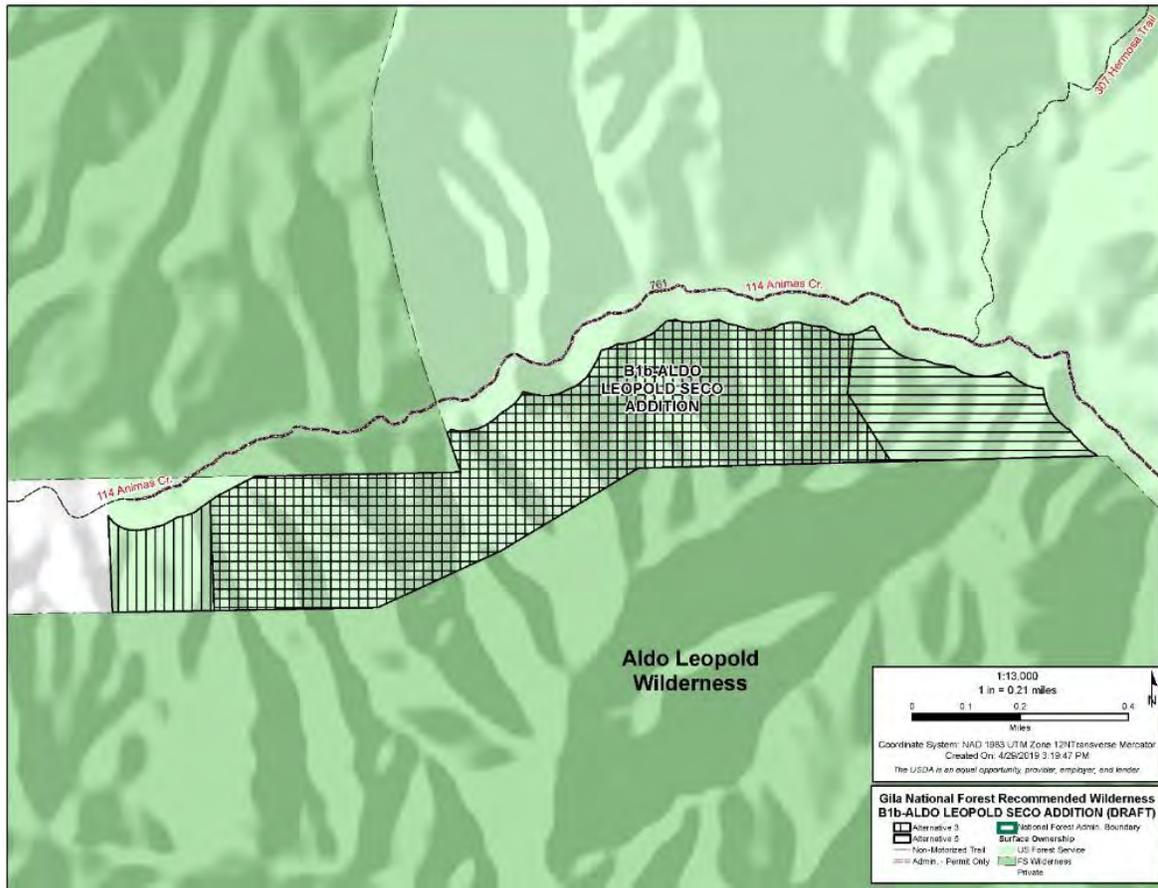


Figure 38. Recommended wilderness by alternative for B1b-Aldo Leopold Seco Addition

B1c – Aldo Leopold Seco Addition

Alternative 2 - 48 acres, alternative 3 - 78 acres, alternative 4 - 40 acres, alternative 5 – 48 acres: for detailed boundary locations see figure 39.

Location and Boundaries: The B1c -Aldo Leopold Seco Addition is very small area that is located contiguous to, and is an inholding within, the eastern boundary of the Aldo Leopold Wilderness, in the east-central Black Range Ranger District within Sierra County, New Mexico. The boundaries are shared with the adjacent Aldo Leopold Wilderness on three sides, with the eastern boundary determined by a shared boundary with a private property inholding. The area would be an addition to the existing wilderness if it were designated by Congress.

General description: This very small area consists of varied moderate to very steep, rugged terrain on the eastern front of the Black Range Mountains, and the vegetation consists of a classic southwestern mountains mix of with piñon-juniper, ponderosa pine, and mixed conifer, with the presence of each depending upon elevation and slope aspect.

Current Uses and Management:

- ROS Settings: Under all alternatives it is recommended in, this area is managed as a primitive, setting.
- None of this area is within Inventoried Roadless Area (IRA), and is therefore not currently managed to protect roadless characteristics.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing does not currently occur within the area, which is part of the Animas grazing allotment.

Table 41. Evaluated wilderness characteristics of the B1c – Aldo Leopold Seco Addition area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	HIGH	14.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for all of the alternatives, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.
- Other Features of Value are present within the area are excellent scenic resources compared to other nearby areas.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural throughout the area, and does not appear to be manipulated by humans. This reflects very little past or current active management within the area.
- The area has only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, mostly concentrated in some locations, some appear to be fairly modern, and by their presence may impose limitations on the apparent naturalness of the area.
- Opportunities for solitude are high outside of hunting or antler gathering seasons, the likelihood of encountering other visitors during non-hunting season times of the year is low.
- There also exist very good opportunities for primitive and unconfined recreation within the area.

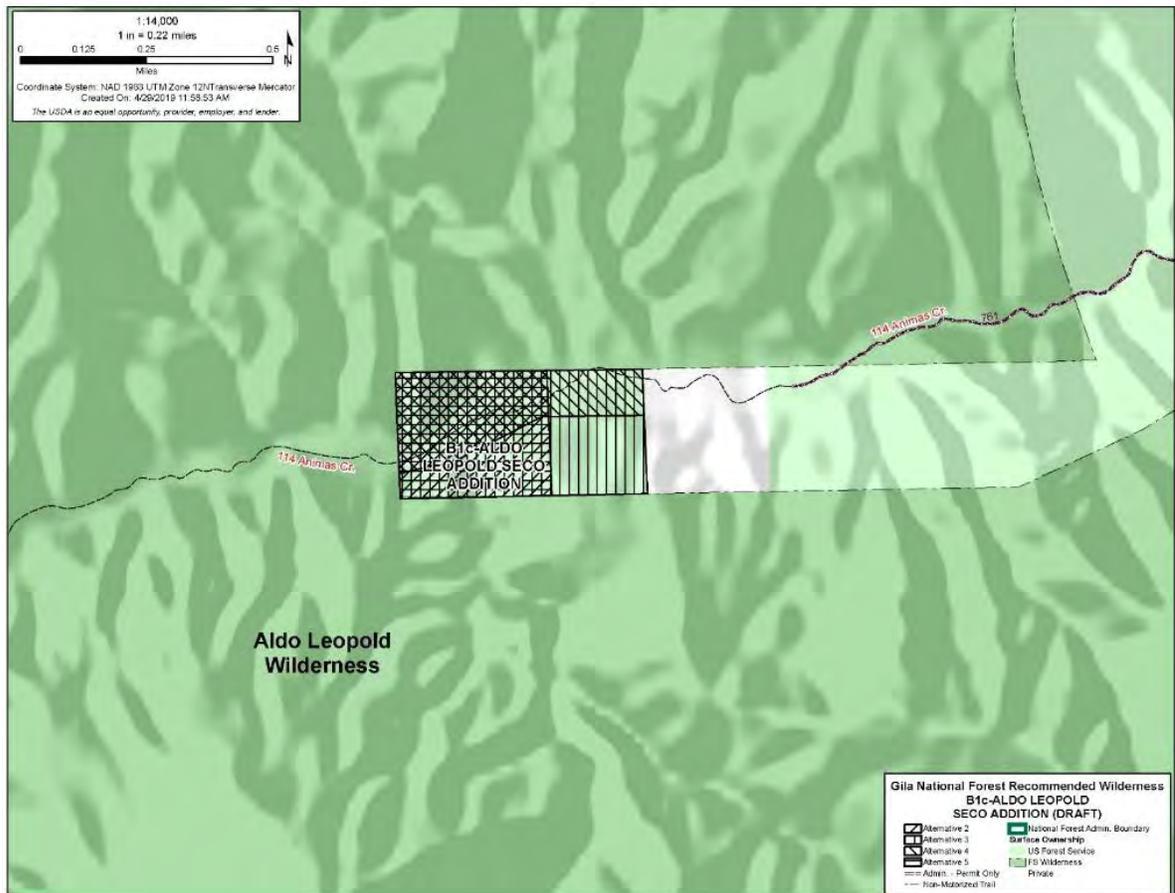


Figure 39. Recommended wilderness by alternative for B1c-Aldo Leopold Seco Addition

B5 – Stone Creek

Alternative 5 - 8,383 acres, for detailed boundary locations see figure 40.

Location and Boundaries: B5 – Stone Creek is located on the northeastern forest boundary on the Black Range Ranger District within Catron County, New Mexico. Area boundaries consist of setbacks for defensible space from forest boundaries to the north, west, and east, and setback from a forest system road to the south.

General description: The Stone Creek area is a small-sized area of rugged, heavily dissected terrain with vegetation cover of primarily piñon-juniper, with stringers of ponderosa pine, depending upon elevation and aspect. A short section of the Continental Divide National Scenic Trail passes through the southwest portion of the area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with some semi-primitive motorized settings along area boundaries
- This area is mostly within Inventoried Roadless Area (IRA), and is therefore these portions of the area are currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the North Wahoo and South Wahoo grazing allotments.

Table 42. Evaluated wilderness characteristics of the B5 – Stone Creek area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	11.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.

- There is only minor evidence of any type of modern human land management activity throughout the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and concentrated in some locations.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is low, providing good overall opportunities for solitude throughout much of the area.
- Throughout this small-sized area, there are few limitations to the types and pursuit of primitive recreation opportunities available, though there are few trails, and orientation of adjacent private property and terrain can make it difficult accessing much of the area. Primitive and unconfined recreation opportunities are moderate compared with those nearby and elsewhere in the forest.

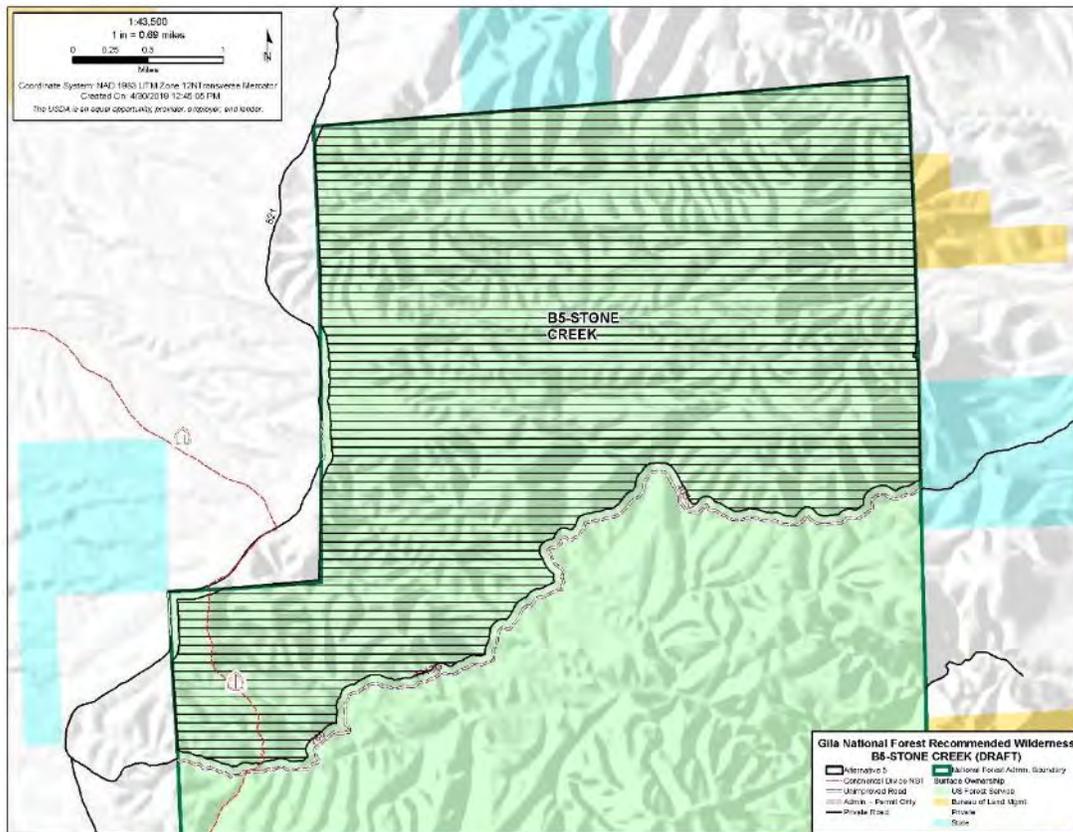


Figure 40. Recommended wilderness by alternative for B5-Stone Creek

B8 – Beaverhead

Alternative 5 - 8,055 acres, for detailed boundary locations see figure 41.

Location and Boundaries: The B8 – Beaverhead area is located in the northwest Black Range Ranger District, north of Wolf Hollow Campground, State Hwy 59, and the Beaverhead Airbase, within Catron County, New Mexico. Area boundaries are generally determined by setbacks from the state highway, forest system roads, defensible space adjacent to private ownership, the forest boundary, and exclusion of substantially noticeable improvements.

General description: This is a relatively small area of moderately rugged, dissected terrain primarily composed of grassland vegetation.

Current Uses and Management:

- ROS Settings: Under alternative 5, recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting
- No part of this area is located within Inventoried Roadless Area (IRA), and therefore none of the area is currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the Black Mountain grazing allotment.

Table 43. Evaluated wilderness characteristics of the B8 – Beaverhead area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Much of this area is open grassland, under-represented within current wilderness, consisting of the lower of extension of the Plains of San Agustin into the forest. The extensive views to the Plains are a unique scenic opportunity, and the presence of pronghorn provide a unique wildlife viewing and hunting opportunity.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and is concentrated in some locations.
- Outside of hunting or antler gathering seasons, the likelihood of encountering other visitors is low.
- There are few limitations to the types and pursuit of primitive recreation opportunities available.

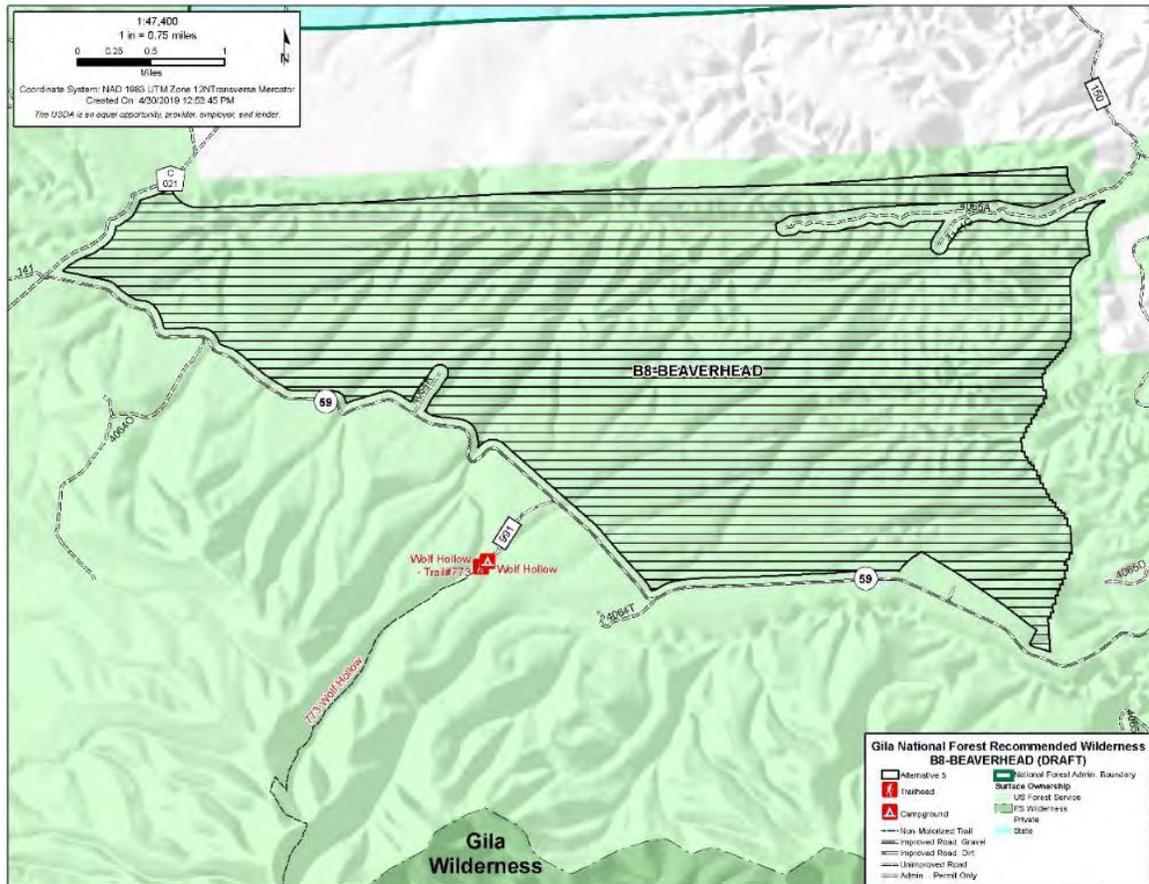


Figure 41. Recommended wilderness by alternative for B8-Beaverhead

B9 – Aldo Leopold Addition East

Alternative 4 - 11,909 acres, for detailed boundary locations see figure 42.

Location and Boundaries: The B9 – Aldo Leopold Addition East area is located in the central Black Range Ranger District, within Sierra County, New Mexico. Area boundaries to the west are shared with the existing Aldo Leopold Wilderness, and north and eastern boundaries are primarily determined by setback from motorized system trails, forest system roads and defensible space for adjacent private lands. The south boundary is along the section line, to differentiate the area from the adjacent evaluated area with dissimilar ranking of wilderness characteristics.

General description: This area consists mostly of rugged, mountainous terrain dissected by canyons and drainages within a classic southwestern mountain forest of with piñon-juniper, ponderosa pine, and mixed conifer occurring depending upon elevation and aspect. Parts of the area are deeply intruded by cherrystemed roads and private property inholdings. The Circle Seven Trail #106, Rattlesnake Trail #107, and Spud Patch Trail #111 all pass through the area, as well as Morgan and Spud Patch Creeks.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting
- This area is mostly within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the North Palomas and Hermosa grazing allotments.

Table 44. Evaluated wilderness characteristics of the B9 – Aldo Leopold Addition East area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	LOW	2.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (RECREATION) LOW (SOLITUDE)	3
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	LOW	5.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 4, though in some instances boundaries are adjusted for alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and concentrated in some locations, although some may appear to be fairly modern, and by their presence may impose limitations on the apparent naturalness of the area.
- This area has moderate opportunities for primitive and unconfined recreation by comparison to areas located nearby and with opportunities available elsewhere on the Forest.

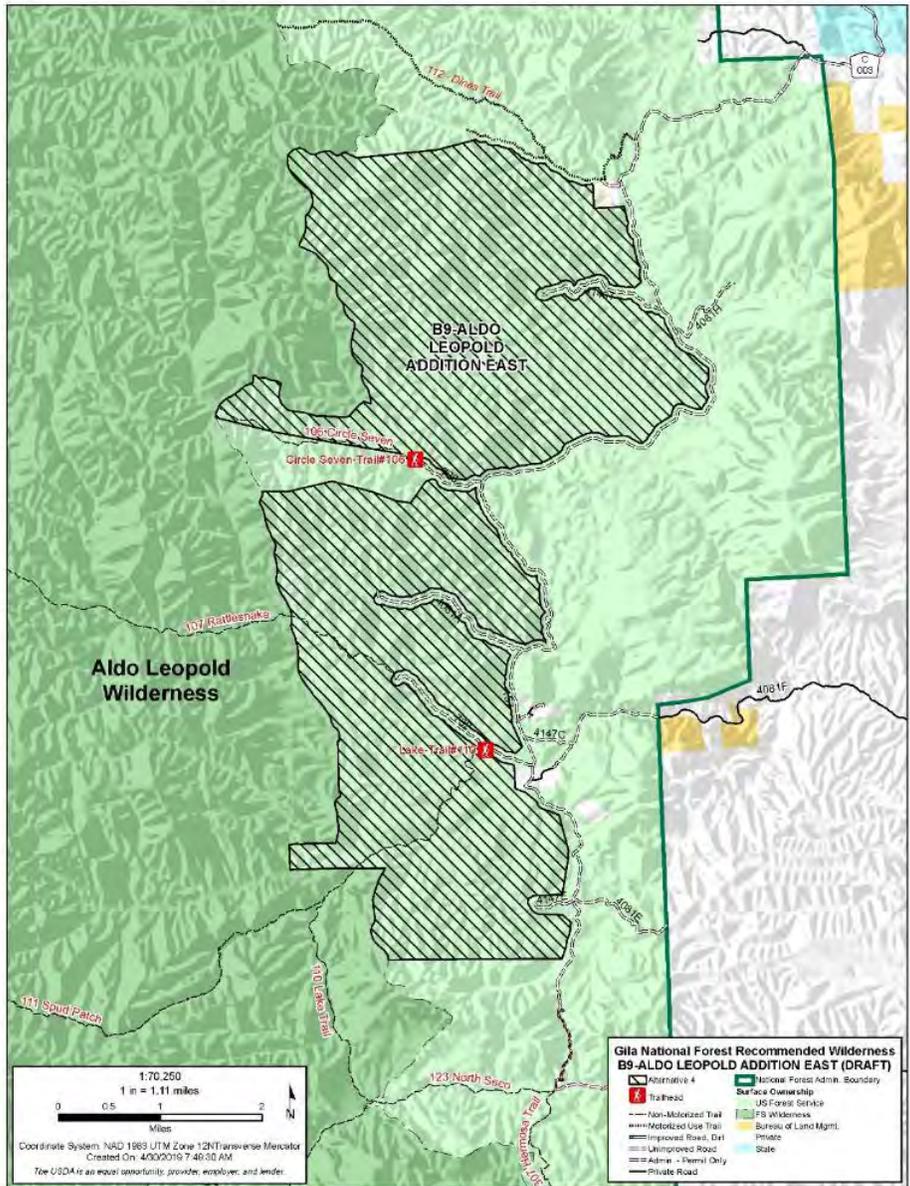


Figure 42. Recommended wilderness by alternative for B9-Aldo Leopold Addition East

B10 – Aldo Leopold Addition Northeast

Alternative 2 - 8,381 acres, alternative 3 - 4,076 acres, alternative 5 - 15,181 acres, for detailed boundary locations see figure 43.

Location and Boundaries: The B10 – Aldo Leopold Addition Northeast area is located contiguous to the north-northeastern boundary of the Aldo Leopold Wilderness in the central Black Range Ranger District within Sierra County, New Mexico. This area’s boundary to the north is determined by setbacks from forest system roads and private property, but with adjustments to exclude areas determined unmanageable to protect wilderness characteristics during the evaluation. A portion of the southeast boundary near the wilderness boundary is a cherrystemed forest system road. Boundaries generally to the west are shared with the Aldo Leopold Wilderness, of which it would be an addition if designated by congress. Eastern boundaries are the forest boundary shared with other ownership, and a motorized trail determines the southernmost boundary.

General description: This area consists mostly of rugged, mountainous terrain dissected by canyons and drainages within a classic southwestern mountain forest of with piñon-juniper, ponderosa pine, and mixed conifer occurring depending upon elevation and aspect. Parts of the area are deeply intruded by cherrystemed roads and private property inholdings. A section of the Continental Divide National Scenic Trail passes through the area.

Current Uses and Management:

- ROS Settings: Under the alternatives it is recommended in, this area is predominantly managed as semi-primitive non-motorized and primitive settings with small areas of roaded natural and semi-primitive motorized to the northeast, and semi-primitive motorized to the southeast in alternative 5
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the South Fork and Palomas grazing allotments.

Table 45. Evaluated wilderness characteristics of the B10 – Aldo Leopold Addition Northeast area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	HIGH	14.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.
- Other Features of Value are present within the area, including significant Mexican spotted owl habitat, known as protected activity centers (PACs). The area is also a representative of the role of fire being present within the ecosystem.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects little active management activity occurring within the area, including past vegetation treatments as well as past and current permitted grazing of livestock. The composition of plant and animal communities appears natural in 90 percent of the area (contingent upon adjusting boundaries to remove logging road area, otherwise ID Team would rank as Low).
- Current ecological conditions reflect that there has been very little management activity occurring within the area. There is only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- There are very few improvements within the area, however there is a nearby mining complex located just outside of the boundary. There are roads from logging activities in far northwest side. The ID Team adjusted the boundaries to follow inventoried roadless area for the western boundary to exclude areas considered unmanageable, but also resulting in the removal of visible improvements and improving apparent naturalness.
- There are some effects from cherry stems and private property inholdings. However, there are good opportunities though much of the area, and it is contiguous to the existing wilderness.

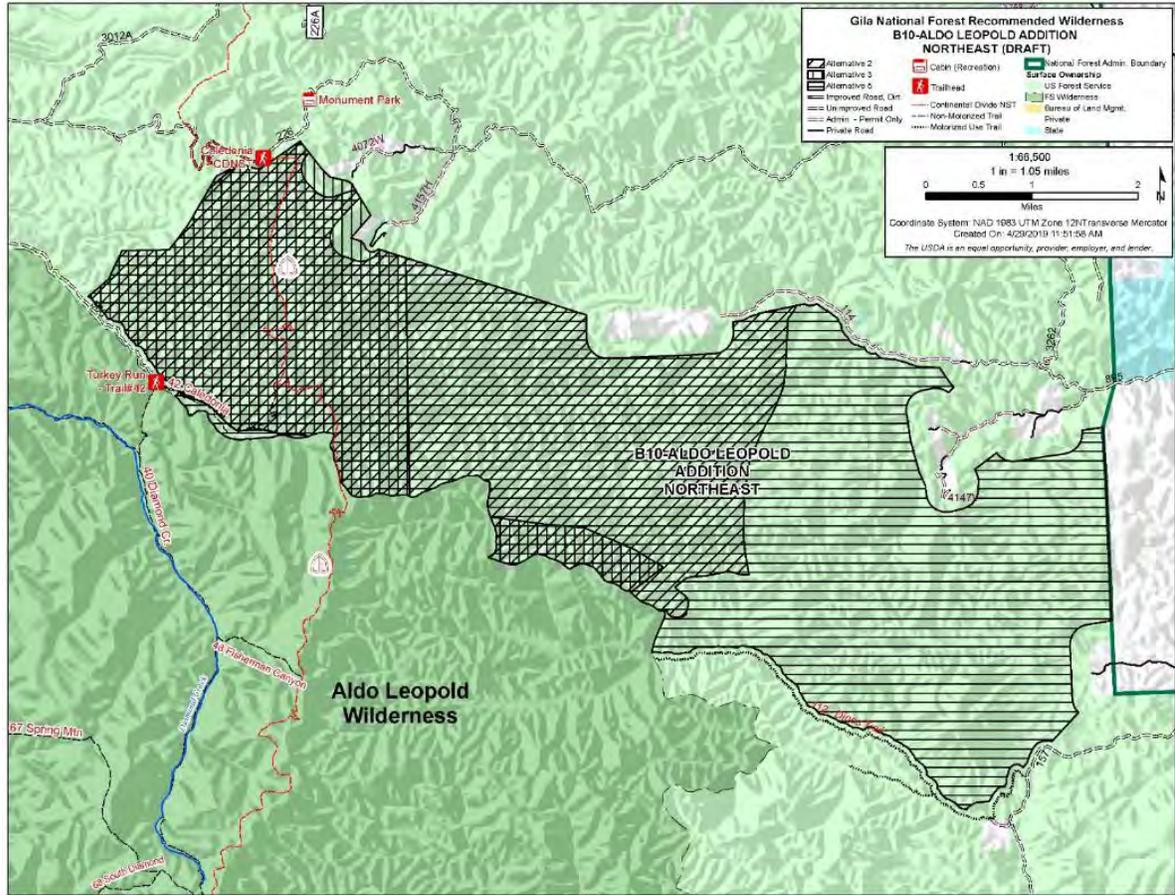


Figure 43. Recommended wilderness by alternative for B10-Aldo Leopold Addition Northeast

B11 – Aldo Leopold Addition Southeast

Alternative 2 – 944 acres, alternative 3 – 943 acres, alternative 4, 943 acres, alternative 5 - 1,242 acres, for detailed boundary locations see figure 44.

Location and Boundaries: Aldo Leopold Addition Southeast area is located contiguous to the northeast boundary of the Aldo Leopold wilderness, on the central Black Range Ranger District in Sierra County, New Mexico. Area boundaries to the north and south are determined by forest system roads, with an adjustment to the furthest south to exclude mining development. Eastern boundary coincides with the forest boundary, and the western boundaries are shared with the Aldo Leopold Wilderness, of which it would become an addition if designated by Congress.

General description: This area consists mostly of rugged, mountainous terrain dissected by canyons and drainages within a classic southwestern mountains forest of with piñon-juniper, ponderosa pine, and mixed conifer occurring depending upon elevation and aspect. Parts of the area are deeply intruded by cherrystemed roads and private property inholdings that were removed from boundaries to meet alternative criteria.

Current Uses and Management:

- ROS Settings: Under all alternatives, this area is predominantly managed as semi-primitive non-motorized and primitive setting, but with a small area of semi-primitive motorized.
- This area is mostly within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Kingston grazing allotment.

Table 46. Evaluated wilderness characteristics of the B11 – Aldo Leopold Addition Southeast area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (Both)	6
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	12.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, 4, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.
- Other Features of Value are present within the area, including scenic that are considered to be exemplary compared to other areas in the near vicinity, especially the long-range views available from the trail.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects very little active management. The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.
- Current ecological conditions reflect that there has been only minor management activity occurring within the area. Modern human land management activity is noticeable in some locations. There is only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and may be concentrated in some locations, the, and by their presence may impose limitations on the apparent naturalness of the area. Visible mining activity is present within the area, including mine reclamation infrastructure such as culverts and gates. This activity is visibly evident from Bald Hill, but not the trail. There is very little range fence within the area, containment consists mostly of natural barriers.
- Not even in hunting season does this area see much visitation. The trail through the area has been reconstructed, and offers excellent views of the surrounding landscape - though not of nearby mining activities. Very good opportunities for primitive recreation are also available.

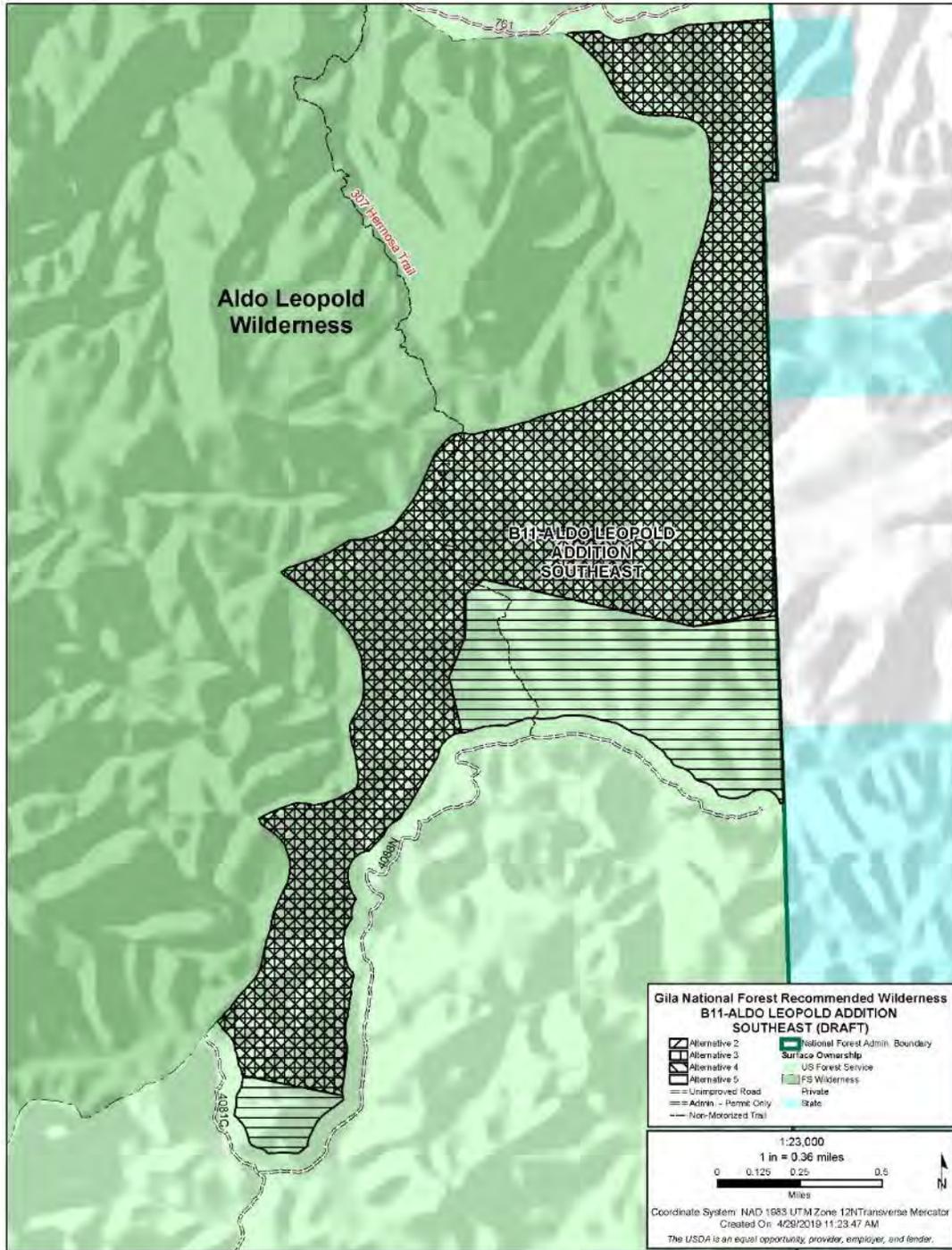


Figure 44. Recommended wilderness by alternative for B11-Aldo Leopold Addition Southeast

B13 – Wahoo North

Alternative 5 – 19,737 acres, for detailed boundary locations see figure 45.

Location and Boundaries: The B13 – Wahoo North area is located on the northeastern forest boundary on the Black Range Ranger District within Catron County, New Mexico. Area boundaries consist of setbacks for defensible space from forest boundaries to the west, and east, setback from a powerline to the southeast, and setbacks from forest system roads elsewhere.

General description: This is a moderately sized area consisting of variable terrain from moderately rugged to canyons and mountains. Vegetation cover consists of piñon-juniper, ponderosa pine, or mixed conifer, generally depending upon elevation and aspect of slope. A section of the Continental Divide National Scenic Trail passes through the area, as well as the Duck Canyon Trail #60. Prominent peaks in this area include Bear Mountain and Wahoo Mountain.

Current Uses and Management:

- ROS Settings: Under alternative 5, recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting with smaller areas of semi-primitive motorized along boundaries to the east and southwest.
- This area is mostly within Inventoried Roadless Area (IRA), and therefore, these portions of the area are currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Wahoo North, Wahoo South, V + T, and Silver Creek grazing allotments.

Table 47. Evaluated wilderness characteristics of the B13 – Wahoo North area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (RECREATION) MODERATE (SOLITUDE)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	11.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- A section of the Continental Divide National Scenic Trail passes through this area.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.

- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- This area is moderate in opportunities for solitude and high for opportunities for primitive and unconfined recreation by comparison to areas located nearby and with opportunities available elsewhere in the forest.

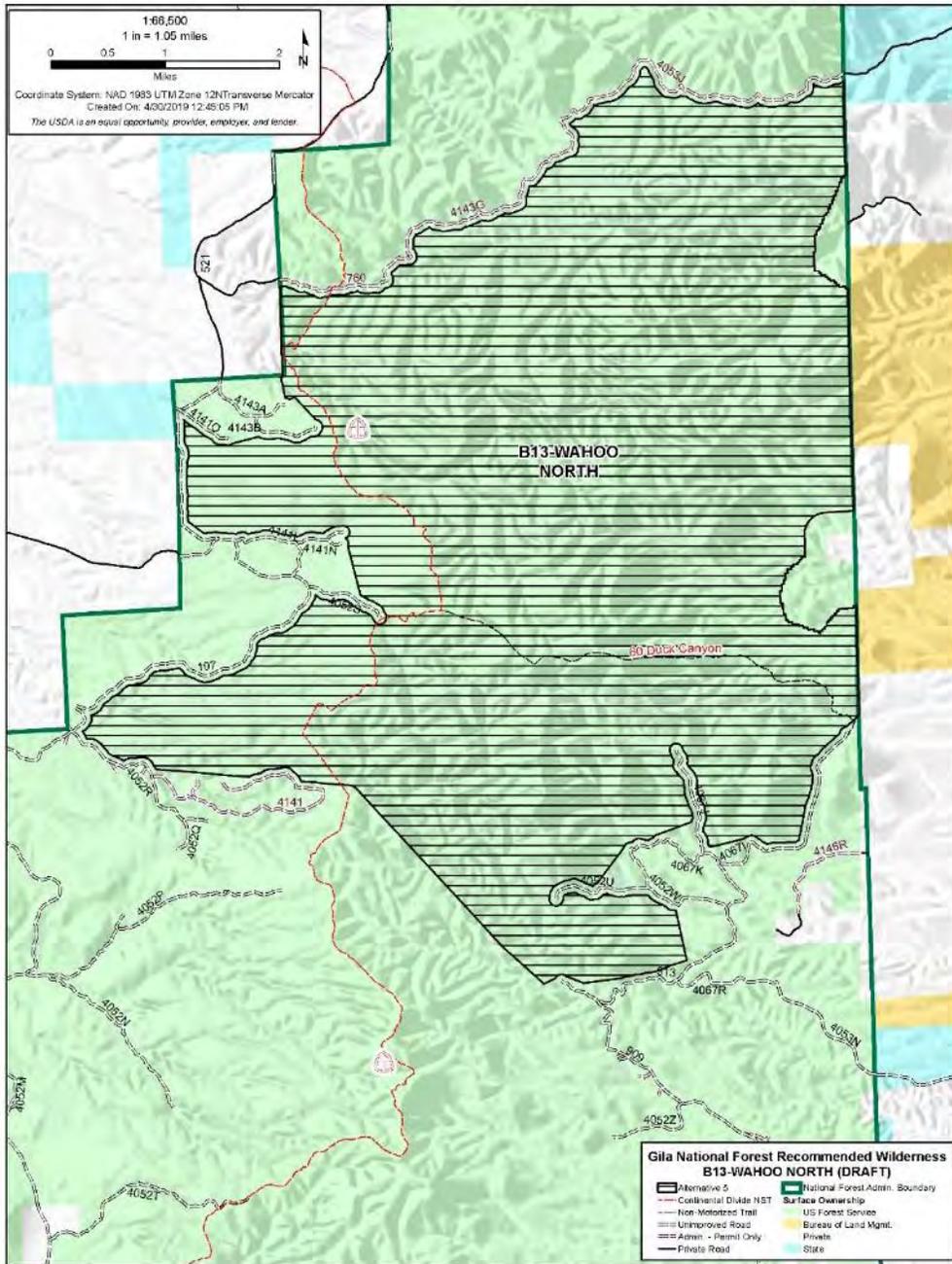


Figure 45. Recommended wilderness by alternative for B13-Wahoo North

B14 – Aldo Leopold Addition Carbonate Creek

Alternative 2 - 2,819 acres, alternative 3 - 3,592 acres, alternative 5 - 4,546 acres, for detailed boundary locations see figure 46.

Location and Boundaries: The B14 – Aldo Leopold Addition Carbonate Creek area is located in east-central portion the Black Range Ranger District in Sierra County, New Mexico, and is contiguous with the Aldo Leopold wilderness. This area’s west boundaries are shared with the Aldo Leopold Wilderness, of which it would be an addition if designated by Congress. Northern, eastern, and southern boundaries are generally determined by adjacent roads and private property boundaries, but with significant adjustments made to exclude defensible space, existing mining claims and past areas of development.

General description: This area consists mostly of rugged, mountainous terrain dissected by canyons and drainages within a classic southwestern mountains forest of with piñon-juniper, ponderosa pine, and mixed conifer occurring depending upon elevation and aspect. Parts of the area have seen past mining activity, and there are private property inholdings.

Current Uses and Management:

- ROS Settings: Under all alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting, with small areas of primitive next to the wilderness boundary and semi-primitive motorized on the eastern boundary. Alternative 5 has more semi-primitive motorized settings than alternatives 2 and 3.
- Less than half of this area is within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Kingston grazing allotment.

Table 48. Evaluated wilderness characteristics of the B14 – Aldo Leopold Addition Carbonate Creek area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (RECREATION) HIGH (SOLITUDE)	8
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	HIGH	14

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.

- This area is manageable due to being contiguous to existing wilderness, its relative size, manageable boundaries, and absence of known conflicting existing legal rights. There are some private inholdings, private property adjacent to the area, prospecting within the area as well as mining operations adjacent that could present management challenges, but area boundaries were adjusted during the analysis step of the process for alternative 2 in order to minimize their effects.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities within the area reflects very little current and past active management activity occurring within the area. Plant and animal communities visibly appear to be natural for at least 90 percent of the area.
- There is only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries. Current ecological conditions reflect that there has been very little management activity occurring within the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, not concentrated in location, and their appearance detracts very little from apparent naturalness. There are some stock tanks and roadbeds, but there is not a lot of fencing.
- This area benefits from backing on, and tying into to the existing Aldo Wilderness. The area does not see much in the way of visitation, and very good opportunities for solitude throughout much of the area.
- Opportunities for primitive and unconfined recreation are even better, with lots of trails and access into the existing wilderness, and destinations that afford views.

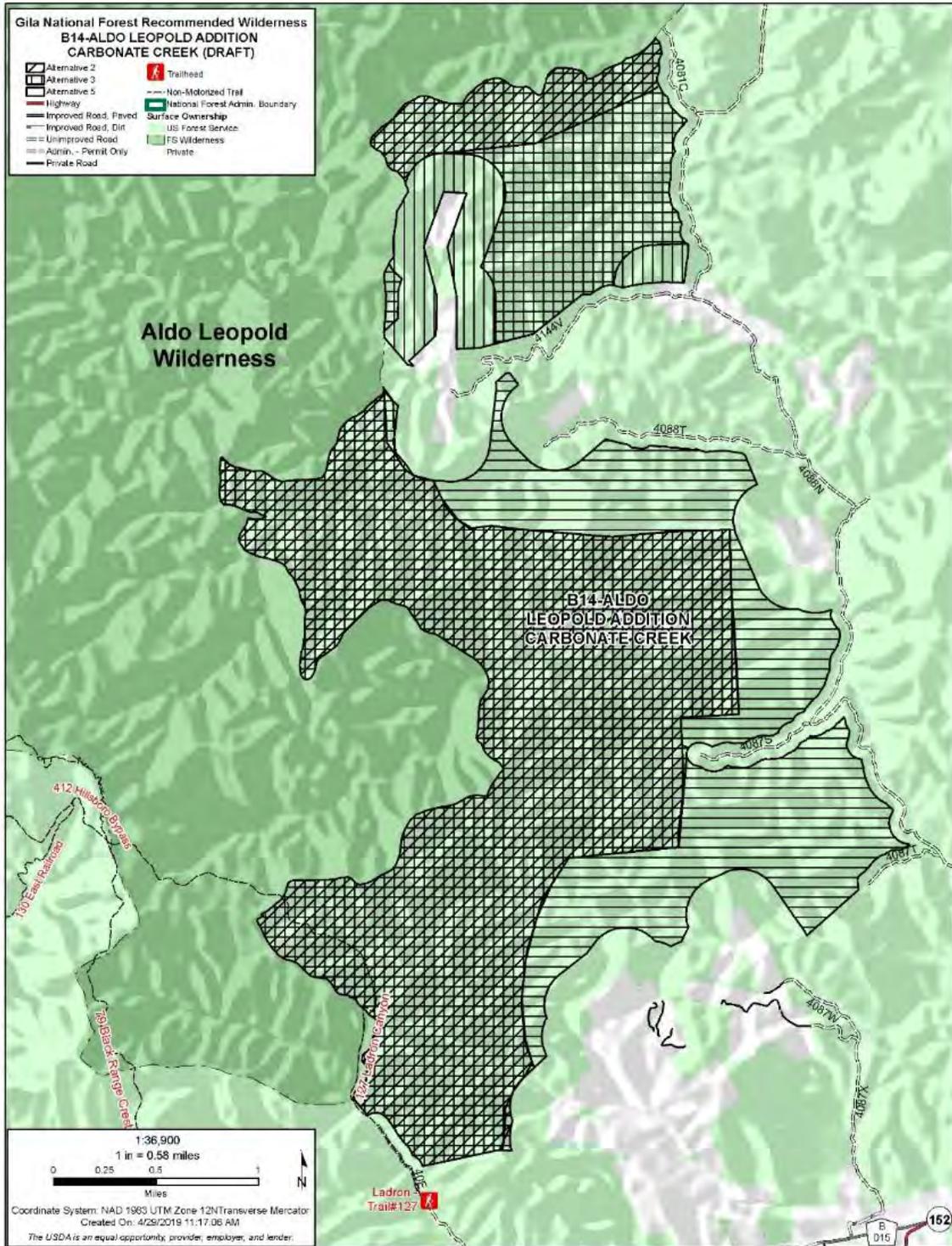


Figure 46. Recommended wilderness by alternative for B14-Aldo Leopold Addition Carbonate Creek

SB1 – Sawyer Peak

Alternative 3 – 21,007 acres, alternative 4 - 23,353 acres, alternative 5 - 39,150 acres, for detailed boundary locations see figure 47

Location and Boundaries: The SB1- Sawyer Peak area is located in the Black Range Mountains south of State Hwy 152 on the Silver City Ranger District within Grant and Sierra Counties, New Mexico. Area boundaries generally align with inventoried roadless area boundaries, with setbacks from roads and defensible space around private property, and adjustments to exclude areas found to be not manageable to protect wilderness characteristics and alternative specific-criteria exclusions.

General description: This relatively large sized area consists of primarily steep and rugged terrain, and manageable boundaries this area is manageable to protect wilderness characteristics. Vegetation in the area is a classic southwestern mountain forest of with piñon-juniper, ponderosa pine, and mixed conifer occurring depending upon elevation and aspect. Parts of the area were heavily impacted by the Silver Fire in 2012.

Current Uses and Management:

- ROS Settings: Under all three alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting, but with small areas of semi-primitive motorized and roaded natural settings, primarily near area boundaries.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Gallinas, Cold/Hot Springs, Berenda, and Carrizo grazing allotments.

Table 49. Evaluated wilderness characteristics of the SB1 – Sawyer Peak area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (SOLITUDE) HIGH (RECREATION)	8
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	13.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3, 4, and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.
- It was determined that due to its relatively large size, rugged terrain, and manageable boundaries this area is manageable to protect the wilderness characteristics it contains.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area does not reflect a great deal of active management activity occurring within the area, and the composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.
- Current ecological conditions reflect that there has been very little management activity occurring within the area. Modern human land management activity is not noticeable in most locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and some improvements contribute to a limited extent to the historical character and cultural context of the area.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is exceptionally low. Terrain, vegetation cover, and low use throughout the area all contribute to excellent opportunities for solitude.
- There are few limitations to the types and pursuit of primitive recreation opportunities available, and there are few management restrictions to confine recreation pursuits. Some trails area also available to provide very good recreation opportunities.

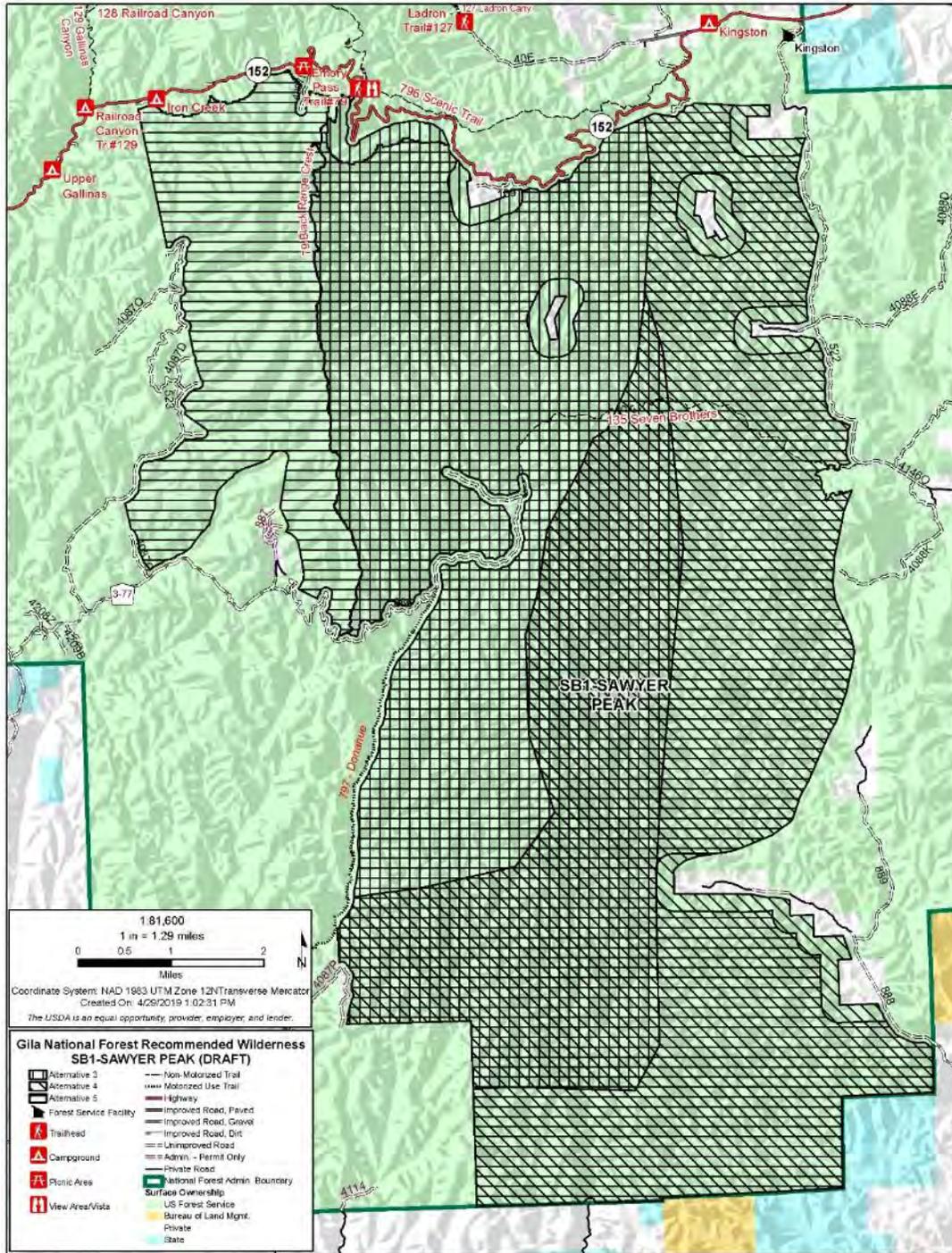


Figure 47. Recommended wilderness by alternative for SB1-Sawyer Peak

S1 – Mogollon Box/Tadpole Ridge

Alternative 3 - 930 acres, alternative 4 - 4,856 acres, alternative 5 - 46,437 acres, for detailed boundary locations see figure 48.

Location and Boundaries: The S1 – Mogollon Box/Tadpole Ridge area is located in the northern portion of the Silver City Ranger District, in Grant County New Mexico, with a large part of the area sharing a boundary with the Gila Wilderness. The area boundaries generally consist of setbacks from roads and private property, allowing for defensible space in the event of wildfires. The area shares its boundary to the north with the existing Gila Wilderness, of which it would become an addition if designated by congress.

General description: This is a large area of moderate to steep and rugged terrain, with deep rugged canyons in some areas. Vegetation consists of a classic southwestern mountains forest mix of piñon-juniper, ponderosa pine, and mixed conifer, each generally occurring depending upon elevation and slope aspect. The Gila River, Turkey Creek, Mogollon Creek, Bear Creek and Cherry Creek all pass through the area, and it contains a number of trails including Tadpole Ridge #232, Sycamore Canyon #234, Goose Lake #238, and Dorsey Canyon #239. The area also contains the Turkey Creek proposed Research Natural Area (RNA) that was initially proposed in the 1986 plan, and that proposal will be carried forward under the current plan revision.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed for primitive and semi-primitive non-motorized settings, with some areas of semi-primitive motorized and roaded natural near area boundaries in alternative 5.
- This area is entirely within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future.
- Permitted commercial grazing occurs within the area, which is part of the Watson Mountain, Brock Canyon, Spar Canyon, Reading Mountain, Bear Creek, and Walnut Creek grazing allotments.

Table 50. Evaluated wilderness characteristics of the S1 – Mogollon Box/Tadpole Ridge area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (SOLITUDE) HIGH (RECREATION)	8
Step 5 – Other Features of Value	HIGH	3
Overall Rank of Wilderness Characteristics	OUTSTANDING	17

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3, 4, and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including the Turkey Creek proposed RNA in the western section, which is also home to big horn sheep. There are scenic river bluffs, canyons, and rock formations, particularly around the Gila River in the western portion, and the scenic Cherry Creek area to the east. The area also contains a number of Mexican Spotted Owl PACS, and provides habitat to several T&E species that are known to be present.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects little active management activity occurring within the area, and the composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.
- Current ecological conditions reflect that there has been very little management activity occurring within the area, although there has been some past logging north of Tadpole Pole Ridge inventoried roadless area boundary. However, modern human land management activity is not noticeable in most locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, not concentrated in location, do not appear modern, and/or they contribute to the historical character and cultural context of the area and their appearance detracts very little from apparent naturalness.
- Due to its remoteness, lack of easy accessibility to many areas, its overall large size and adjacency to existing wilderness, this area affords excellent opportunities for solitude throughout. There are system trails that provide access to much of the area.

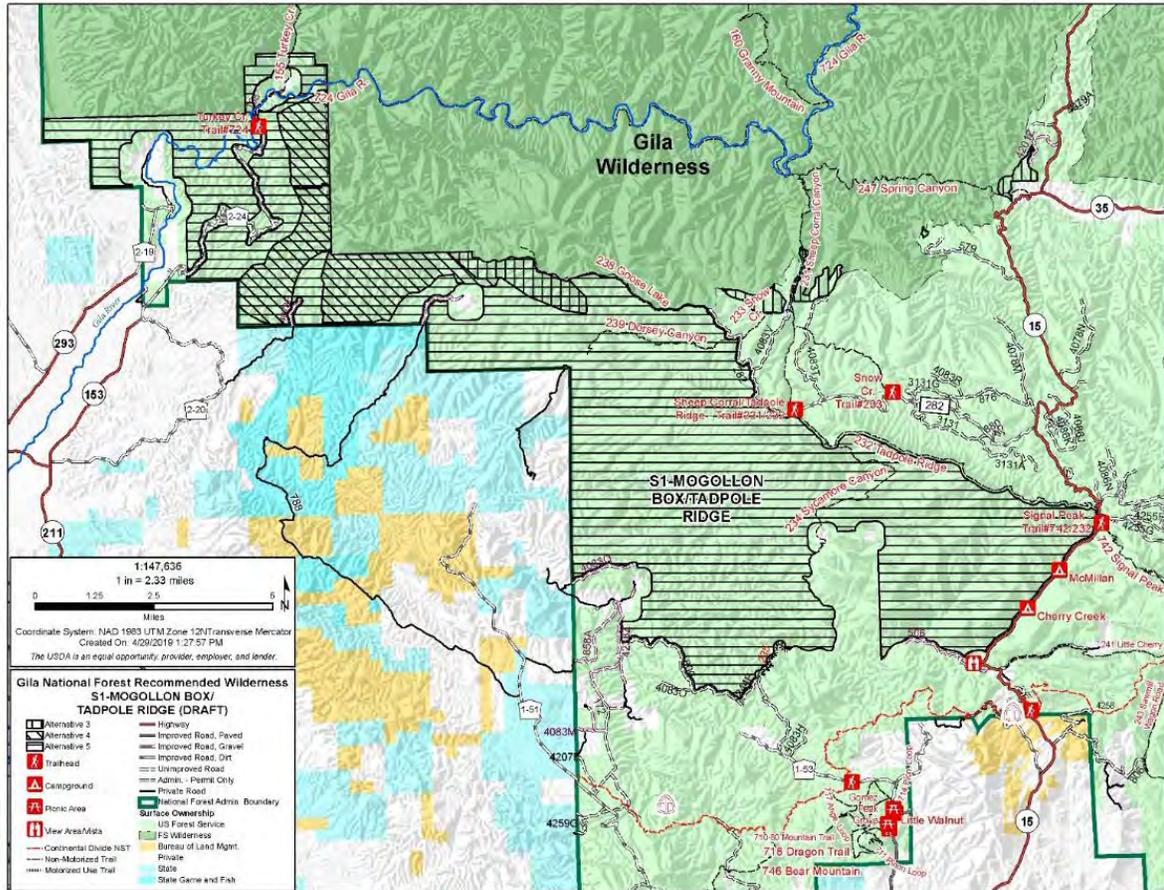


Figure 48. Recommended wilderness by alternative for S1-Mogollon Box/Tadpole Ridge

S2 – Gila Middle Box

Alternative 5 - 24,523 acres, for detailed boundary locations see figure 49.

Location and Boundaries: The S2- Gila Middle Box area is located in the Burro Mountains unit in the southeastern Silver City Ranger District in Grant County, New Mexico. Area boundaries are generally determined by setbacks from the forest boundaries to the north, northeast, and northwest, setbacks from adjacent private property for defensible space, and setbacks from forest system roads, and with significant adjustments made to coincide with the inventoried roadless area boundaries in most locations to exclude areas that were determined to not be manageable to protect wilderness characteristics.

General description: The Gila River passes through this area before leaving the forest and flowing into Arizona. This area consists of rugged, mountain and canyon terrain, with lush riparian vegetation within the river corridor and the primary vegetation type outside of the river corridor piñon-juniper semi-desert, sometimes thick, and with some Ponderosa pine stringers. The Continental Divide National Scenic Trail passes through the area, and Bird Sanctuary Trail #745 follows the river corridor as far as Faucet Canyon. This area also contains the Gila River Research Natural Area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with small areas of roaded natural setting along the access road to the Gila Bird Habitat Management Area and along the eastern boundary.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain being too steep for previous, current, or future vegetation treatments.
- Permitted commercial grazing occurs within the area, which is part of the Gila River, Mangas/Silverdale, and Little Rough grazing allotments.

Table 51. Evaluated wilderness characteristics of the S2 – Gila Middle Box area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (PRIMITIVE/UNCONFINED REC)	7
Step 5 – Other Features of Value	OUTSTANDING	4
Overall Rank of Wilderness Characteristics	OUTSTANDING	16

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including The Gila River Middle Box, considered an outstanding whitewater boating opportunity (Class III). The Continental Divide National Scenic Trail and a Research Natural Area are also within the area. Geological formations along the river, especially within the Middle Box are unique and provide outstanding scenery. Several T&E species with critical habitat occur along the Gila River, and the area contains a significant number of acres of the Desert Willow ERU (766 acres), which is currently under-represented within designated areas on the Gila National Forest. Multiple cultural resources are located within this area including spectacular rock art.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area. Composition along the river is good, visibly consistent with what would be there by forest type.
- Modern human land management activity is noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and generally is concentrated in some locations.
- Solitude opportunities are moderate in comparison to those available nearby and elsewhere in the Forest, but are better in the river corridor than elsewhere within the area.
- Boating opportunities through the Middle Box on the Gila River is a unique experience for the Gila region. There are very good hiking opportunities on the CDT and along the river. The river also affords good opportunities for fishing.

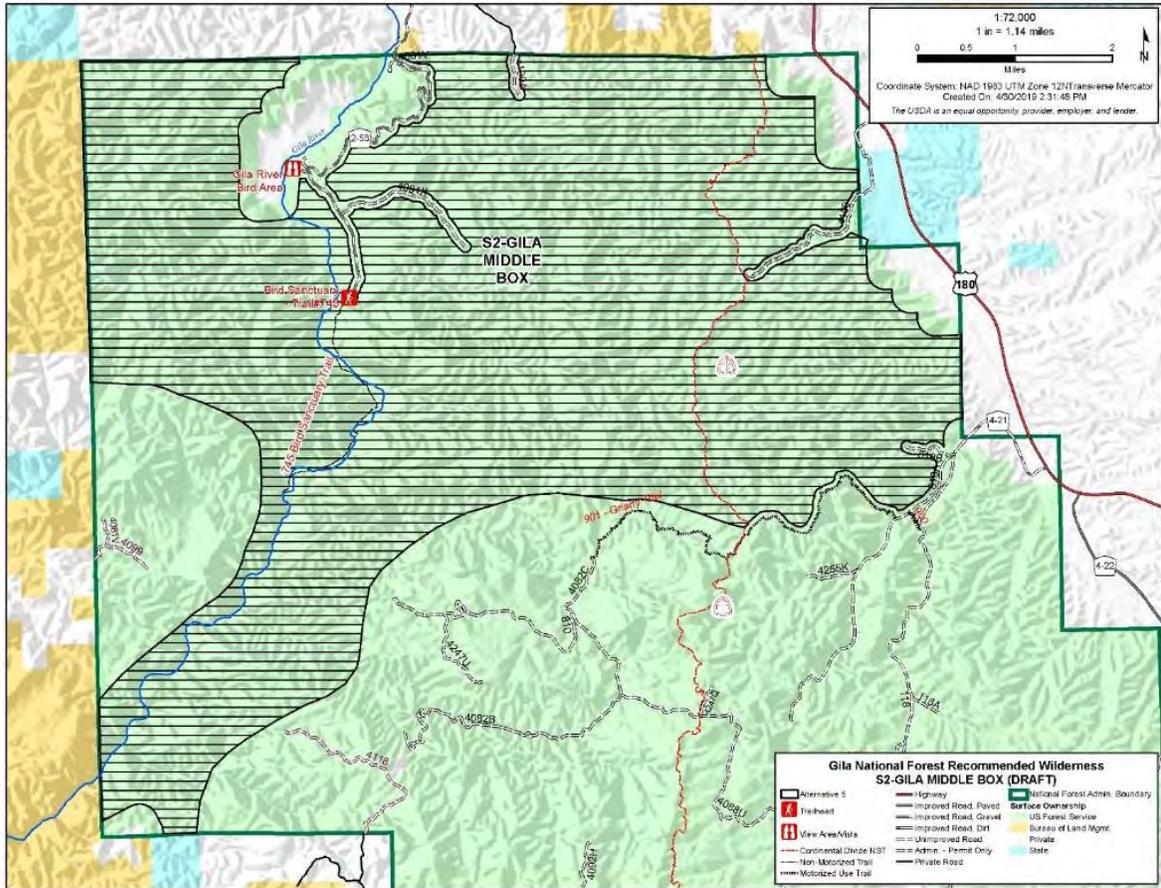


Figure 49. Recommended wilderness by alternative for S2-Gila Middle Box

S3 – Bear Mountain

Alternative 5 - 10,056 acres, for detailed boundary locations see figure 50.

Location and Boundaries: The S3- Bear Mountain area is located in the eastern Silver City Ranger District, just to the west of the Little Walnut Recreation Area, in Grant County, New Mexico. Area boundaries are primarily determined on all sides by setbacks for defensible space for adjacent private ownership and setbacks for forest system roads. The area boundary coincides with the forest proclamation boundary to the southeast.

General description: The primary vegetation type is piñon-juniper with pine stringers in the drainages. The area contains several prominent peaks of the Silver City Range, but much of it is also open gentle terrain. The level of trail density is high on the eastern end at the recreation area. Prominent features within the area include Gomez Peak, Bear Mountain, and Stewart Peak. There is a popular, high-density trail system in the vicinity of Gomez Peak, adjacent to the Little Walnut Recreation Area, and a popular section of the Continental Divide National Scenic Trail passes through the area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with an area of semi-primitive motorized to the north, roaded natural to the northeast, west, and south, and rural setting to the east.
- None of this area is within Inventoried Roadless Area (IRA), and therefore is not currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the Bear Creek, Walnut Creek, and Silver City Watershed grazing allotments.

Table 52. Evaluated wilderness characteristics of the S3 – Bear Mountain area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (RECREATION) MODERATE (SOLITUDE)	5
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including a popular section of the Continental Divide Trail, has scenic value with prominent peak Bear Mountain serving as a local landmark, and historic value with a number of Civilian Conservation Corps (CCC) installed check dams.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and tend to be concentrated in some locations.
- This area has moderate opportunities for solitude in comparison to what is available in nearby locations and elsewhere on the Forest.
- There are good non-motorized trail opportunities on the section of the Continental Divide National Scenic Trail that passes through the area.

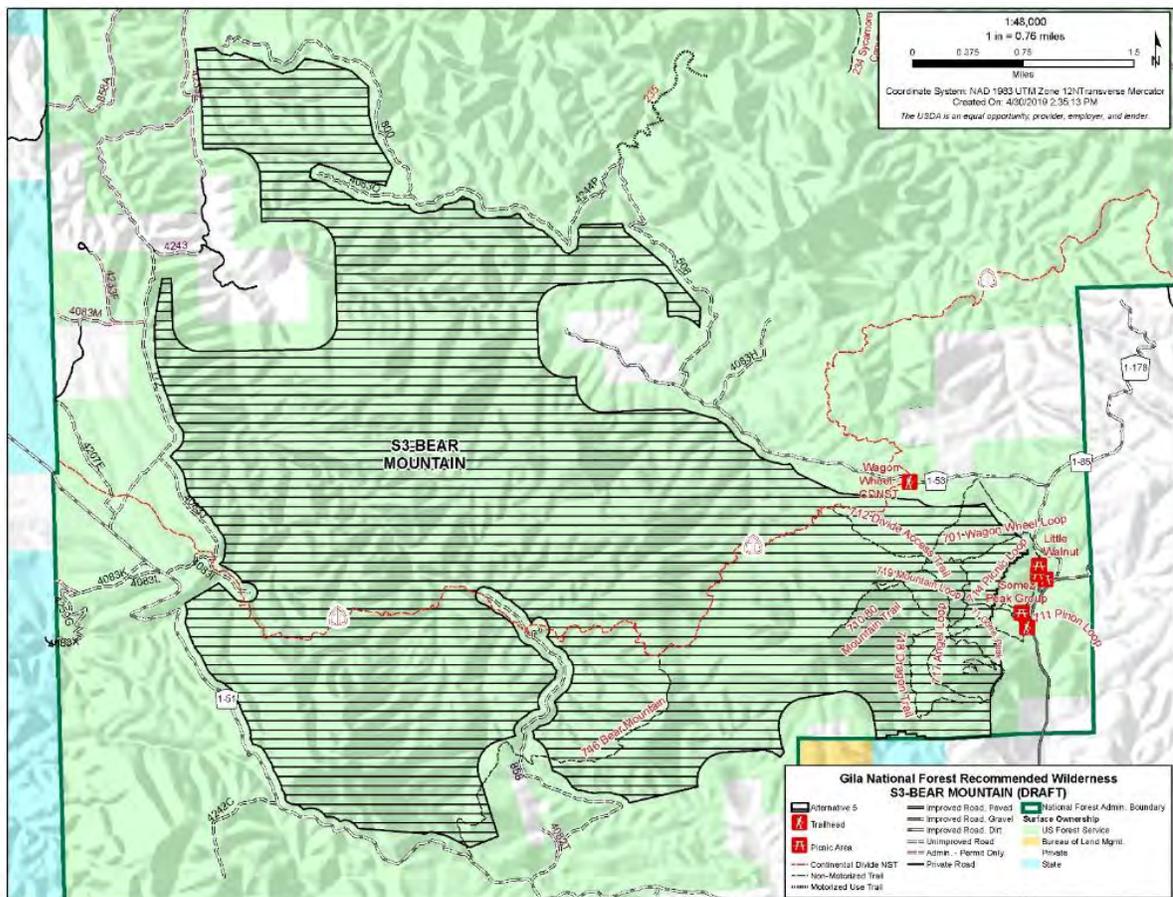


Figure 50. Recommended wilderness by alternative for S3-Bear Mountain

S4 – North Burros

Alternative 5 - 15,556 acres, for detailed boundary locations see figure 51.

Location and Boundaries: The S4 - North Burros area is located in the Burro Mountains unit of the Forest on the Silver City Ranger District within Grant County, New Mexico. Area boundaries are determined by the forest boundary and small sections of forest system roads to the west, setbacks from forest system roads to the north, east, and southeast, and by adjustments for defensible space for adjacent private lands to the south and southeast.

General description: This is a moderately sized area of moderate to very steep and rugged mountain and canyon terrain. Vegetation cover is primarily piñon-juniper, with some areas of ponderosa pine, but it also contains small areas of both Desert Willow and Little Walnut-Ponderosa Pine ERUs, both of which are under-represented vegetation types within currently designated areas on the Forest. The Continental Divide National Scenic Trail passes through the eastern parts of the area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, with areas of semi-primitive motorized near the north, east, and southeastern boundaries, and roaded natural setting near the south boundary.
- None of this area is located within Inventoried Roadless Area (IRA), and therefore no part of the area is currently managed to protect roadless characteristics.
- Very little management activity has occurred within much of the area the area, and would be unlikely to occur in the future, mostly due to precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Bullard Peak grazing allotment.

Table 53. Evaluated wilderness characteristics of the S4 – North Burros area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	NONE	1
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including the presence of small acreages of both Desert Willow and Little Walnut-Ponderosa Pine ERUs, both of which are under-represented vegetation types within the currently designated areas in the forest.
- A section of the Continental Divide National Scenic Trail passes through this area.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area, particularly within areas with steep slopes and rugged terrain.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and are concentrated in some locations.
- Solitude and primitive and unconfined recreation opportunities are considered to be moderate in comparison to those available at nearby locations and elsewhere in the forest.

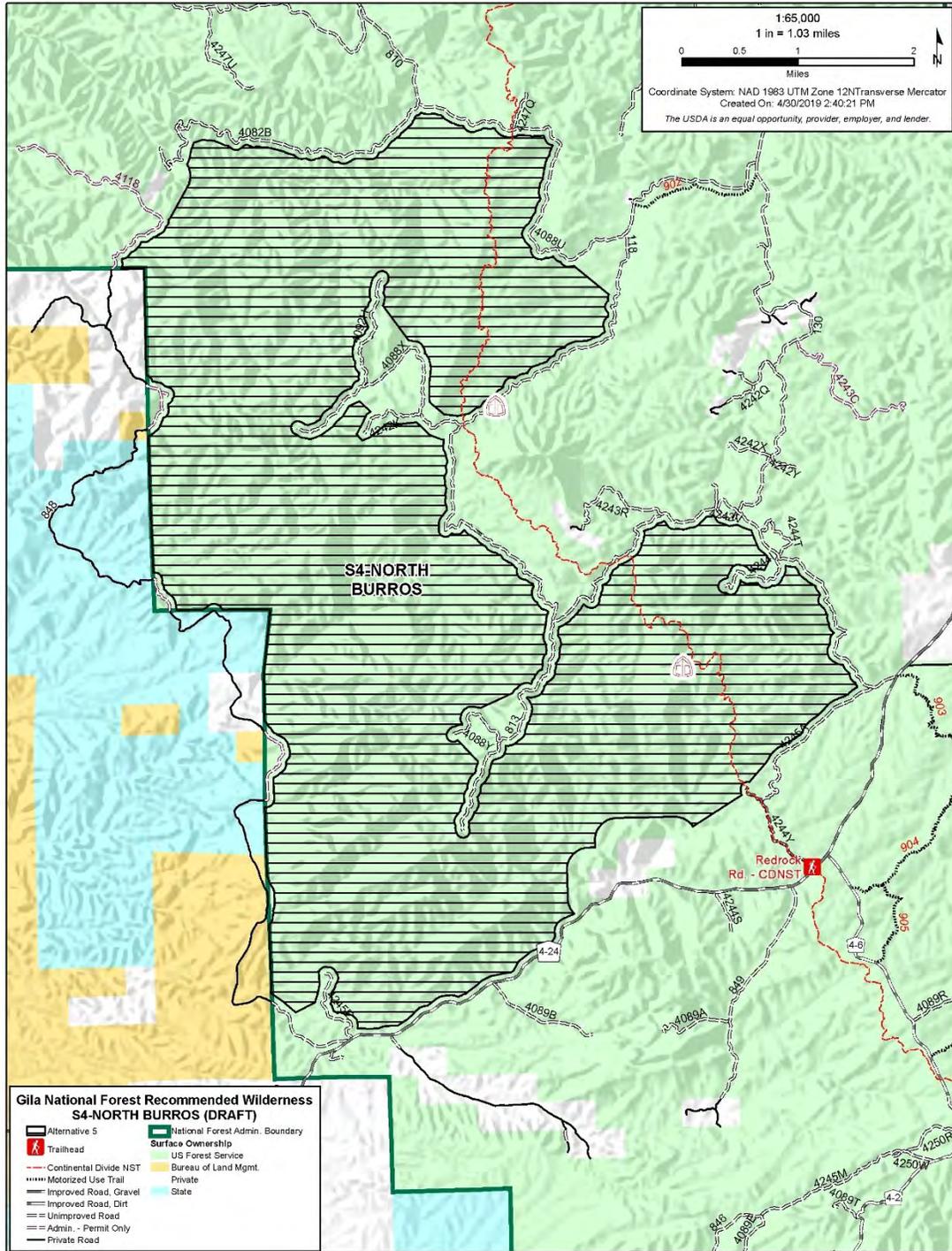


Figure 51. Recommended wilderness by alternative for S4-North Burros

S5 – Saddle Rock

Alternative 5 - 6,519 acres, for detailed boundary locations see figure 52.

Location and Boundaries: The S5 - Saddle Rock area is located in the Burro Mountains unit of the Forest in the Silver City Ranger District, just to the east of the actual formation named Saddle Rock, and within Grant County, New Mexico. Area boundaries are determined on the east by the forest boundary and forest system roads, and by setbacks from forest system roads to the north and west, and setbacks for defensible space to adjacent private lands and County Road 4-22 to the south and southeast. However, significant adjustment was made to the southwest to exclude an area determined to be not manageable to protect wilderness characteristics.

NOTE: At the time the area boundaries for S5 – Saddle Rock were determined for the inventory and analysis process, it was unknown that the Rabbit Trap recommendation for research natural area designation would be carried over in the plan revision; therefore, the boundary was not adjusted to include the entire area. If this area is recommended to congress for designation, the boundary may be adjusted to include the entire recommended RNA at that time.

General description: This is a very small area of very rugged terrain, with piñon-juniper as the primary vegetation cover but with significant acreages of Desert Willow. The area contains a portion of the Rabbit Trap recommended RNA from the 1986 plan, and this recommendation will also be carried into the revised plan.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting with smaller areas of roaded natural to the south and southeast, and semi-primitive motorized to the east and south.
- None of this area is located within Inventoried Roadless Area (IRA), therefore none of the area is currently managed to protect roadless characteristics.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Mangas/Silverdale and Bullard Peak grazing allotments.

Table 54. Evaluated wilderness characteristics of the S5 – Saddle Rock area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (RECREATION) LOW (SOLITUDE)	3
Step 5 – Other Features of Value	NONE	1.5
Overall Rank of Wilderness Characteristics	MODERATE	9.8

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

- Other Features of Value are present within the area, including the Rabbit Trap recommended research natural area, and the presence of significant acreages of Desert Willow ERU, which is an under-represented vegetation type within currently designated areas on the Forest.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and concentrated in some locations.
- Opportunities for primitive and unconfined recreation are moderate as compared to those available on other locations within the forest.

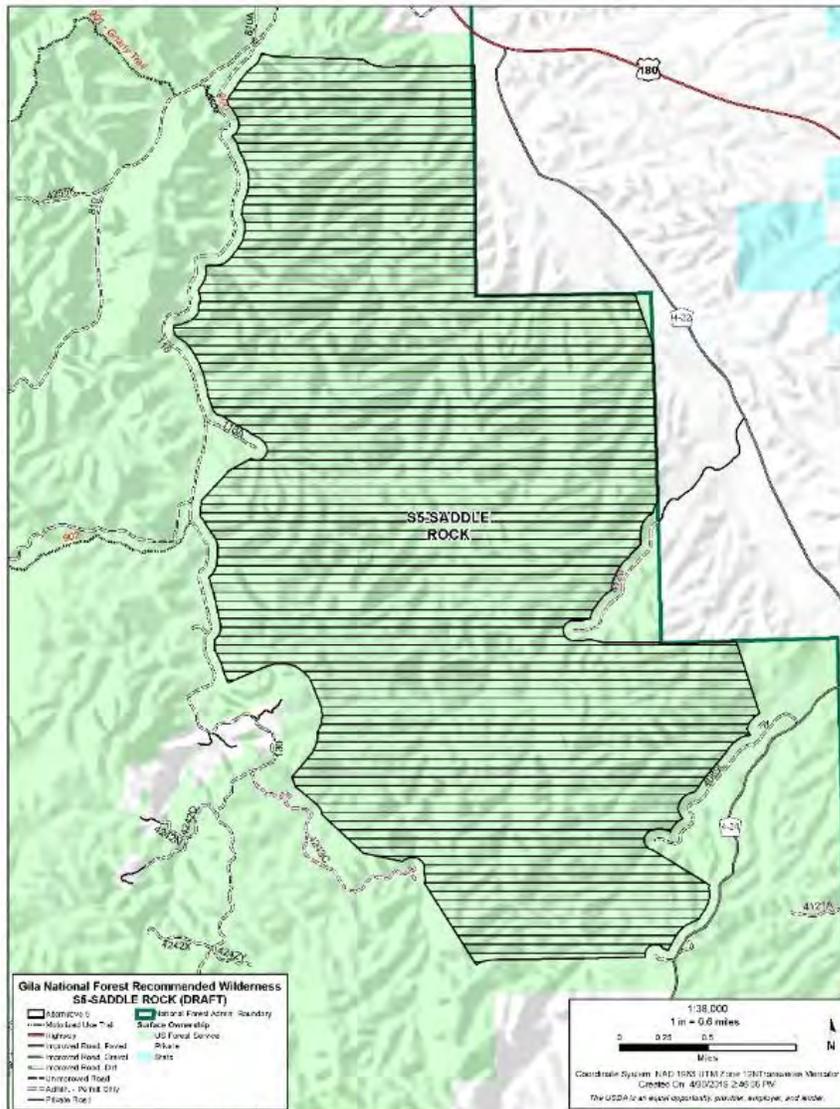


Figure 52. Recommended wilderness by alternative for S5-Saddle Rock

S6a – Gila Additions Southwest

Alternative 3 - 11 acres, Alternative 4 - 120 acres, Alternative 5 - 447 acres for detailed boundary locations see figure 53.

Location and Boundaries: The S6a – Gila Additions Southwest areas is located in close proximity with S6b, and S6d and contiguous to the existing Gila Wilderness, in the north-central region of the Silver City Ranger District in Silver City, New Mexico. Area boundaries are common with the Gila wilderness boundary to the north, and generally are setbacks from forest system roads and state highway to the west, south and east, with adjustments to accommodate exclusions in alignment with individual alternative criteria.

General description: The S6a, S6b, and S6d – Gila Additions Southwest areas are located in close proximity and are each contiguous to the existing Gila Wilderness, as are similar in the wilderness characteristics they possess, and therefore were grouped together for evaluation. These areas consist of moderate to very rugged terrain, with areas of steep slopes and drainages. Vegetation is primarily piñon-juniper and ponderosa pine-oak, depending upon elevation and slope aspect. If designated by Congress, this area would become an addition to the Gila Wilderness.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed for a roaded natural setting, with small areas of semi-primitive, non-motorized setting near the wilderness boundary.
- This area is entirely within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Redstone grazing allotment.

Table 55. Evaluated wilderness characteristics of the S6a – Gila Additions Southwest area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3, 4, and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Although the current composition of plant and animal communities within the area reflects active management activity occurring within the area, the composition of plant and animal communities appears natural in the majority of the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and may be concentrated in certain locations.
- Opportunities for solitude are attainable throughout these areas, but there is a great deal of use during hunting season. Although the areas are adjacent to wilderness, due to terrain and a lack of trails, they does not provide good wilderness access. Solitude is also limited by the areas’ size, and close proximity to roads that are popular for dispersed camping.

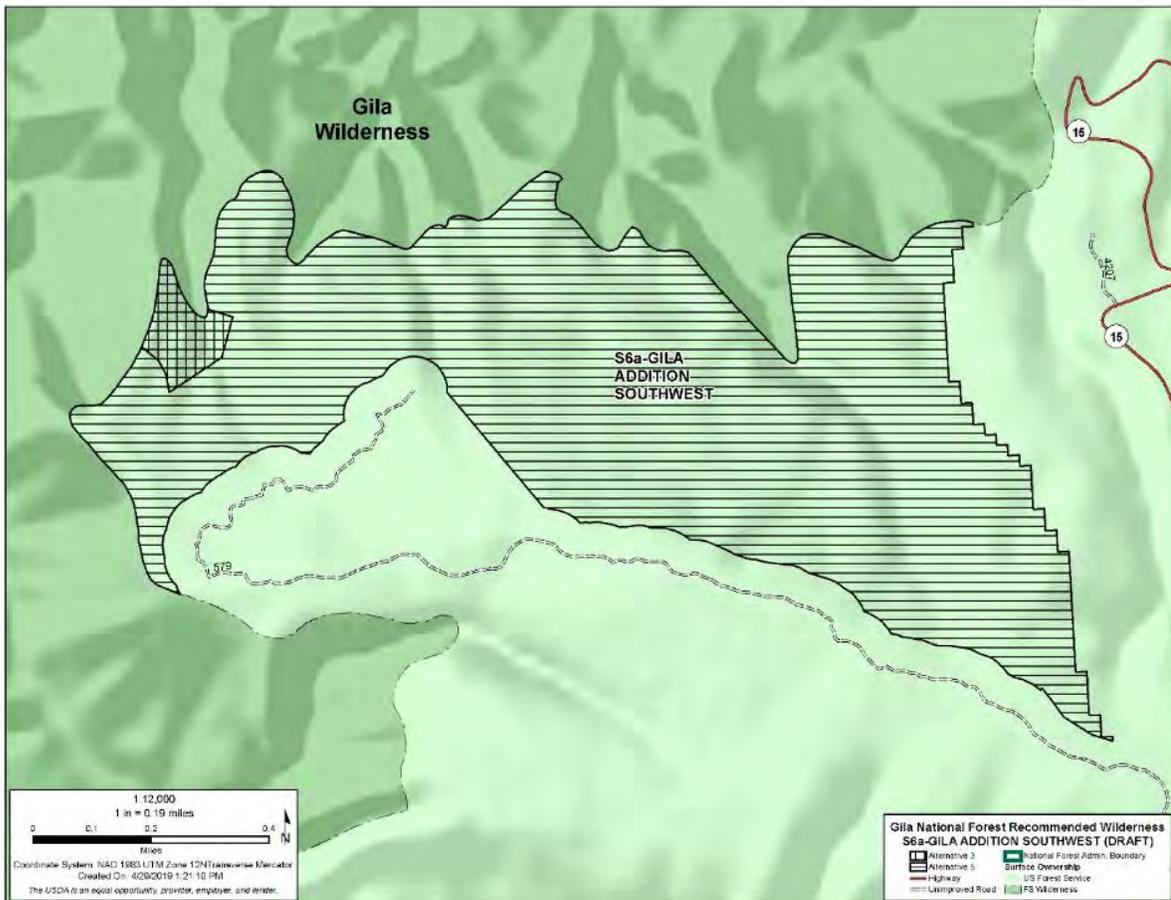


Figure 53. Recommended wilderness by alternative for S6a-Gila Addition Southwest

S6b – Gila Addition Southwest

Alternative 3 - 270 acres, alternative 5 - 4,558 acres, for detailed boundary locations see figure 54.

Location and Boundaries: The S6b – Gila Additions Southwest areas is located in close proximity with S6a and S6d and contiguous to the existing Gila Wilderness, in the north-central region of the Silver City Ranger District in Silver City, New Mexico. Area boundaries are common with the Gila wilderness boundary to the north, and generally are setbacks from forest system roads and a motorized system trail to the west, south and east, with adjustments to accommodate exclusions in alignment with individual alternative criteria.

General description: The S6a, S6b, and S6d – Gila Additions Southwest areas are located in close proximity and are each contiguous to the existing Gila Wilderness, as are similar in the wilderness characteristics they possess, and therefore were grouped together for evaluation. These areas consist of moderate to very rugged terrain, with areas of steep slopes and drainages. Vegetation is primarily piñon-juniper and ponderosa pine-oak, depending upon elevation and slope aspect. Cow Creek and Trout Creek pass through this area, as well part of Snow Creek Trail #233. This area would become an addition to the Gila Wilderness if Congress were to designate it.

Current Uses and Management:

- ROS Settings: Under alternative 3, this area is managed for semi primitive motorized and semi-primitive non-motorized settings. In alternative 5, the area is predominantly managed for semi-primitive non-motorized settings, with semi-primitive motorized areas near the eastern boundary and roaded natural along northeast and southeast boundaries.
- Less than half of his area is located within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Cow Creek and Redstone grazing allotments.

Table 56. Evaluated wilderness characteristics of the S6b – Gila Addition Southwest area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3 and 5 though in some instances with differing boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Although the current composition of plant and animal communities within the area reflects active management activity occurring within the area, the composition of plant and animal communities appears natural in the majority of the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and may be concentrated in certain locations.
- Opportunities for solitude are attainable throughout these areas, but there is a great deal of use during hunting season. Although the areas are adjacent to wilderness, due to terrain and a lack of trails, they does not provide good wilderness access. Solitude is also limited by the areas’ size, and close proximity to roads that are popular for dispersed camping.

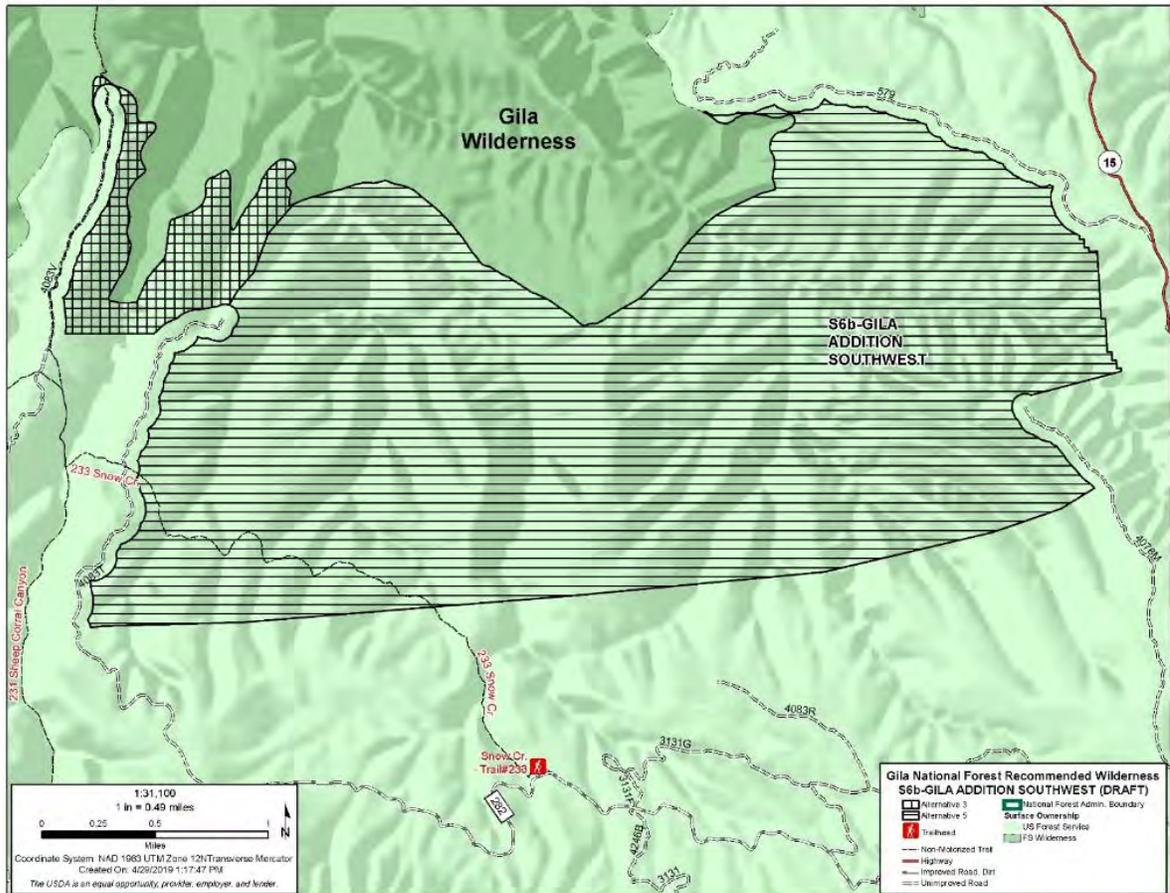


Figure 54. Recommended wilderness by alternative for S6b-Gila Addition Southwest

S6d – Gila Additions Southwest

Alternative 3 - 248 acres, alternative 5 - 1,040 acres, for detailed boundary locations see figure 55.

Location and Boundaries: The S6d – Gila Addition Southwest areas is located in close proximity with S6a and S6b and contiguous to the existing Gila Wilderness, in the north-central region of the Silver City Ranger District in Silver City, New Mexico. Area boundaries are common with the Gila wilderness boundary to the north, and generally are setbacks from forest system roads to the west, south and east, with adjustments excluding areas not manageable to protect wilderness characteristics and to accommodate exclusions in alignment with individual alternative criteria.

General description: The S6a, S6b, and S6d – Gila Additions Southwest areas are located in close proximity and are each contiguous to the existing Gila Wilderness, as are similar in the wilderness characteristics they possess, and therefore were grouped together for evaluation. These areas consist of moderate to very rugged terrain, with areas of steep slopes and drainages. Vegetation is primarily piñon-juniper and ponderosa pine-oak, depending upon elevation and slope aspect. Part of the Dorsey Canyon Trail #239 passes through the area. The area would be an addition to the existing Gila Wilderness if it were to be designated by Congress.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed for semi-primitive non-motorized and semi-primitive motorized settings.
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Cow Creek grazing allotment.

Table 57. Evaluated wilderness characteristics of the S6d – Gila Additions Southwest area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	4
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	9

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3 and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Although the current composition of plant and animal communities within the area reflects active management activity occurring within the area, the composition of plant and animal communities appears natural in the majority of the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and may be concentrated in certain locations.
- Opportunities for solitude are attainable throughout these areas, but there is a great deal of use during hunting season. Although the areas are adjacent to wilderness, due to terrain and a lack of trails, they does not provide good wilderness access. Solitude is also limited by the areas’ size, and close proximity to roads that are popular for dispersed camping.

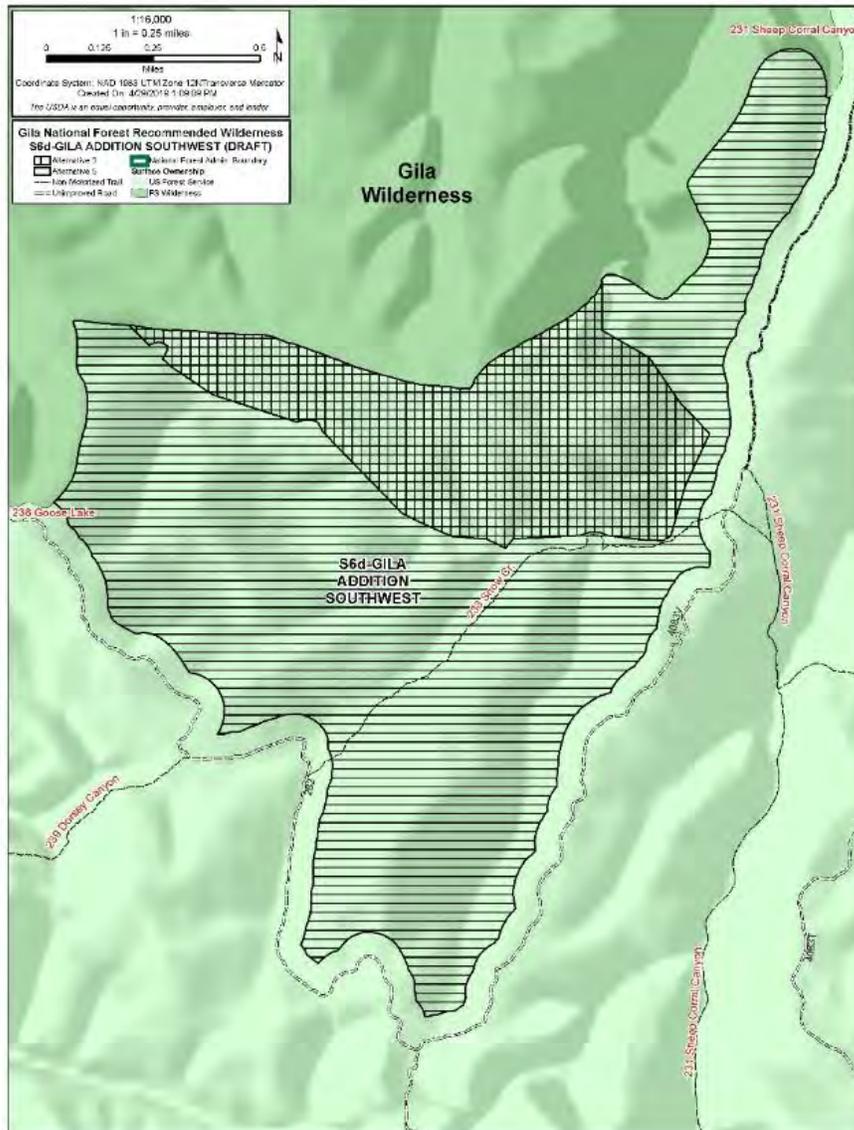


Figure 55. Recommended wilderness by alternative for S6d-Gila Addition Southwest

S7 – Burro Peak

Alternative 5 - 7,319 acres, for detailed boundary locations see figure 56.

Location and Boundaries: The S7- Burro Peak area is located in the Burros Mountains unit of the Forest north of the Jack’s Peak Lookout and communications site, on the Silver City Ranger District within Grant County, New Mexico. The Ausmer/Amazon Mine (patented), and the Burro Mtn. Homestead private inholding are located nearby to the north. Boundaries to the west and south, southeast are determined by setback from forest system roads. A small area to the southwest, identified as a WUI area identified as a priority for restoration with mechanical equipment was excluded, and the boundary was adjusted to a closed, but substantially noticeable road prism. To the southeast, system roads, a powerline, and exclusions for substantially noticeable improvements join the east boundary at the forest boundary. Boundaries across the north are generally determined by setback from forest system roads, adjacent private property, and exclusion of areas not manageable at motorized system trails.

General description: This is an area of rugged, often steep terrain dissected by deep drainages and canyons. The primary vegetation throughout type is piñon-juniper, but there are areas of desert willow as well. A section of the Continental Divide National Scenic Trail passes through the eastern portion of the area. Higher peaks in the area include Jack’s Peak, Ferguson Mountain, and Burro Peak.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive non-motorized setting, but with areas of roaded natural settings along the western boundary, and areas of semi-primitive motorized along the south, east, and north boundaries.
- This area is not located within any Inventoried Roadless Areas (IRAs), and therefore no part of the area is currently managed to protect roadless characteristics.
- Permitted commercial grazing occurs within the area, which is part of the Burro Mountain Ferguson Mountain, and White Signal grazing allotments.

Table 58. Evaluated wilderness characteristics of the S7 – Burro Peak area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	LOW (BOTH)	2
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	6

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

S8 – Knight Peak

Alternative 5 - 5,294 acres, for detailed boundary locations see figure 57.

Location and Boundaries: The S8- Knight Peak area is located in the Burro Mountains unit of the Silver City Ranger District, within Grant County, New Mexico. The southeast boundary of the area is setback from a motorized trail #922, excluding a small area not manageable to protect wilderness characteristics. This trail is roughly parallel to, and is located just to the north of State Hwy 90, several miles west of the community of White Signal, New Mexico. The east and west boundaries of the area generally consist of setbacks from forest system roads. The north boundary generally consists of setback for defensible space with adjacent private property, and the southwest boundary is setback from forest system road and defensible space with private lands.

General description: This is a very small area barely above the general guideline of 5,000 acres set by law, policy and regulation for areas not contiguous to existing wilderness or similarly managed areas. Terrain is generally moderate with some steep mountain slopes. Knight Peak is the most prominent feature within the area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, the core of this area is managed as a semi-primitive, non-motorized setting, with areas of semi-primitive motorized settings along the southern boundary, and roaded natural on the east and west.
- This area is not within Inventoried Roadless Area (IRA), and therefore none of the area is currently managed to protect roadless characteristics.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the White Signal and Walking X grazing allotments.

Table 59. Evaluated wilderness characteristics of the S8 – Knight Peak area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	LOW (BOTH)	2
Step 5 – Other Features of Value	NONE	1
Overall Rank of Wilderness Characteristics	MODERATE	6.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including a moderately sized amount of acreage of Desert Willow ERU, which is an under-represented vegetation type within currently designated areas in the forest.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Prevalence of improvements is generally low throughout the area, and may be concentrated in some locations.
- Opportunities for solitude are considered to be low in comparison to those available in other locations nearby and in elsewhere on the Forest. There are limitations to solitude due to its small size, with a limited amount of core area.
- Although a section of the Continental Divide Trail passes through the area, primitive and unconfined recreation opportunities overall are considered to be low in comparison to those available nearby, and elsewhere in the forest.

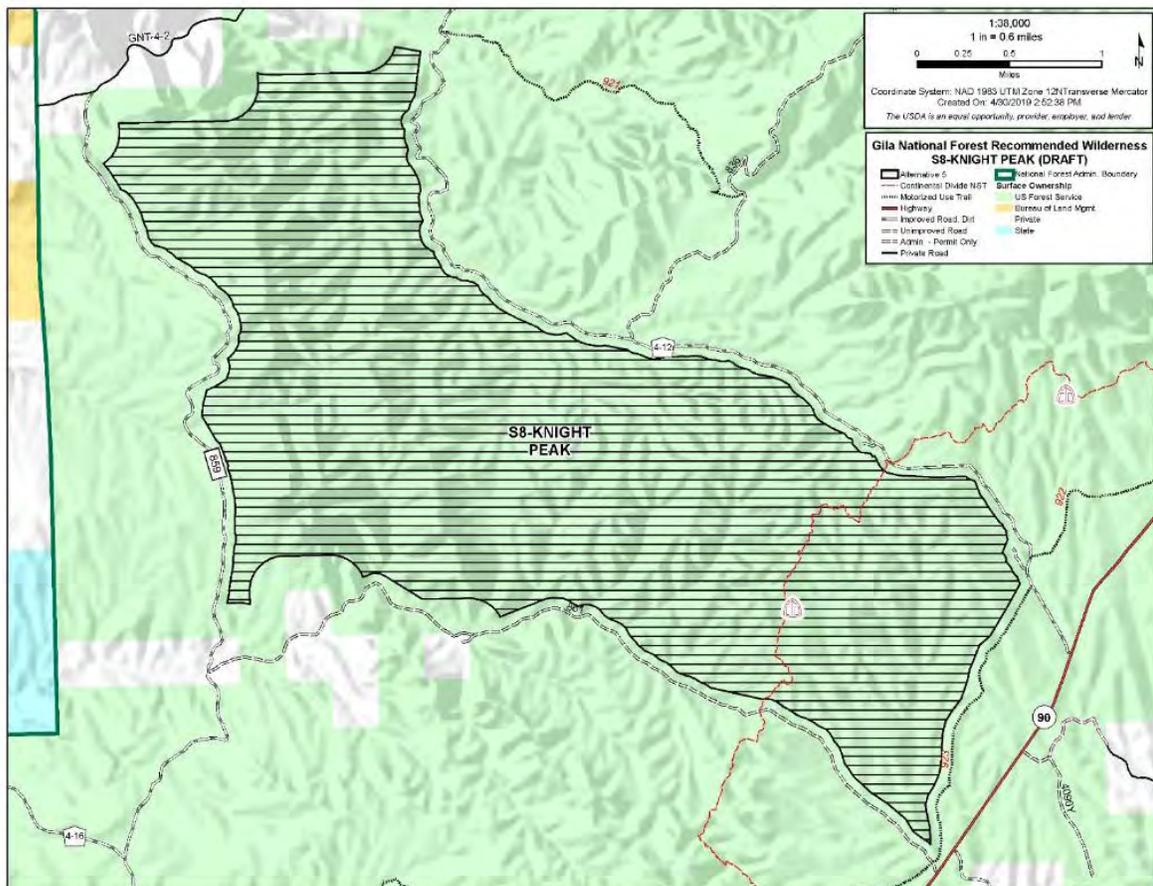


Figure 57. Recommended wilderness by alternative for S8-Knight Peak

S9 – Royal John

Alternative 5 - 6,915 acres, for detailed boundary locations, see figure 58.

Location and Boundaries: The S9 – Royal John area is located in the Black Range Mountains south of State HWY 152 in the Silver City Ranger District, within Grant County, New Mexico. The western, and most of the southern boundaries coincide with the forest proclamation boundary. The north and southeast boundaries are all determined generally by setbacks from forest system roads, and the east boundary consists of the motorized use Donahue Trail #707, with adjustments made to exclude areas determined to be not manageable to protect wilderness characteristics to the northeast.

General description: This is a small area of moderately rugged to very steep and challenging terrain, with vegetation cover consisting of a classic southwestern mountains mix of piñon-juniper, ponderosa pine-oak, and mixed conifer, with occurrence generally depending upon a combination of elevation and slope aspect. The area contains the Hot Springs Cabin.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive, non-motorized setting, with small areas of roaded natural and semi-primitive motorized settings along the northern boundary.
- This area is entirely located within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to limited access and the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Cold/Hot Springs grazing allotment.

Table 60. Evaluated wilderness characteristics of the S9 – Royal John area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	11.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

S10 – Lower Gallinas Canyon

Alternative 5 - 8,544 acres, for detailed boundary locations, see figure 59.

Location and Boundaries: The S10 – Lower Gallinas Canyon area is located in the Black Range Mountains south of State Hwy 152 and within the Silver City Ranger District, in Grant County, New Mexico. West area boundaries consist of the forest boundary, north boundary is determined by a setback from State Hwy 152 with one area setback from a forest system road, and most of the south and east boundaries are setbacks from forest system roads. A short section of the south and east boundaries consist of straight lines from system roads to outside boundaries.

General description: This is a small area of very rugged steep mountain slope and canyon terrain. Vegetation cover is a mix of piñon-juniper, ponderosa pine-oak, and mixed conifer, determined largely by elevation and slope aspect. There is also some riparian vegetation within Lower Gallinas Canyon. The permanently closed, low development Lower Gallinas Campground is located in the northwest corner of the areas. There is one trail within the area, Lower Gallinas #705, and one of the more prominent features is Haystack Mountain, and Gallinas Canyon passes through the area.

Current Uses and Management:

- ROS Settings: Under alternative 5 recommended wilderness boundaries, this area is predominantly managed as a semi-primitive, non-motorized setting, with areas of roaded natural along State Hwy 152 to the north, and forest roads to the south, and semi-primitive motorized to the east.
- This area is entirely within Inventoried Roadless Area (IRA), and is therefore currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to lack of access and the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Gallinas and Hot/Cold Spring grazing allotments.

Table 61. Evaluated wilderness characteristics of the S10 – Lower Gallinas Canyon area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	8.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternative 5, though in some instances with boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and concentrated in some locations.
- Due to its relatively small size, the opportunities for solitude within this area considered to be moderate when compared to those available nearby and at other locations throughout the forest. There is better solitude located away from the northern boundary due to the variability of terrain.
- Primitive recreation opportunities are moderate compared to those available nearby and elsewhere in the forest.

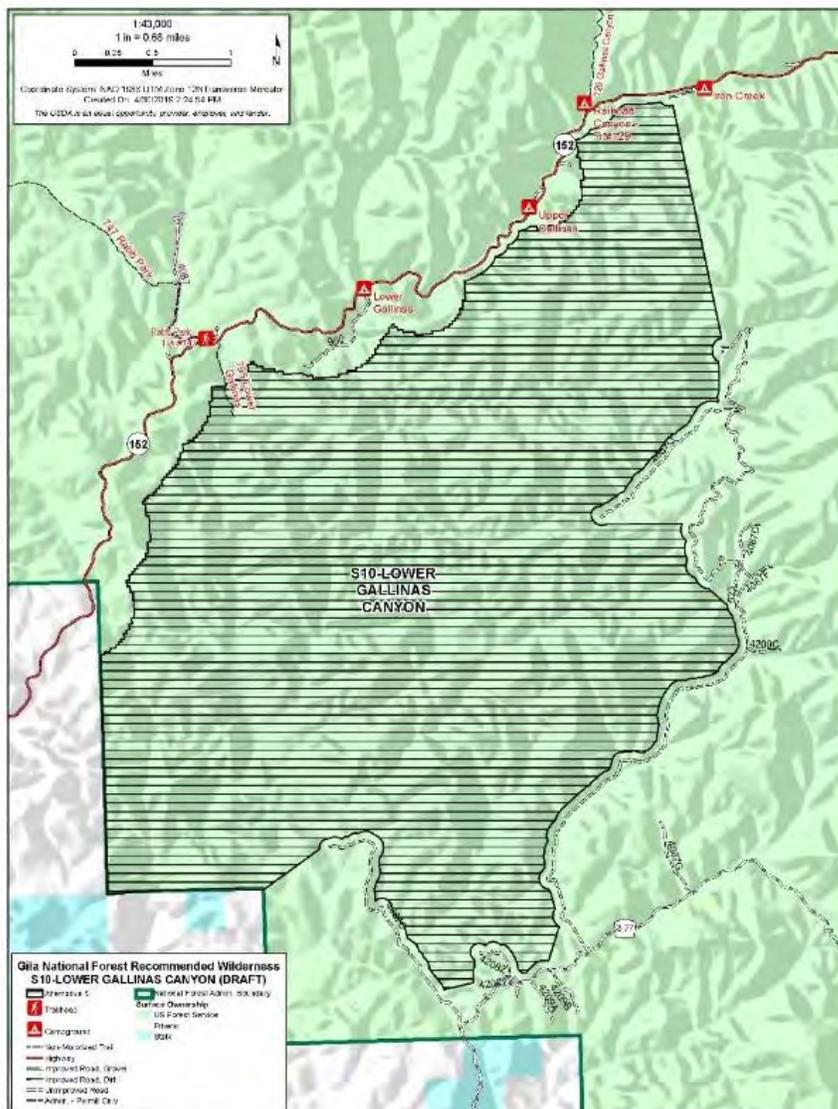


Figure 59. Recommended wilderness by alternative for S10-Lower Gallinas Canyon

SW1 – Gila Addition Sapillo

Alternative 3 - 186 acres, alternative 4 - 256 acres, alternative 5 - 128 acres, for detailed boundary locations see figure 60.

Location and Boundaries: The SW1 – Gila Addition Sapillo area is located contiguous to the existing Gila Wilderness, partially on both the Silver City and Wilderness Ranger Districts within Grant County, New Mexico. Area boundaries are generally determined by setbacks from State Hwy 15 and private property, with shared boundaries with the Gila Wilderness to the west.

General description: This small area consists of moderate to very rugged terrain, with areas of steep slopes and canyons. Vegetation is primarily piñon-juniper and ponderosa pine-oak, depending upon elevation and slope aspect. Spring Canyon Trail #247 and Sapillo Creek pass through this area. The area would become an addition to the Gila Wilderness if it were designated by Congress.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is managed for both semi-primitive non-motorized and roaded natural settings.
- This area is partly within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to a lack of access and the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Redstone grazing allotment.

Table 62. Evaluated wilderness characteristics of the SW1 – Gila Addition Sapillo area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MONDERATE (RECREATION)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	12

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3, 4, and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects very little active management activity occurring within the area, and the composition of plant and animal communities appears natural in at least 90 percent of the area.

- Current ecological conditions reflect only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries. Modern human land management activity is noticeable only in a limited number of locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, and their appearance detracts very little from apparent naturalness. Range improvements are limited to only a few fences.
- Due to the rugged terrain and adjacency to existing wilderness (to which the area would contribute wilderness characteristics), this area offers very good opportunities for solitude but only moderate opportunities for primitive and unconfined recreation as compared to areas nearby and elsewhere in the forest.

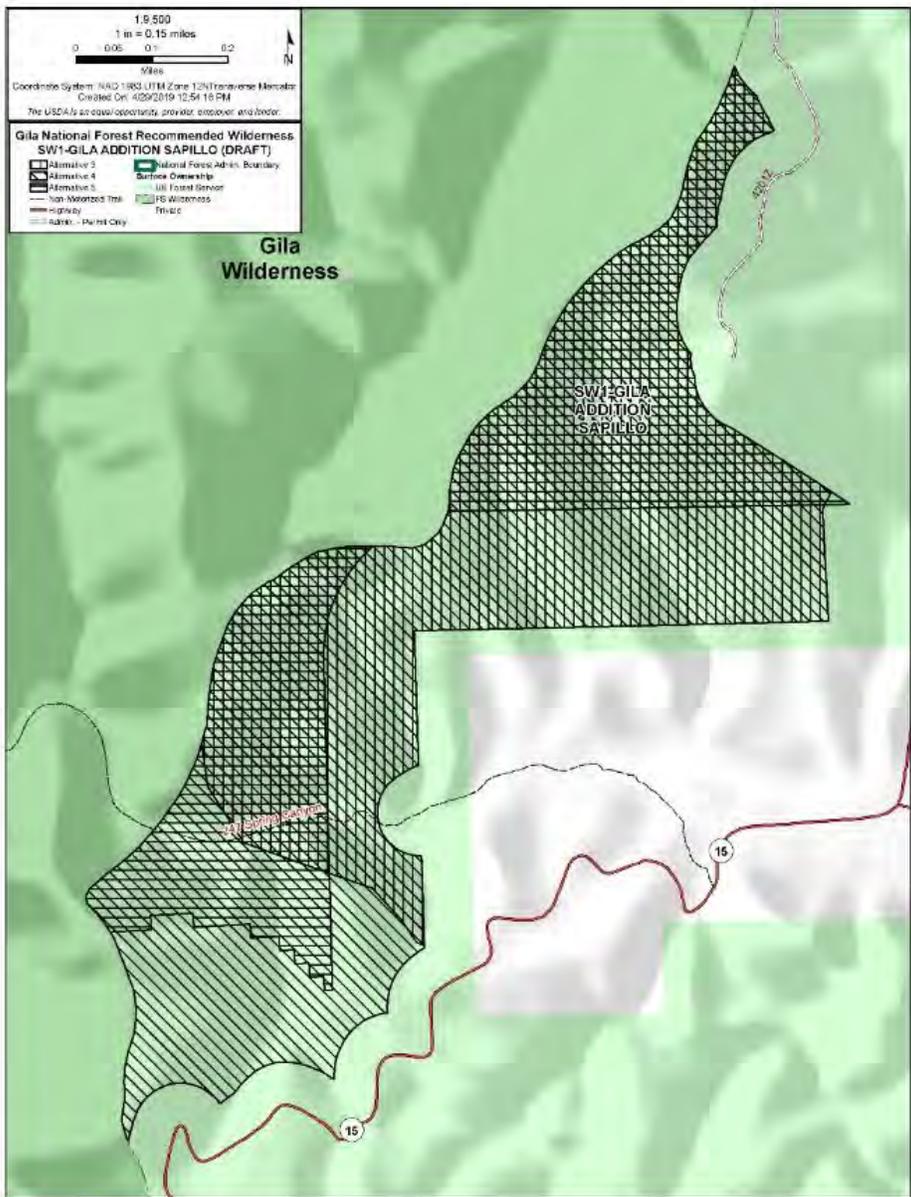


Figure 60. Recommended wilderness by alternative for SW1-Gila Addition Sapillo

W1c – Gila Addition Lake Roberts

Alternative 4 - 691 acres, alternative 5 - 393 acres, for detailed boundary locations see figure 61.

Location and Boundaries: The W1c area is located on the southwestern portion of the Wilderness Ranger District in Grant County, New Mexico. Area boundaries are determined by setbacks from State Hwy 35 and defensible space for adjacent private property to the south, and the area shares its north boundary with the existing Aldo Leopold Wilderness.

General description: This small area consists of moderate to rugged terrain in a narrow inventoried roadless area between State Hwy 35 and the community of Lake Roberts and the Aldo Leopold Wilderness, of which it would become an addition if designated by Congress.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed for semi-primitive non-motorized, roaded natural, and rural settings.
- This area is almost entirely within Inventoried Roadless Area (IRA), and therefore, that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future.
- Permitted commercial grazing occurs within the area, which is part of the Mimbres/Powderhorn/Sapillo grazing allotment.

Table 63. Evaluated wilderness characteristics of the W1c – Gila Addition Lake Roberts area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (RECREATION) LOW (SOLITUDE)	4
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE	10

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 4 and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects very little active management activity. The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.

- Current ecological conditions reflect that there has been very little management activity occurring within the area. There is only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, and their appearance detracts very little from apparent naturalness.
- Primitive and unconfined recreation opportunities are moderate by comparison to those available nearby and within other areas of the forest.

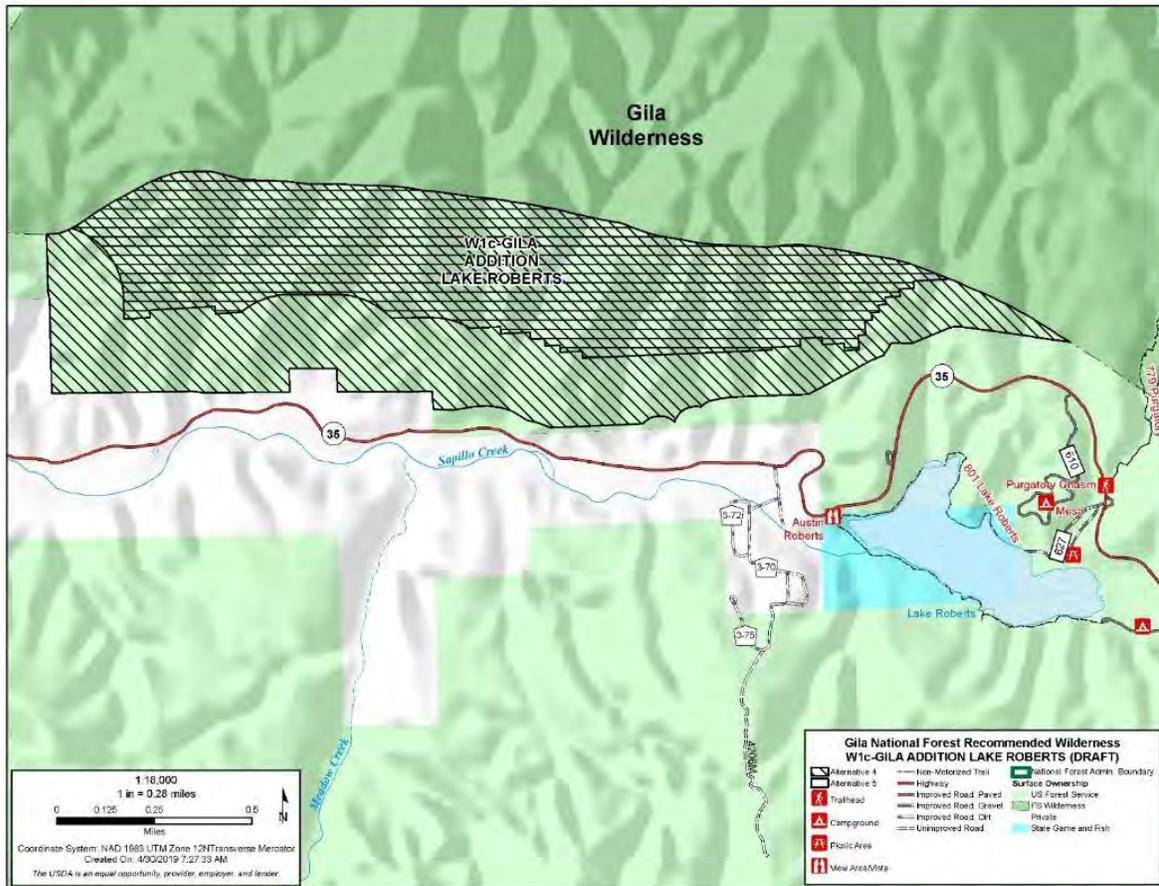


Figure 61. Recommended wilderness by alternative for W1c-Gila Addition Lake Roberts

W3 – Aldo Leopold Addition West

Alternative 2 - 1,110 acres, alternative 3 - 1,109 acres, alternative 5 - 3,389 acres for detailed boundary locations see figure 62.

Location and Boundaries: The W3 – Aldo Leopold Addition West is located adjacent to the Aldo Leopold Wilderness boundary and Forest Road 150, in the southcentral portion of the Wilderness Ranger District, and generally northwest of Rocky Canyon Campground, within Grant County, New Mexico. Boundaries are shared with the Aldo Leopold Wilderness to the east, are set back from Forest system roads to the west and south, and at the section line separating an area determined unmanageable to protect wilderness characteristics to the north. Adjustments were made to create a smaller area with natural featured determining south and north boundaries for to meet criteria for some alternatives. The area would be an addition to the existing Aldo Leopold Wilderness if designated by congress.

General description: This is a small area of moderate to steep and very rugged terrain within a classic southwestern mountains forest of with piñon-juniper, ponderosa pine, and mixed conifer, with each generally occurring depending upon elevation and slope aspect. A section of the Continental Divide National Scenic Trail passes through this area.

Current Uses and Management:

- ROS Settings: Under alternatives 2 and 3, this area is predominantly managed as a semi-primitive non-motorized setting with small areas of roaded natural settings on the west boundary. Alternative 5 features more roaded natural than the other alternatives.
- This area is partly within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Mimbres/Powderhorn/Sapillo grazing allotment.

Table 64. Evaluated wilderness characteristics of the W3 – Aldo Leopold Addition West area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	6
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	MODERATE/HIGH	12

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.

- This area would be manageable to protect wilderness characteristics as an addition to the existing wilderness with some boundary adjustments.
- A section of the Continental Divide National Scenic Trail passes through the area.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects very little active management activity. The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.
- The current composition of plant and animal communities within the area reflects very little active management activity. The composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.
- Current ecological conditions reflect that there has been very little management activity occurring within the area. There is only minor evidence of any type of modern human land management activity, limited mostly to areas close to the outside boundaries.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, and their appearance detracts very little from apparent naturalness.
- Although the area is located adjacent to Forest Road 150, outside of hunting or antler gathering seasons the likelihood of encountering other visitors is very low. Terrain, vegetation cover, and low use throughout the area all contribute to excellent opportunities for solitude.
- There are few limitations to the types and pursuit of primitive recreation opportunities available, and there are few management restrictions to confine recreation pursuits. The area compliments and is enhanced by opportunities available on the contiguous wilderness.

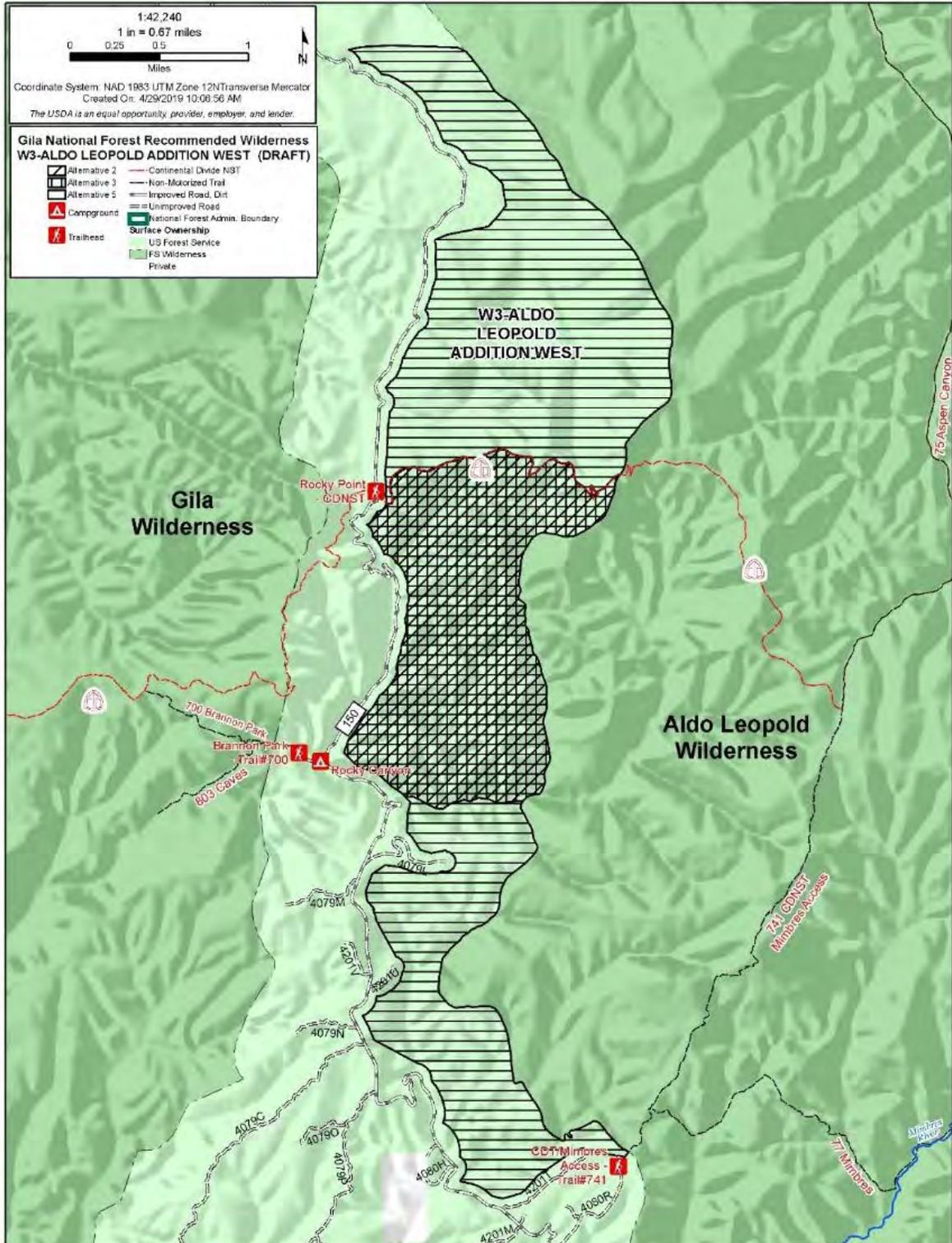


Figure 62. Recommended wilderness by alternative for W3-Aldo Leopold Addition West

W4 – Aldo Leopold Addition McKnight Canyon

Alternative 2 - 11,094 acres, alternative 3 - 11,050 acres, alternative 5 - 12,459 acres, for detailed boundary locations see figure 63.

Location and Boundaries: W4 – Aldo Leopold Addition, McKnight Canyon is located adjacent to the southwest boundary of the Aldo Leopold Wilderness, in the southcentral portion of the Wilderness Ranger District within Grant County, New Mexico. Area boundaries generally north and northeast are shared with the wilderness, and all other boundaries are generally determined by forest system roads, although significant adjustments were made to exclude portions of the area determined to be not manageable to protect wilderness characteristics during the evaluation. If designated, the area would become an addition to the existing Aldo Leopold Wilderness.

General description: This is a relatively large and somewhat remote area of the forest that receives little visitation outside of hunting seasons. The terrain is variable, with ridges, mesa tops, and canyons. Vegetation cover consists of a classic southwestern mountains forest of with piñon-juniper, ponderosa pine, and mixed conifer, with each generally occurring depending upon elevation and slope aspect. There are several trails and trailheads providing access to the interior of the area.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting, with small areas of primitive settings near the boundary shared with the wilderness, and both semi-primitive motorized and roaded natural near other area boundaries.
- This area is located almost entirely within Inventoried Roadless Area (IRA), and therefore, that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Mimbres/Powderhorn/Sapillo grazing allotment.

Table 65. Evaluated wilderness characteristics of the W4 – Aldo Leopold Addition McKnight Canyon area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	OUTSTANDING	8.3
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (SOLITUDE) HIGH (RECREATION)	8
Step 5 – Other Features of Value	NONE	0
Overall Rank of Wilderness Characteristics	OUTSTANDING	16.3

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.
- Compared with other nearby locations and elsewhere on the Forest, this area offers outstanding opportunities for solitude, and high opportunities for primitive and unconfined recreation.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural throughout the area. This reflects little active management activity occurring within the area, including vegetation treatments and permitted grazing of livestock.
- Ecological conditions within the area reflect nearly non-existent evidence of any type of modern human land management activity throughout the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, are not concentrated in location, do not appear modern, and/or they contribute to the historical character and cultural context of the area and their appearance detracts very little from apparent naturalness.
- This is a relatively large and remote area that receives little visitation outside of hunting seasons. The terrain is variable, with ridges, mesa tops, and canyons with good recreation and solitude potential, and there are several trails and trailheads providing access to the interior of the area.
- Compared with other nearby locations and elsewhere on the Forest, this area offers outstanding opportunities for solitude, and high opportunities for primitive and unconfined recreation.

W7 – Gila Addition East

Alternative 4 - 642 acres, alternative 5 - 564 acres, for detailed boundary locations see figure 64.

Location and Boundaries: The W7 area is a location known as the Links Ranch, on the southern portion of the Wilderness Ranger District within Catron County, New Mexico. This area is greatly reduced from the inventory, due to a determination that much of the original area that lies between Forest Road 150 and the existing Gila Wilderness boundary would not be manageable to protect wilderness characteristics. Evaluated area boundaries to the north include setbacks from a forest system road, and the section line in alignment with private property boundaries, and to the east include the private property boundaries and a system road, before a direct line connection to the wilderness boundary in order to exclude areas determined to be not manageable to protect wilderness characteristics. The southeast, south, and generally west boundaries are shared with the Gila Wilderness.

General description: This small area would become an addition to the existing Gila Wilderness if Congress should designate it. Terrain is generally rugged, and the area is heavily dissected by drainages. Vegetation consists of a mix of piñon-juniper, ponderosa pine-oak, and mixed conifer depending upon elevation and slope aspect. Diamond Creek flows through the area, as does the Link Trail #713.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is managed for semi-primitive non-motorized and semi-primitive motorized settings
- This area is mostly within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing does not currently occur within the area, which is predominantly part of the Diamond Bar grazing allotment.

Table 66. Evaluated wilderness characteristics of the W7 – Gila Addition East area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (RECREATION) LOW (SOLITUDE)	4
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	11

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 4 and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

- The area contains ecological values for possessing critical habitat for several Threatened or Endangered species.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural throughout, reflecting very little active management activity occurring within the area.
- Ecological conditions within the area reflect nearly non-existent evidence of any type of modern human land management activity throughout the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, are not concentrated in location, do not appear modern, and their appearance detracts very little from apparent naturalness.
- Opportunities for primitive and unconfined recreation are moderate by comparison to opportunities available in nearby areas and throughout the forest.

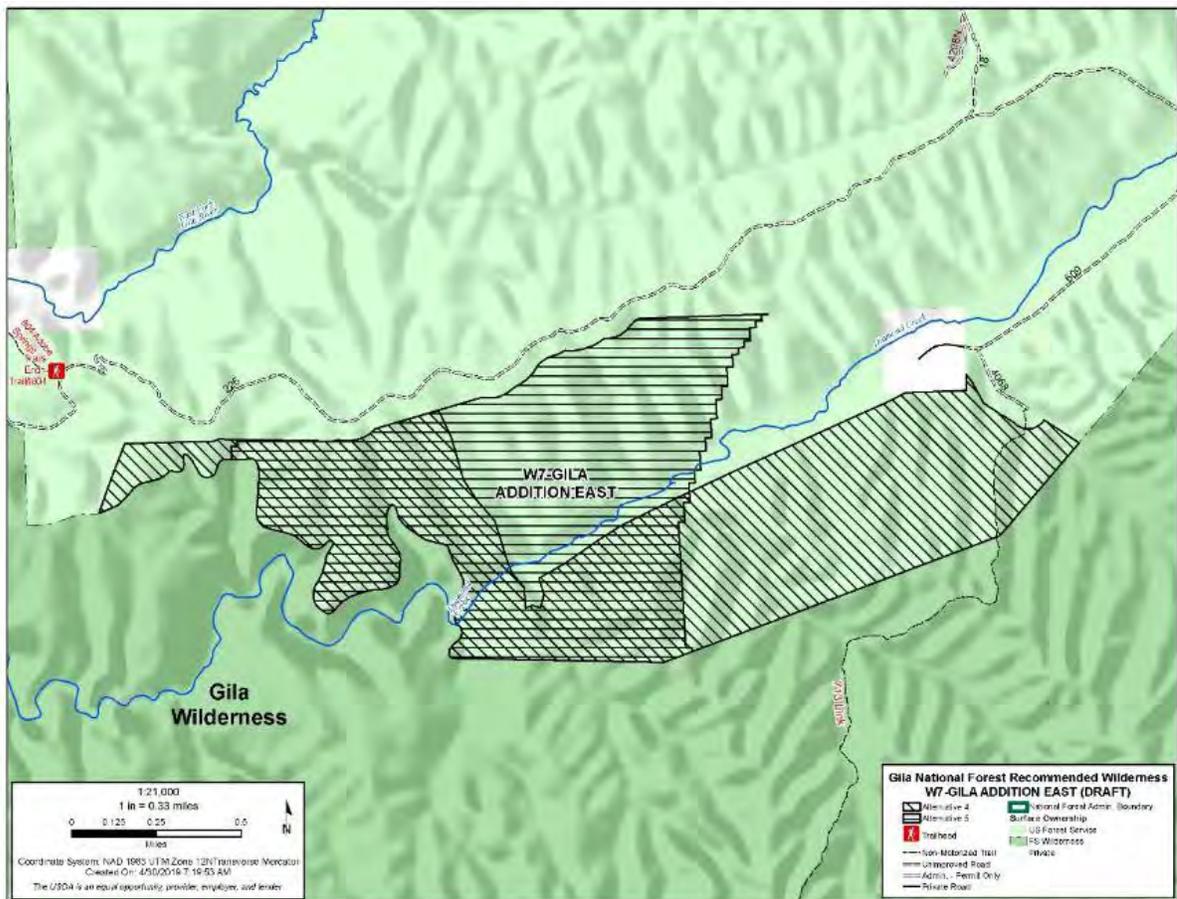


Figure 64. Recommended wilderness by alternative for W7-Gila Addition East

WB1 – Taylor Creek

Alternative 2 - 10,012 acres, alternative 3 - 6,672 acres, alternative 5 - 26,852 acres, for detailed boundary locations see figure 65.

Location and Boundaries: The WB1 – Taylor Creek area is located adjacent to the north boundary of the Aldo Leopold Wilderness, in the northcentral portion of the Black Range Ranger District within Sierra County, New Mexico. South boundaries are shared with the Aldo Leopold Wilderness, of which it would become an addition if it were to be designated by Congress. All other boundaries are generally from setbacks from roads, but with significant adjustments to exclude areas determined not manageable to protect wilderness characteristics, substantially noticeable improvements, and alternative-specific analysis criteria.

General description: This is a fairly large area with variable terrain that is generally moderate to steep and rugged, with areas of deep canyons, drainages, mesa tops, and mountain peaks. Vegetation cover is highly variable throughout the area, with a classic southwestern mountains forest mix of with piñon-juniper, ponderosa pine, and mixed conifer, with each generally occurring depending upon elevation and slope aspect.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting with smaller areas of roaded natural near the southwestern boundaries, and semi-primitive motorized to the northeast.
- This area is located entire within inventoried roadless area (IRA) in alternatives 2 and 3, and almost entirely in alternative 5; therefore, it is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Taylor Creek grazing allotment.

Table 67. Evaluated wilderness characteristics of the WB1 – Taylor Creek area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (BOTH)	7
Step 5 – Other Features of Value	HIGH	3
Overall Rank of Wilderness Characteristics	HIGH	15

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.

- Other Features of Value are present within the area, including geology, river bluffs and canyons within the area are exceptionally scenic.
- This is a noteworthy area for cultural resources, including prehistoric rock shelters and historic mining and military sites.
- The area also features exceptional views out towards the west and of the Mogollon Range.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects active management, including past logging as well as past and current permitted grazing of livestock. The composition of plant and animal communities appears natural in the majority of the area. Non-native species are known to be present in some areas.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, are not concentrated in location, do not appear modern, and/or they contribute to the historical character and cultural context of the area and their appearance detracts very little from apparent naturalness.
- There are not a lot of range improvements and livestock containment in this area uses mostly natural barriers.
- Opportunities for solitude are high, and for primitive and unconfined recreation are considered to be high by comparison to opportunities available in nearby areas and throughout the forest.

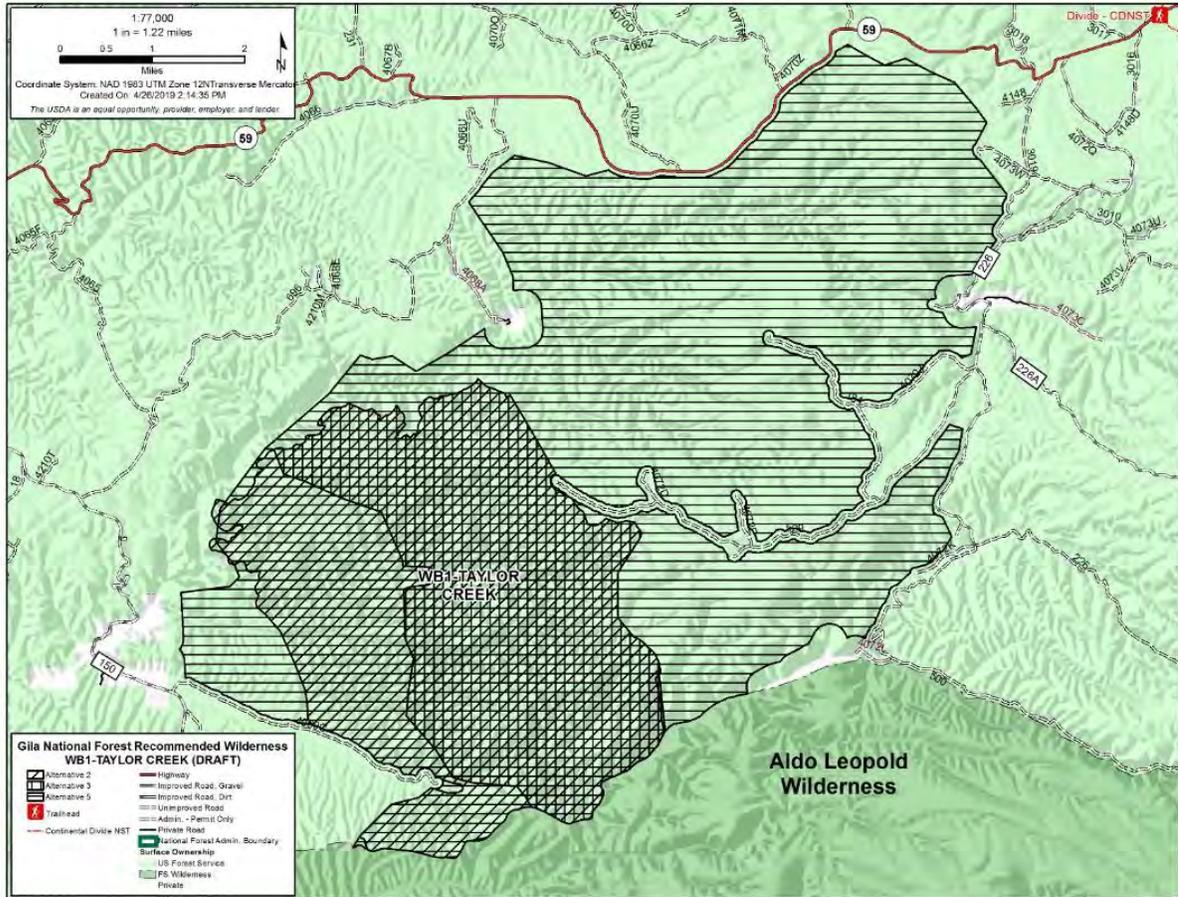


Figure 65. Recommended wilderness by alternative for WB1-Taylor Creek

WB2 – Gila Addition East

Alternative 3 - 1,434 acres, alternative 4 - 4,437 acres, alternative 5 - 3,919 acres, for detailed boundary locations see figure 66.

Location and Boundaries: The WB2 – Gila Addition East area occurs within parts of the Black Range and Wilderness Ranger Districts in Catron County, New Mexico. The area shares western boundaries with the existing Gila Wilderness, with all other boundaries generally determined by setbacks from roads, individual alternative exclusion criteria, and defensible space to private property.

General description: This is a small area consisting mostly of inventoried roadless area of moderate to rugged terrain, with vegetation consisting of a classic southwestern mountains mix of with piñon-juniper, ponderosa pine, and mixed conifer, with each generally occurring depending upon elevation and slope aspect. The East Fork of the Gila

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting
- This area is almost entirely within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- Permitted commercial grazing occurs within the area, which is part of the Jordan Mesa grazing allotment.

Table 68. Evaluated wilderness characteristics of the WB2 – Gila Addition East area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (SOLITUDE) MODERATE (RECREATION)	7
Step 5 – Other Features of Value	MODERATE	2
Overall Rank of Wilderness Characteristics	HIGH	14

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3, 4, and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.
- Other Features of Value are present within the area, including cultural resources representing both prehistoric and historic occupations.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities within the area reflects very little active management activity, appears natural throughout at least 90 percent the area, and does not appear to be manipulated by humans.
- Current ecological conditions within the area reflect very little evidence of any type of modern human land management activity throughout the area.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The area is adjacent to an existing wilderness, and, there are very good opportunities for solitude throughout the area, particularly outside of hunting and antler gathering seasons.
- Opportunities for primitive and unconfined recreation are moderate compared to other locations nearby and throughout the forest.

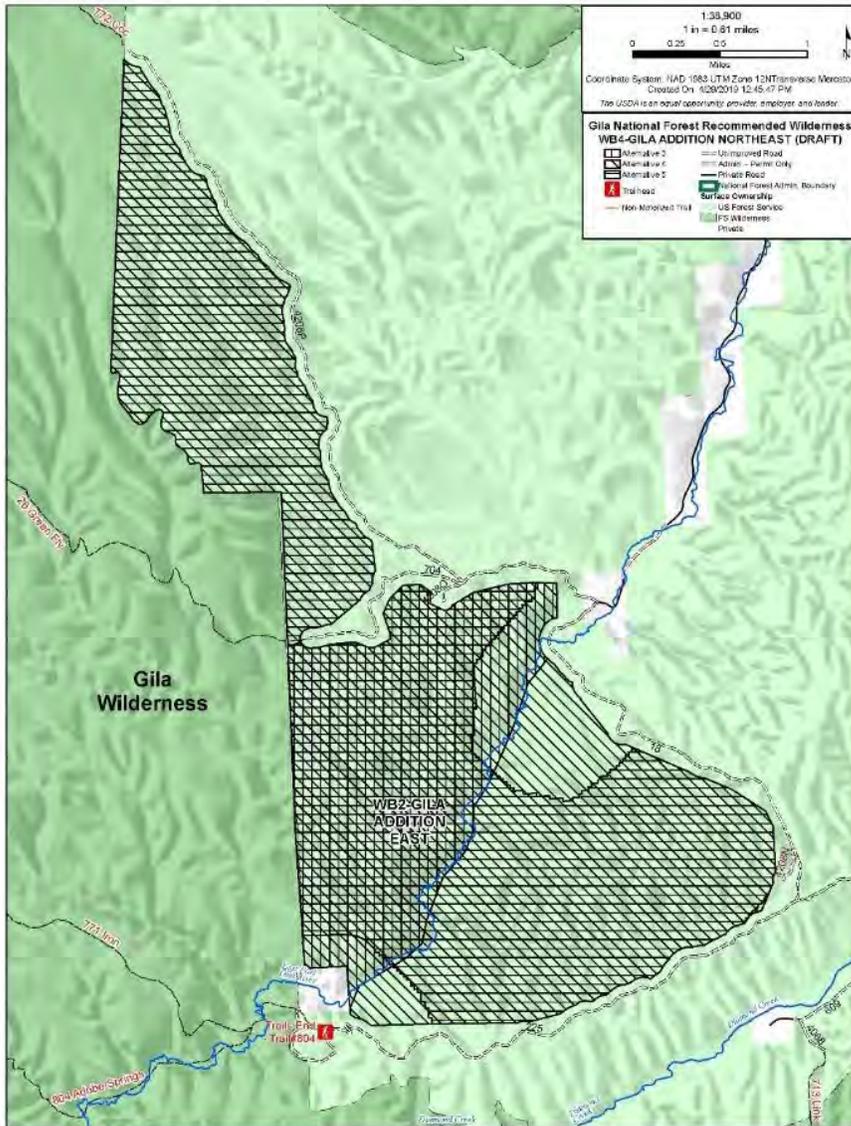


Figure 66. Recommended wilderness by alternative for WB2-Gila Addition East

WB4 – Gila Addition Northeast

Alternative 3 - 9,230 acres, alternative 5 - 13,862 acres, for detailed boundary locations see figure 67

Location and Boundaries: The WB4 – Gila Addition Northeast area is located on the northeastern Wilderness and western Black Range Ranger Districts, in Catron County, New Mexico. The area shares its south boundary with the Gila Wilderness, and the west, north, and eastern boundaries are generally determined by setbacks from roads and defensible space with adjacent private property boundaries, with adjustments to exclude areas determined as not manageable to protect wilderness characteristics, and to account for individual alternative criteria. Wolf Hollow Campground and Beaverhead Airstrip are located just outside the area’s north boundary, with the Beaverhead Helibase to the northeast.

General description: This is a fairly large area of moderate to steep, mountain terrain. There is a variability of vegetation types occurring within this area, with from grasslands and meadows in lower elevations up to mixed conifer in the higher areas. Meadow Trail #53, Christie Trail #806, Wolf Hollow Trail #773, and Beaver Creek all pass through the area.

Current Uses and Management:

- ROS Settings: Under both alternatives, it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting, with smaller areas of semi-primitive motorized and roaded natural near area boundaries, and a very small area of primitive near the wilderness boundary.
- A majority of this area is within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Black Mountain grazing allotment.

Table 69. Evaluated wilderness characteristics of the WB4 – Gila Addition Northeast area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	3.7
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	HIGH (PRIMITIVE REC) MODERATE (SOLITUDE)	6
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	10.7

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 3 and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.

- Other Features of Value are present within the area, including a site listed as a National Historic Landmark, as well as other cultural resources.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Although current ecological conditions reflect that there has been management activity occurring within the area, modern human land management activity is not noticeable in most locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The area has moderate opportunities for solitude in comparison to nearby locations and other areas within the Forest.
- The area offer good opportunities for unconfined primitive recreation that are enhanced by being contiguous to an existing wilderness.

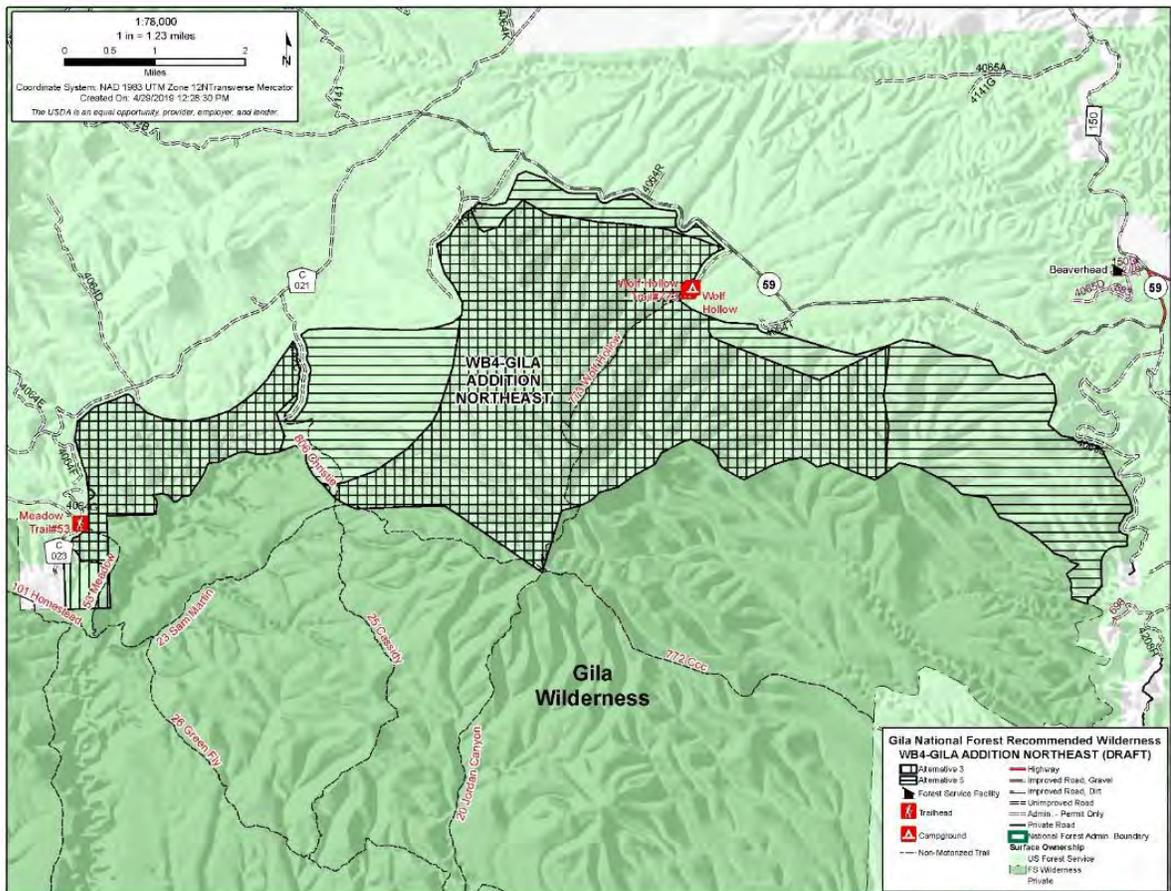


Figure 67. Recommended wilderness by alternative for WB4-Gila Addition Northeast

WB6 – Gila Addition Beaver Creek

Alternative 4 – 2,273 acres, alternative 5 – 4,252 acres, for detailed boundary locations see figure 68.

Location and Boundaries: The WB6 – Gila Addition Beaver Creek area is located on the northern Wilderness and western Black Range Ranger Districts within Catron County, New Mexico. Area boundaries to the east are generally determined by a combination of setbacks for defensible space, and to the northeast, south, and west by setbacks from forest system roads. The area shares its north boundary with the Gila Wilderness.

General description: This is a small area of moderate to rugged, mountainous terrain, with vegetation consisting of a southwest mountains mix of piñon-juniper, ponderosa pine-oak, and mixed conifers, with occurrence of species generally depending upon elevation and slope aspect. As the name would imply, Beaver Creek flows through this area. The area would be an addition to the existing Gila Wilderness if designated by congress.

Current Uses and Management:

- ROS Settings: Under both alternatives it is recommended in, this area is predominantly managed as a semi-primitive non-motorized setting, but with areas of semi-primitive motorized settings along west, south, and northeast boundaries.
- The majority of this area is within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain.
- Permitted commercial grazing occurs within the area, which is part of the Taylor Creek and Jordan Mesa grazing allotments.

Table 70. Evaluated wilderness characteristics of the WB6 – Gila Addition Beaver Creek area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	SUFFICIENT SIZE	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	MODERATE	5
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	MODERATE (BOTH)	5
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	MODERATE	11

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 4 and 5, though in some instances with differing boundary modifications due to alternative-specific criteria.
- The area contains ecological values for possessing critical habitat for several Threatened or Endangered species, and on Species of Special Concern.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The composition of plant and animal communities appears natural in the majority of the area.
- Modern human land management activity is only noticeable in some locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The prevalence of improvements is generally low throughout the area, and may be concentrated in some locations.
- Opportunities for solitude and for primitive and unconfined recreation are moderate by comparison to opportunities available in nearby areas and throughout the forest.

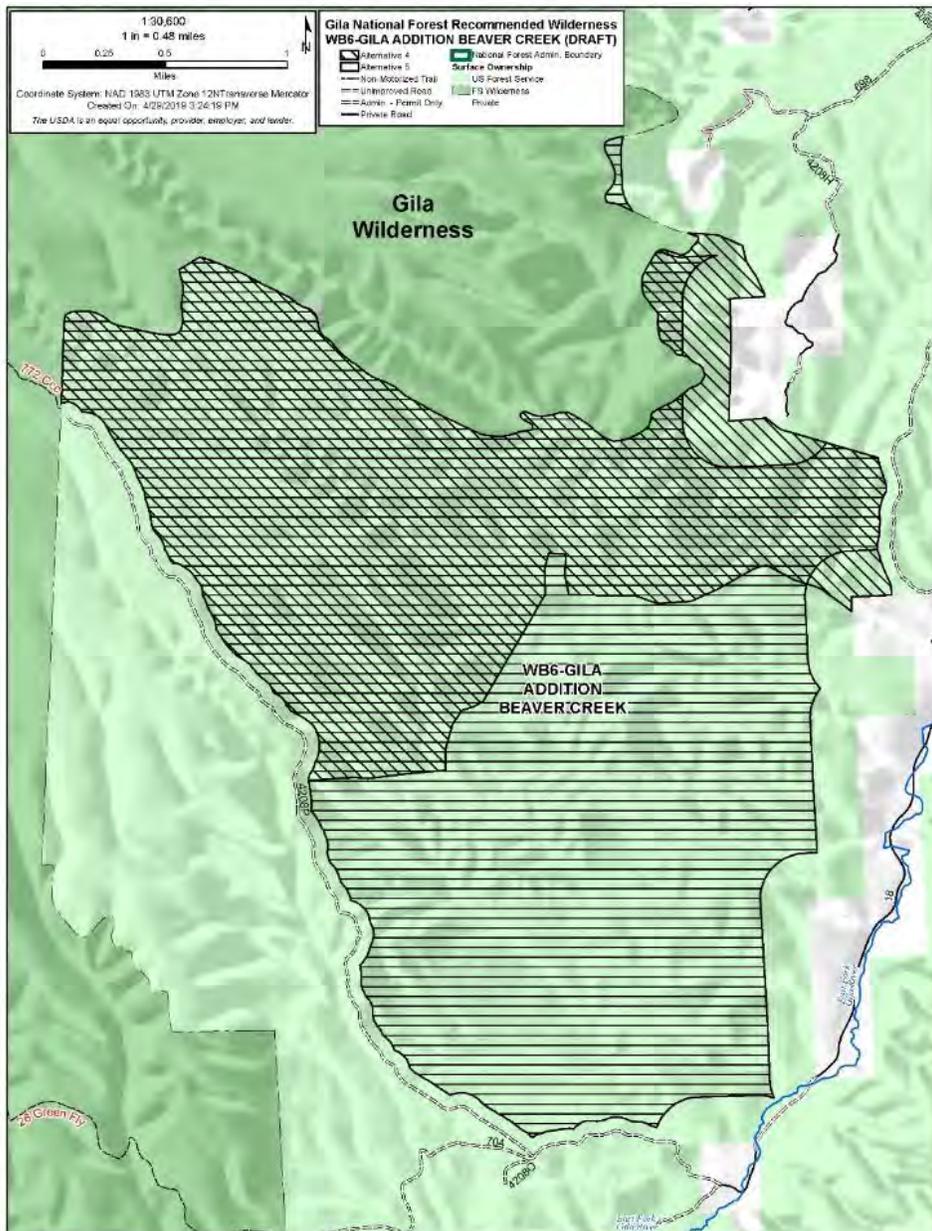


Figure 68. Recommended wilderness by alternative for WB6-Gila Addition Beaver Creek

WSB1 – Rabb Park

Alternative 2 - 27,002 acres, alternative 3 – 25,984 acres, alternative 5 - 42,878 acres, for detailed boundary locations see figure 69.

Location and Boundaries: The WSB1 – Rabb Park area is located adjacent to the southwest boundary of the Aldo Leopold Wilderness, in the southwest portion of the Wilderness Ranger District and northeast portion of the Silver City Ranger District, north of NM 152 where it passes through the Gallinas Canyon area and through Emery Pass, and is within Grant County, New Mexico. The area boundaries generally to the north and northwest, and west are shared with the existing Gila Wilderness. Boundaries to the east, south, and southwest are generally determined by setbacks from forest system roads, State Hwy 152 and defensible space for adjacent private property, but with significant adjustments to exclude areas determined to not be manageable to protect wilderness characteristics, and to exclude areas according to individual alternative criteria.

General description: The Rabb Park area would become an addition to the Aldo Leopold Wilderness if designated by Congress. This is large area with a great variability of terrain from moderate to very challenging, with areas of steep mountain slopes, long ridgelines, and deep canyons. Vegetation cover is highly variable throughout the area, consisting of a classic southwestern mountain forest mix of with piñon-juniper, ponderosa pine, and mixed conifer, with each generally occurring depending upon elevation and slope aspect. There are a number of non-motorized trails that access throughout the area, including East Canyon#93, Quaking Aspen #86, Rabb Park #747, Gallinas Canyon #129, Black Range Crest #79, Railroad Canyon #128, East Railroad Canyon #130, and Hillsboro Bypass #412. The Hillsboro Peak Lookout is just northeast of the area, within the existing wilderness boundary.

Current Uses and Management:

- ROS Settings: Under both alternatives, it is recommended in, this area is predominantly managed as semi-primitive non-motorized and primitive settings, with small areas of semi-primitive roaded to the northwest, and roaded natural to the southwest for alternatives 2 and 3, and additional semi-primitive motorized to the west and roaded natural to the south for alternative 5.
- This area is partially within Inventoried Roadless Area (IRA), and is therefore that portion of the area is currently managed to protect roadless characteristics.
- IRA designation allows mechanical treatment for purposes of forest restoration, but not construction of new and improvement of existing roads within the area.
- However, very little management activity has occurred within the area, and would be unlikely to occur in the future, mostly due to the precipitous terrain
- Permitted commercial grazing occurs within the area, which is part of the Mimbres/Powderhorn/Sapillo, East Canyon, Noonday, Sheppard, and Gallinas grazing allotments.

Table 71. Evaluated wilderness characteristics of the WSB1 – Rabb Park area

Wilderness Characteristic	Evaluation Ranking	Score
Size if less than 5,000 acres	N/A – Greater than 5,000 acres	N/A
Manageability to protect wilderness characteristics	MANAGEABLE	N/A
Apparent Naturalness	HIGH	6
Solitude or Primitive or Unconfined Recreation (both are ranked, but highest score is counted)	OUTSTANDING (RECREATION) HIGH (SOLITUDE)	8
Step 5 – Other Features of Value	LOW	1
Overall Rank of Wilderness Characteristics	HIGH	15

Factors considered and process used to determine recommendation:

- This area meets the criteria identified for alternatives 2, 3, and 5, though in some instances with differing boundary modifications due to variations in alternative-specific criteria.
- Other Features of Value are present within the area, including the Hillsboro site, listed on the National Register of Historic Places, making the area significant for heritage resources. Prehistoric resources are also present.

Ecological characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- The current composition of plant and animal communities visibly appears to be natural for at least 90 percent of the area.
- Current ecological conditions reflect that there has been very little management activity occurring within the area. Modern human land management activity is not noticeable in most locations.

Social characteristics determining suitability for inclusion in the National Wilderness Preservation System:

- Improvements are not substantially noticeable, are very few in number and rarely encountered, not concentrated in location, do not appear modern, and their appearance detracts very little from apparent naturalness.
- Outside of hunting or antler gathering seasons the likelihood of encountering other visitors is low, providing very good opportunities for solitude throughout much of the area.
- Throughout this moderately large-sized area, there are few limitations to the types and pursuit of primitive recreation opportunities available, including good non-motorized trail use opportunities accessing much of the area, although some of the boundary is landlocked from access due to adjacent private lands.

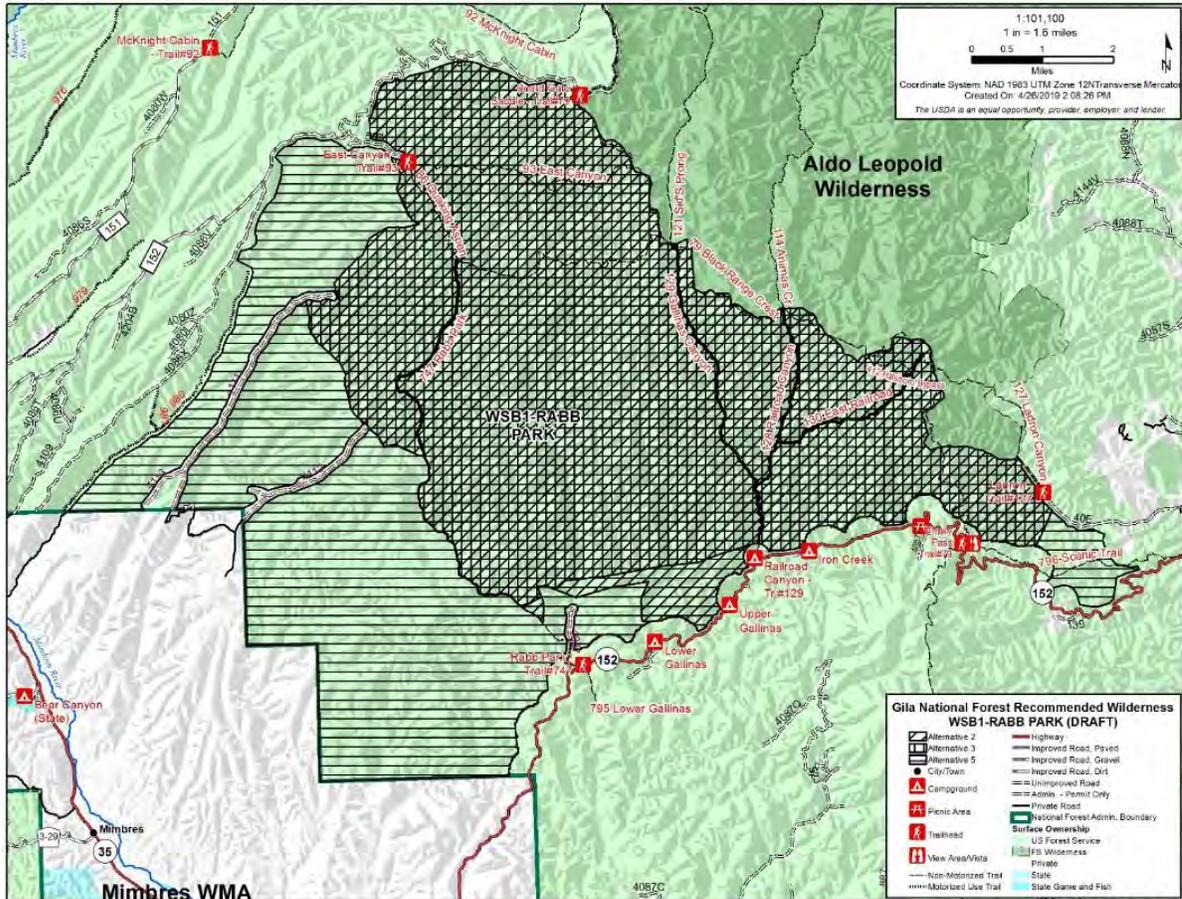


Figure 69. Recommended wilderness by alternative for WSB1-Rabb Park

Step Four: Recommendation

Based on the analysis in the environmental impact statement and stakeholder input received, the forest supervisor will make a decision on specific areas to recommend for inclusion in the National Wilderness Preservation System.

Based on the analysis in the environmental impact statement and public input received, the forest supervisor may recommend lands to Congress for inclusion in National Wilderness Preservation System. The decision will be included in the final decision document for the forest plan as a preliminary administrative recommendation. Plan components will provide direction for managing areas recommended for wilderness designation. The areas must be managed to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness recommendation.

This is an administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Only Congress has the authority to designate wilderness through legislation. This management direction will continue until Congress acts on the recommendation one way or another, or when the recommended areas are re-evaluated in the next planning cycle.

For more information on the Plan Revision Process, including the Wilderness Recommendation Process, please visit the Gila Forest Plan Revision [webpage](#).

Appendix G. Documentation of the Wild and Scenic River Eligibility Study

Introduction

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. For a river to be eligible for Wild & Scenic River (W&S) designation it must be free flowing and (with its adjacent land area) must possess one or more Outstandingly Remarkable Values (ORVs). ORVs are specific to each river segment and may include scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. None of the eligible streams or rivers on the Gila National Forest are currently designated as Wild & Scenic Rivers.

The Gila National Forest Plan 1986 as amended in 2002 incorporated direction to identify and protect eligible Wild & Scenic Rivers for their ORVs, and preserve their character pending determination of suitability for inclusion in the National Wild & Scenic River System. The following rivers were determined to be eligible in 2002: Whitewater Creek, Spruce Creek, Middle Fork Gila River, West Fork Gila River, Diamond Creek, South Diamond Creek, Holden Prong, and Las Animas Creek.

The National Forest Management Act requires the Forest Service to develop a planning rule under the principles of the Multiple-Use Sustained-Yield Act of 1960, which sets the process for the development and revision of land management plans. The Gila National Forest is in the process of revising a land and resource management plan that has been in place since 1986. The [2012 Planning Rule \(36 CFR 219\)](#) provides the framework to create local land management plans for national forests and grasslands across the nation. The 2012 Planning Rule is intended to create a plan that guides resource management on the Gila National Forest within the context of the broader landscape. It takes an integrated and holistic approach that recognizes the interdependence of ecological, social, cultural and economic systems. Collaboration with stakeholders and process transparency are key components of this approach.

During the forest plan revision process, the Forest Service must review all streams for their potential eligibility for designation in the National Wild and Scenic Rivers System as directed under section 5(d)(1) the Wild and Scenic Rivers Act of 1968, (as amended). Following this act, the 2012 Planning Rule requires that each national forest revising their Forest Plan must include a process for identifying and determining the eligibility of potential additions to the National Wild and Scenic Rivers System (National System) on National Forest System (NFS) lands. As part of the Gila National Forest Plan Revision process, under the direction of the 2012 Planning Rule, an updated wild and scenic rivers eligibility study was conducted for the Gila National Forest planning area. This document outlines the process undertaken consistent with the 2012 Planning Rule, and provides the preliminary results for stakeholder review and feedback.

Steps in the Wild and Scenic Rivers Eligibility Study Process

The Forest Service Planning Handbook ([FSH 1909.12 Chapter 80](#)) provides guidance and direction for a three-step process for evaluating eligibility and ultimately suitability as Wild and Scenic Rivers:

1. **Determining Eligibility:** a study to identify if rivers are free-flowing and possess outstandingly remarkable values, giving them status as Eligible Wild and Scenic Rivers
2. **Assigning Eligible Rivers potential classifications as Wild, Scenic, or Recreational** based on the condition of the river and the level of development level of adjacent lands at the time of the evaluation
3. **Determining Suitability:** a study to ascertain if eligible rivers should be recommended to Congress for inclusion in the National Wild and Scenic Rivers System

Although the third step may be accomplished at any time, including during plan revision, it is not a requirement to do so during that process. The Gila National Forest does not intend to complete the suitability step during its plan revision process unless it should receive direction from Congress to do so. Therefore, this process paper covers only the first two steps of the process, determining eligibility as a Wild and Scenic River, and assignment of potential classifications as Wild, Scenic, or Recreational. Suitability will be completed outside of plan revision as either part of a plan amendment, in conjunction with a project decision, or in a separate study. No wild and scenic river designation will be made as a result of plan revision as Congress has reserved the authority to make the final decision regarding all wild and scenic river designations.

An Interdisciplinary Team (ID Team) was established to carry out a transparent Wild and Scenic Rivers Eligibility Study process that integrates and is informed by stakeholder and public input. The eligibility study was conducted through a series of meetings aimed at the steps described in more detail below. Much of the base information was developed from geographic information systems, such as the base maps, determining the number and location of all “named streams”, and identifying the location of developments along or nearby these rivers and streams. Specific resource information about each river and stream was gathered from maps and professional knowledge provided by Gila National Forest resource specialists and comments received by the public from letters and emails and from using an interactive webmap called StoryMap. This mapping tool allowed the public to submit comments on specific stream segments about the potential outstandingly remarkable values.

Step 1: Determine Eligibility

The purpose of the eligibility step is to identify all free-flowing named streams in the planning area and identify if they have an outstandingly remarkable value within the region of comparison. This step can be broken down into five distinct parts:

- A. Inventory of rivers required to be included in the current eligibility study
 - B. River and area boundaries included in the eligibility study were defined:
 - C. River segments were identified
 - D. Eligibility criteria were finalized
 - E. Eligibility review was conducted
- A. *Inventory of Rivers Required to be Included in the Current Eligibility Study:*
- *Previously Studied Rivers with Changed Conditions*
 - *Rivers Not Previously Studied for Eligibility*

Because a systematic inventory of eligible rivers was completed in 2002 (table 72), the extent of the eligibility study process during the Gila National Forest plan revision was limited to any rivers that

were not previously evaluated for eligibility, and those of the 87 rivers¹ previously studied that may now have changed circumstances that warrant a new evaluation.

Table 72. 2002 study identified eligible Wild and Scenic Rivers on the Gila National Forest

River Name	Outstanding Remarkable Values	Total Miles	Classification (# of miles)
Diamond Creek	Fish, Historic	31	Wild (26 miles), Recreational (6 miles)
Holden Prong	Fish	8	Wild (8 miles)
Las Animas Creek	Fish, Historic	9	Wild (3 miles), Scenic (6 miles)
Middle Fork Gila River	Scenic	27	Wild (27 miles)
South Diamond Creek	Fish	9	Wild (9 miles)
Spruce Creek:	Fish	5	Wild (5 miles)
West Fork Gila River	Scenic, Historic	26	Wild (26 miles), Recreational (1 mile)
Whitewater Creek	Recreation, Historic	14	Wild (11 miles), Recreational (3 miles)

The rivers that are currently required to be studied for eligibility include all rivers named on a standard U. S. Geological Survey 7.5-minute USGS quadrangle map, but may also include rivers identified in the Nationwide Rivers Inventory and by other sources. Using GIS layers, a comparison was made by the IDT to ensure that all named rivers flowing wholly or partially on National Forest System lands that were not included in the previous eligibility study were considered in this current study.

The ID Team identified and evaluated 158 river segments named on a standard U.S. Geological Survey 7.5-minute USGS quadrangle map that were not included in the 2002 Eligibility study. A complete list of all named rivers on USGS topographic maps that were considered by the ID Team in the eligibility study may be found in table 80. A list of all rivers considered in the 2002 study may be found in table 78 and table 79. These three tables can be found toward the end of this appendix. The total number of river segments considered in the plan revision edibility study was 245.

The eligibility study maps showing those rivers that were evaluated in 2002 and those that were not evaluated in 2002 can be found at the following links: [North Zone](#) and [South Zone](#). These maps as well as an interactive [webmap](#) (called StoryMap) with this information were made available for stakeholder review and feedback in fall 2018. At the same time, input was sought for any rivers not included on the draft eligibility study maps that may merit additional consideration.

River segments that were included in the 2002 study that were determined by the ID Team to be affected by changed circumstances were reevaluated to determine if there was a change from the original finding.

¹ The 2002 ROD stated that 99 rivers were studied although the IDT could only find evaluations for 87 rivers in the project record. It is likely that some of these rivers were identified earlier in the 2002 study but dropped before reaching a written evaluation. Since the 2012 Planning Rule requires all streams named on a USGS topographic map, these streams would be evaluated under this eligibility study

Changed circumstances are any kind of changes that have occurred to the river or the river corridor that have affected the outstandingly remarkable values. Examples of changes include the listing of a species within the river, broad recognition of the river for certain recreational opportunities, or changes that now make the river's values more unique.

Changes that indicate weaker outstandingly remarkable values may include recovery and delisting of a species, floods, or other events that have adversely affected the river's recreational opportunities or changes that now make the values of the river more common. In some circumstances, rivers that were previously found to be eligible may no longer be so because of these changes; in other cases rivers that were found to be ineligible may now be eligible.

B. River and Area Boundaries Included in the Eligibility Study were Defined

When establishing preliminary boundaries of the study river, the Interdisciplinary Team:

- Identified the beginning and ending points of each river segment to be studied for eligibility. Beginning points may include (but are not limited to) the source of the river, or where it forms when two small tributaries meet, or enter the National Forest. Ending points might include (but are not limited to) a confluence with a larger river or the National Forest boundary. Refer to section 82.62 of the 1909.12 Forest Planning Handbook for determining beginning and ending points of river segments.
- Considered the entire river system, including the connections between the main river and its tributaries and their associated ecosystems that may contain outstandingly remarkable values. This consideration only pertains to Forest System lands, the Forest jurisdiction for Wild and Scenic Rivers eligibility does not extend to private property. At a minimum, a river study area includes the length of the identified river segment and the land within one-quarter mile of each river bank's ordinary high water mark along the river segment – unless there are non-Forest ownership lands within this distance. Under those circumstances, the corridor would not extend beyond National Forest System lands boundaries. The river corridor to be studied may be wider to include National Forest System lands areas beyond the minimum to protect river-related outstandingly remarkable values, other important river resources or to make the river corridor manageable.

C. River Segments Were Identified

To determine eligibility, and when later deciding upon river classifications, it may be necessary or appropriate to divide a study river into more than one segment. When defining segment boundaries within a single river, the ID Team considered:

- Hydrographic and geographic features of the river, such as junctions with major tributaries, entrances or exits from major terrain types, or distinct changes in river gradient that alter the character of the river;
- Land status or ownership;
- Development on or near the river, such as the presence of dams and reservoirs, road access, buildings, and other constructed features (Segment breaks may be appropriate where development changes would result in a classification change);
- The presence of important resource values;

- **Segment length:** There is no required minimum length for a river segment, but it should be sufficient to enable protection of outstandingly remarkable values if the area were managed apart from other segments

Beginning and end points of segments identified as eligible in the 2002 study were reviewed and updated as warranted by the current study ID Team, therefore some segment lengths may differ from those in the earlier study as documented in table 72. Any changes made to beginning and end points, as well as corresponding changes to segment length are reflected in the documentation section for each river segment.

D. Eligibility Criteria

For purposes of this process, in order to be determined as “eligible” a river segment must meet two requirements: it must be free flowing and, including within its adjacent land area, it must also possess one or more outstandingly remarkable values.

Free-flowing Condition

The river segment must be “free-flowing,” as defined in the Wild and Scenic Rivers Act as follows:

- “Free flowing” means existing or flowing in a natural condition without impoundment, diversion, straightening, riprapping, or other modification of the waterway;
- The existence of low dams, diversion works, or other minor structures does not automatically bar consideration for eligibility (However, this also does not imply automatic approval for future construction of such structures in a designated National Wild and Scenic River);
- A river segment may flow between large impoundments and still be considered “free flowing” - Such segments may qualify if conditions within the segment meet the eligibility criteria;
- There are no requirements for minimum flows for an eligible segment. Flows are considered sufficient for eligibility if they sustain or complement the outstandingly remarkable values for which the river would be designated

Outstandingly Remarkable Values

For a river to be eligible for inclusion in the National System, the river and its adjacent land area (referred to as the “river area”), must have one or more outstandingly remarkable values.

Under the Wild and Scenic Rivers Act, the categories of outstandingly remarkable values include:

- Scenic
- Recreational
- Geologic
- Fish
- Wildlife
- Historic
- Cultural
- Or other similar values

To be “outstandingly remarkable,” river-related values must be a unique, rare, or exemplary feature that is significant conspicuous example, among the best representative of these features when compared with similar values from other rivers at the region of comparison.

While the range of resources that may be considered is broad, all features considered should be directly river-related. River values should meet at least one of the following criteria:

- Be located in the river or its corridor (generally within ¼ mile on either side of the river, but may include adjacent areas needed to protect identified values),
- Contribute substantially to the functioning of the river ecosystem, or
- Be river-dependent and owe their location or existence to the presence of the river.

Criteria Used for Establishing Outstandingly Remarkable Values:

Section 1(b) of the Wild and Scenic Rivers Act establishes categories of outstandingly remarkable values. For each of these categories, criteria are identified in Chapter 80 to establish a baseline that fosters greater consistency within the Agency and with other Federal river-administering agencies in evaluating eligibility. These set minimum thresholds to establish outstandingly remarkable values. Criteria within the category may be modified and additional criteria may be included to make them more meaningful in the region of comparison. Additional criteria are not used to create any subcategories within the value categories established in the Act. The Chapter 80 criteria as well as the additional Gila National Forest specific criteria are shown in table 73.

Table 73. Criteria used for establishing outstandingly remarkable values

ORV	Chapter 80 Criteria	Additional Gila NF Specific criteria
Scenery	Landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features or attractions. Additional factors, such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed, may be considered. Scenery and visual attractions may be highly diverse over different parts of the river or river segment. Outstandingly remarkable scenic features may occupy only a small portion of a river corridor.	Vast, expansive viewsheds are possible in certain stretches within the river corridor. Air quality and natural night sky are important values.
Recreation	Recreational opportunities are high quality and attract, or have the potential to attract, visitors from throughout or beyond the region of comparison; or the recreational opportunities are unique or rare within the region. River-related recreational opportunities include, but are not limited to, sightseeing, interpretation, wildlife observation, camping, photography, hiking, fishing, hunting, and boating. The river may provide settings for national or regional use or competitive events.	Solitude is an important value. Canyoneering, rockclimbing, rappelling, hot spring soaking, recreational driving/ecotourism, recreational mining (gold panning) are additional opportunities. Birdwatching is a key part of wildlife observations with a large number of species occurring on the Forest. Fishing for endemic species such as Gila trout is a unique experience.

ORV	Chapter 80 Criteria	Additional Gila NF Specific criteria
Geology	<p>The river corridor contains one or more examples of a geologic feature, process, or phenomenon that is unique, rare or exemplary within the region of comparison. The feature(s) may be in an unusually active stage of development, represent a “textbook” example, or represent a unique, rare or exemplary combination of geologic features (erosional, volcanic, glacial, or other geologic structures).</p>	<p>Caves could also be included if in the river corridor. Waterfalls (might be more appropriate for scenery) and hot springs are unique features.</p>
Fish	<p>Fish values may be judged on the relative merits of either fish populations or habitat, or a combination of these river-related conditions.</p> <p><i>a. Populations.</i> The river is nationally or regionally an important producer of resident and/or anadromous fish species. Of particular significance are a diversity of fish species or the presence of wild stocks and/or Federal or State-listed or candidate threatened, endangered, or species of conservation concern.</p> <p><i>b. Habitat.</i> The river provides uniquely diverse or high quality habitat for fish species indigenous to the region of comparison. Of particular significance is exemplary habitat for wild stocks and/or Federal or State-listed or candidate threatened or endangered species, or species of conservation concern. Consider also rare and unique habitats within the corridor.</p>	<p>Special emphasis on irreplaceable populations and on biodiversity for multiple threatened and endangered species.</p>
Wildlife	<p>Wildlife values may be judged on the relative merits of either terrestrial or aquatic wildlife populations or habitat, or a combination of these conditions.</p> <p><i>a. Populations.</i> The river, or area within the river corridor, contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species diversity, species considered to be unique, and/or populations of Federal or State-listed or candidate threatened or endangered species, or species of conservation concern.</p> <p><i>b. Habitat.</i> The river, or area within the river corridor, provides uniquely diverse or high quality habitat for wildlife of national or regional significance, and/or may provide unique habitat or a critical link in habitat conditions for Federal or State-listed or candidate threatened or endangered species, or species of conservation concern. Contiguous habitat conditions are such that the biological needs of the species are met.</p>	<p>Special emphasis on irreplaceable populations and on biodiversity for multiple threatened and endangered species.</p>

ORV	Chapter 80 Criteria	Additional Gila NF Specific criteria
Historic and Cultural Values	<p>The river, or area within the river corridor, contains important evidence of historic or pre-historic occupation or use by humans. Sites may have national or regional importance for interpreting history or prehistory.</p> <p><i>a. History.</i> Sites or features are associated with a significant event, an important person, or a cultural activity of the past that is now rare or unique in the region. A historic site or feature, in most cases, is 50 years old or older.</p> <p><i>b. Prehistory.</i> Sites of prehistoric human use or occupation may have unique or rare characteristics or exemplary anthropological value such as evidence of prehistoric human practices and modes of living. Areas within the river corridor may have been used for rare sacred purposes, or represent the origin or conflict of cultures.</p>	<p>The standard requires that typical visitors would generally find their visit enhanced significantly by the presence of these resources (e.g., through seeing rock art, cliff dwellings, or other readily apparent sites). Interpretive value does not require interpretation but indicates the area and river corridor’s significance beyond the normal “background” level of cultural resources in the analysis area.</p>
Other Similar River-related values	N/A	N/A

The determination that a river area does or does not contain one or more outstandingly remarkable values is a professional decision on the part of the forest supervisor as informed by the ID Team, best available scientific information, and stakeholder input.

As part of this determination process, input was solicited and documented from organizations and individuals in fall 2018. For those rivers not evaluated in 2002, the Gila National Forest asked for ideas on what rivers have outstandingly remarkable values (adding specific recommendations for outstandingly remarkable value type was highly recommended). For those rivers evaluated in 2002, the Gila National Forest asked for any changed circumstances that would warrant reevaluating the river’s eligibility. The forest requested that stakeholders be specific to what outstandingly remarkable value(s) that they believe a river possesses, and the reasons why they feel it is remarkable within a larger region of comparison. If they feel that an eligible river should no longer be considered eligible, the Forest asked for any changed circumstances and why the outstandingly remarkable values may no longer be present. Input was encouraged using email, letter, or even using the interactive webmap. Other sources of information for identifying outstandingly remarkable values included the Nationwide Rivers Inventory; State river assessments; Tribal governments, other Federal, State, or local agencies; and the public.

Stakeholders also had the opportunity to review and provide feedback on the draft criteria used for establishing outstandingly remarkable values when the draft Wild and Scenic River Eligibility Study process paper ([english](#), [en espanol](#)) was released in fall 2018.

Regions of Comparison

The region of comparison is a geographic area that provides the basis for meaningful comparative analysis of potentially eligible rivers. The ID Team was tasked with identifying a “region of comparison,” for each outstandingly remarkable value. The region of comparison may vary for different rivers or categories of outstandingly remarkable values, so multiple regions of comparison may be used to evaluate one river. Regions of comparison may also be similar, or even the same

across the Forest. Each region of comparison is scaled at an appropriate level for the type of river value being evaluated.

For example, for one particular river, the appropriate region of comparison for cultural values may be an entire National Forest, but for scenic values the appropriate one may be the portion of the State in which the river is located. However, the forest supervisor may determine that a single region of comparison can be used for the evaluation of all outstanding remarkable values.

Once the regions of comparison were identified, each river’s values were analyzed in comparison with other rivers in that region. Regions of comparison should be large enough to incorporate similar rivers with a wide range of values so that outstandingly remarkable values can be recognized.

The evaluation of small rivers and streams that are similar throughout their length and watershed were combined into the most common watershed descriptor for the area, or identified and evaluated as separate rivers when they have one or more outstandingly remarkable value of their own.

During IDT meetings in 2017, each program area shared their draft ideas and rationale for their Regions of Comparison suggestions for their program-related ORVs with the larger group for discussion, and conditional acceptance as draft, regions of comparison. As with all aspects of the process not required by Forest Service Handbook direction, these draft regions of comparison are subject to change, update and modification due to additional information, agency interior review, and public and stakeholder input. The draft Regions of Comparison for the Gila National Forest are listed in table 74 below along with their rationales.

Table 74. Regions of comparison for the outstandingly remarkable values

ORV	Region of Comparison
<p>Scenery</p>	<p>Gila National Forest, adjacent national forests (all of Apache NF, Magdalena and Mount Taylor districts of Cibola NF, and Coronado NF Safford District and lower elevations of Douglas District, and including NM “Bootheel Region”)</p> <p><i>Rationale/Notes</i></p> <ul style="list-style-type: none"> • Shared watersheds and basins • Similar rivers and landscapes between forests • The Rio Grande as the eastern boundary
<p>Recreation</p>	<p>Gila National Forest and Magdalena District of Cibola National Forest</p> <p><i>Rationale/Notes</i></p> <ul style="list-style-type: none"> • Similar visitation numbers and demographics to the Cibola NF district • Gila is a unique setting for the southwest, due to water availability • Unique opportunities include river floating, fishing, and canyoneering
<p>Geology</p>	<p>The Gila National Forest (GNF) and the adjacent Apache-Sitgreaves National Forest are the regions of comparison.</p> <p><i>Rationale/Notes:</i></p> <ul style="list-style-type: none"> • Similar geology throughout both forests • The northern, eastern and southern boundaries of the Gila NF coincide with the limits of the Datil-Mogollon Volcanic Field

ORV	Region of Comparison
Fish	Watershed 4th code (where headwaters originate) forest-wide; entirety of Gila/San Francisco Rivers in Arizona and New Mexico <i>Rationale/Notes</i> <ul style="list-style-type: none"> • Consider both populations of fish and habitat availability • Basins contain endemic species • Not whole Rio Grande basin so somewhere this will be split • Individual populations and assemblages can be important
Wildlife	Arizona and New Mexico <i>Rationale/Notes</i> <ul style="list-style-type: none"> • Species range of federally listed and species of conservation concern are comparable across the region
Historic and Cultural Values	Gila National Forest <i>Rationale/Notes</i> <ul style="list-style-type: none"> • Captures the primary cultural groups in the area • Northern boundary of Gila NF is a break/transition to another cultural group
Other Similar River-related values	By Their Nature Unique Individually; Determined at the Time of ORV Identification

Stakeholders had the opportunity to review and provide feedback on the draft regions of comparison when the draft Wild and Scenic River Eligibility Study process paper ([english](#), [en espanol](#)) was released in fall 2018.

E. Eligibility Review

The Gila Wild and Scenic Rivers ID Team met to develop the draft regions of comparison and Gila-specific criteria for outstandingly remarkable values. At a previous meeting, Team members were assigned independent work projects to prepare for the working meetings. These independent work assignments included review of the best available scientific information and documentation for the previously studied rivers and considering changes in circumstances to be able to discuss if there is a change in circumstance, or if the results of the previous study stand.

- i. Following development of the interim regions of comparison, the interdisciplinary team began a process of systematically identifying potential outstandingly remarkable values for each category (e.g., fish, geology, etc.) on each river included in the inventory by comparing to the eligibility criteria and utilizing public comments received throughout the process. This was accomplished by using a spreadsheet that organized the rivers into the fourth code watershed. The rivers included on the spreadsheet included all 245 named rivers (and their segments) from USGS Topographic Quadrangles, other waterways that were named as canyons or other features but were known to the ID Team to be free-flowing and having potential to contain outstandingly remarkable values, and all rivers that were documented as being evaluated previously for eligibility, and were included whether they were considered eligible or not.
- ii. FSH Chapter 80 direction requires that each forest undergoing forest plan revision must conduct a WSR Eligibility Study on any named rivers on the USGS Topographic Maps, as well as previously studied rivers that have changed circumstances. In order to be efficient and systematic, the previously studied rivers were included on the process spreadsheet, and

changed conditions were considered for each as the process moved through the list. If a river had changed conditions, such as a wildfire within the area since the prior eligibility study, it was re-examined for outstandingly remarkable values that would make it eligible as well as no longer possessing outstandingly remarkable values from the previous study.

- iii. The list of inventoried rivers was populated with columns of information relevant to the eligibility of each river, such as miles that flow through important habitat areas, miles within wilderness or inventoried roadless areas, etc. ArcMap, a tool for working with maps and geographic information, was used to display the named streams in context with spatial data representing attributes of the resource themes associated with identification of outstandingly remarkable values (location of critical habitat, special status species occurrence data, cultural resources etc.).
- iv. For purposes of the interim determination of eligibility, the columns that the ID Team worked through were those that corresponded to the types of outstandingly remarkable values identified in the planning handbook, and included: scenery, recreation, geology, fish, wildlife, historic and cultural values, and other similar river-related values. The process was systematic, beginning with the scenery column, and going through each river within the fourth code for each outstandingly remarkable values type. For rivers that were thought to have potential outstandingly remarkable values in that category, an X was placed in the box corresponding to that river's row in the column. For rivers that the ORV were thought to lack potential outstandingly remarkable values in that category, the corresponding box of the river's row in that column were left blank. A column was provided for comments and additional information to inform the selections for the river's outstandingly remarkable values, and the changed circumstances, if any, that prompted a new consideration for eligibility.
- v. The ID Team was then asked to rank the rivers within each outstandingly remarkable value from highest to lowest for each river individually; this was a useful tool for discussion and analysis.
- vi. The rivers identified by the ID Team with potential outstandingly remarkable values were subjected to an internal review with the employees of the Forest ranger districts for further refinement.
- vii. Additionally, a StoryMap online information and commenting tool, along with release of a DRAFT Wild and Scenic Rivers Eligibility Process paper and eligibility study maps of rivers to be considered, stakeholders had the opportunity to provide input on rivers that merited additional study for potential outstandingly remarkable values (see the Outstandingly Remarkable Values for the information requested).
- viii. The forest supervisor made a determination if a river area did or did not contain one or more outstandingly remarkable values (if the values and attributes were unique, rare, or exemplary) as a professional judgment as informed by the interdisciplinary team, best available scientific information, and stakeholder input. The eligibility review resulted in a list of 16 stream segments with outstandingly remarkable values. These eligible segments and the identified outstandingly remarkable value categories are found in table 75. Of the river segments that were included in the 2002 study, four were found in the review to be affected by changed circumstances now warranting eligibility, and 83 of the previously studied rivers were determined to have no relevant change in circumstances. All the rivers

determined to be eligible in the 2002 study (n=8) were determined to be still eligible in this review. Of the river segments not included in the 2002 eligibility study, four were found to be eligible and 154 were found to be ineligible due to lack of outstandingly remarkable values in the region of comparison. For more details on these determinations, please see the documentation section.

Table 75. Eligible Wild and Scenic Rivers identified in the eligibility study conducted during the plan revision process in the Gila National Forest

River Name	Outstanding Remarkable Values
Diamond Creek	Fish, Historic
Middle Box of the Gila River	Wildlife, Scenic, Recreation, Fish, Historic
Middle Fork Gila River	Scenic
West Fork Gila River	Scenic, Historic
Wilderness Run of the Gila River	Geologic, Scenic, Recreation, Historic, Wildlife
Holden Prong	Fish
Iron Creek	Fish
Las Animas Creek	Fish, Historic
Mineral Creek	Fish, Recreation
Mule Creek	Geologic
Lower Box of the San Francisco River	Scenic, Recreation, Wildlife
Upper Box of the San Francisco River	Scenic, Recreation
South Diamond Creek	Fish
Spruce Creek:	Fish
Whitewater Creek	Recreation, Historic
Willow Creek	Recreation

Detailed eligibility reports for each river determined eligible in the study that can be found in the documentation section.

Step 2: Assign an Interim Classification to Each River Segment

Upon determining eligibility, the Gila National Forest classified all eligible streams and stream segments per chapter 80 of the Land Management Planning Handbook. The preliminary classification of a river found to be eligible is based on the condition of the river and the development level of adjacent lands as they exist at the time of the study. The Wild and Scenic Rivers Act specifies and defines three classification categories for eligible rivers:

- Wild rivers
- Scenic rivers
- Recreational rivers

Eligible rivers may be divided into segments with different classifications when the levels of human use and activity create different degrees of development. When a river has one or more classifications, each river segment should be of sufficient size for its unique management needs. To determine which preliminary classification category to assign to a river segment, the interdisciplinary team used the Table 1 from the Planning Handbook Chapter 80, and shown in table 76.

Table 76. Classification criteria for wild, scenic, and recreational rivers

ATTRIBUTE	WILD	SCENIC	RECREATIONAL
Water Resource Development	Free of impoundment.	Free of impoundment.	Some existing impoundment or diversion.
			The existence of low dams, diversions, or other modifications of the waterway is acceptable, provided the waterway remains generally natural and riverine in appearance.
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	Largely primitive and undeveloped. No substantial evidence of human activity.	Some development. Substantial evidence of human activity.
	The presence of a few inconspicuous structures, particularly those of historic or cultural value, is acceptable.	The presence of small communities or dispersed dwellings or farm structures is acceptable.	The presence of extensive residential development and a few commercial structures is acceptable.
	A limited amount of domestic livestock grazing or hay production is acceptable.	The presence of grazing, hay production, or row crops is acceptable.	Lands may have been developed for the full range of agricultural and forestry uses.
	Little or no evidence of past timber harvest. No ongoing timber harvest.	Evidence of past or ongoing timber harvest is acceptable, provided the forest appears natural from the riverbank.	May show evidence of past and ongoing timber harvest.
Accessibility	Generally inaccessible except by trail.	Accessible in places by road.	Readily accessible by road or railroad.
	No roads, railroads, or other provision for vehicular travel within the river area. A few existing roads leading to the boundary of the area are acceptable.	Roads may occasionally reach or bridge the river. The existence of short stretches of conspicuous or longer stretches of inconspicuous roads or railroads is acceptable.	The existence of parallel roads or railroads on one or both banks as well as bridge crossings and other river access points is acceptable.
Water Quality	Meets, or exceeds criteria, or federally approved State standards for aesthetics, for propagation of fish, and wildlife normally adapted to the habitat of the river, and for primary contact recreation (swimming) except where exceeded by natural conditions.	No criteria are prescribed by the Wild and Scenic Rivers Act. The Federal Water Pollution Control Act Amendments of 1972 have made it a national goal that all waters of the United States are made fishable and swimmable. Therefore, rivers will not be precluded from scenic or recreational classification because of poor water quality at the time of their study, provided a water quality improvement plan exists, or is being developed in compliance with applicable Federal and State laws.	

A variety of things were considered regarding classification including shoreline development, accessibility, water quality, special lands uses (such as utility corridors and other special use permits), livestock grazing, and past management activities (such as timber harvesting, or exploration and development of oil and gas). The interdisciplinary team referred to maps and geographic information systems data to look at the level of development and access to the area. However, the interdisciplinary team did not take expected future development, or other changes

along the river corridor, into consideration. Table 77 shows the preliminary classifications. A final classification will be assigned if the river is designated by Congress.

Results of the Wild and Scenic Rivers Eligibility Process

Table 77 shows the 16 eligible rivers along with the outstanding remarkable values and classification resulting from the eligibility study process. These findings are part of this appendix to the draft environmental impact statement for the revised Forest Plan, which are available for stakeholder review and feedback. The findings will later be summarized in the plan decision document. Figure 70 is an overview map of where these 16 eligible rivers occur across the forest.

Table 77. Updated plan revision study identified eligible Wild and Scenic Rivers in the Gila National Forest with classifications and segment lengths

River Name	Outstanding Remarkable Values	Total Miles	Classification (# of miles)
Diamond Creek	Fish, Historic	23.80	Wild (22.12) Scenic (1.68)
Middle Box of the Gila River	Wildlife, Scenic, Recreation, Fish, Historic	8.90	Recreational (1.34) Wild (7.56)
Middle Fork Gila River	Scenic	35.54	Wild (35.54)
West Fork Gila River	Scenic, Historic	30.01	Wild (30.01)
Wilderness Run of the Gila River	Geologic, Scenic, Recreation, Historic, Wildlife	40.39	Wild (33.67) Recreational (6.72)
Holden Prong	Fish	7.27	Wild (7.27)
Iron Creek	Fish	3.53	Wild (3.53)
Las Animas Creek	Fish, Historic	7.35	Wild (2.53) Scenic (4.82)
Mineral Creek	Fish, Recreation	8.71	Wild (8.71)
Mule Creek	Geologic	4.33	Scenic (4.33)
Lower Box of the San Francisco River	Scenic, Recreation, Wildlife	17.02	Scenic (2.43) Wild (14.59)
Upper Box of the San Francisco River	Scenic, Recreation	5.70	Scenic (3.78) Wild (1.92)
South Diamond Creek	Fish	8.05	Wild (8.05)
Spruce Creek:	Fish	3.74	Wild (3.74)
Whitewater Creek	Recreation, Historic	14.73	Wild (11.79) Recreational (2.94)
Willow Creek	Recreation	4.95	Recreational (4.95)
Total Eligible River Miles:		224.11	

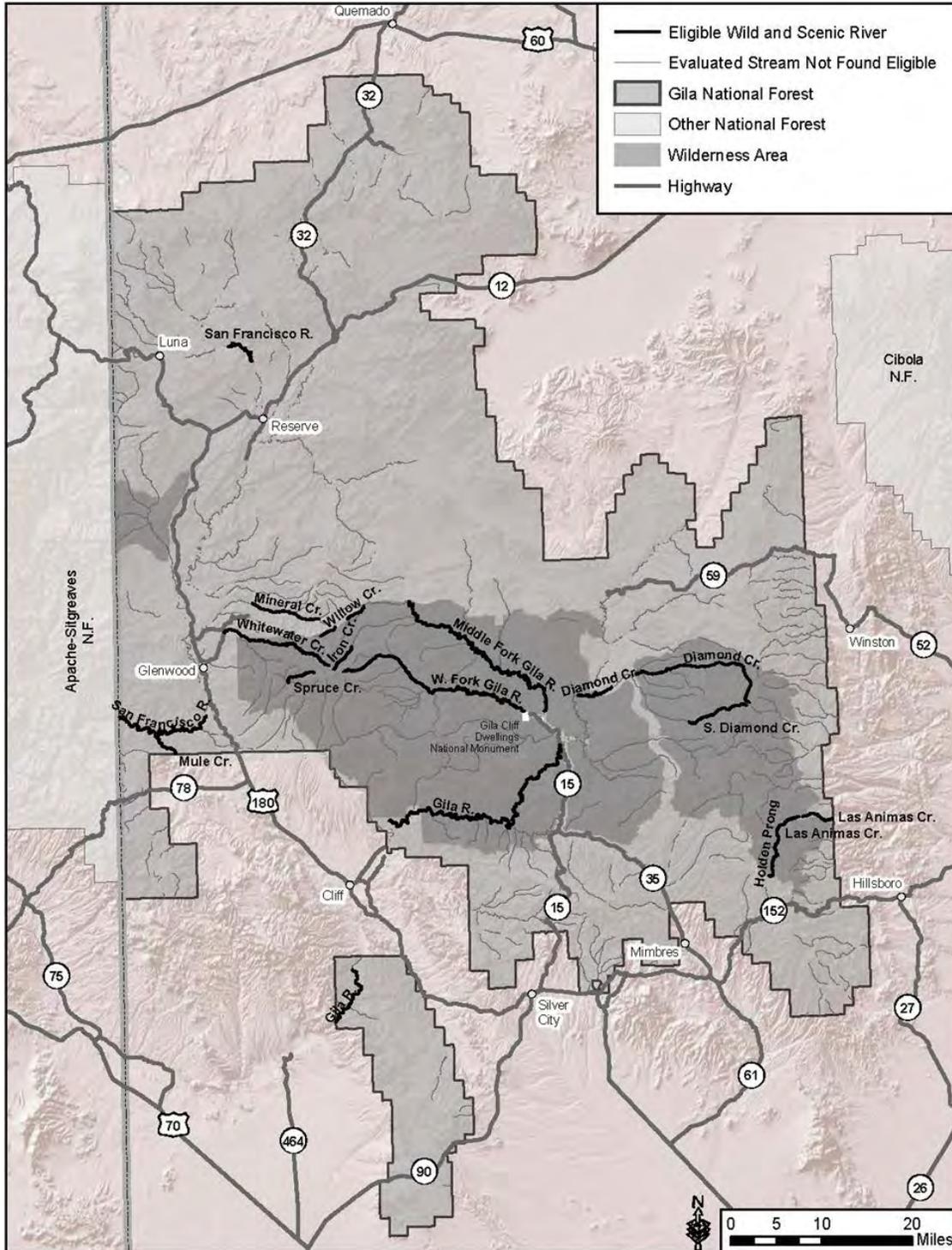


Figure 70. Segments determined eligible and ineligible for the National Wild and Scenic Rivers System under the plan revision updated eligibility study

The Documentation of Eligibility and Ineligibility section provided separate river narratives for each eligible river segment evaluated in the planning process and a map showing the rivers, their boundaries (beginning and ending termini), proposed classification of eligible segments, and

corridors. The river narratives are a synopsis of the relevant information related to eligibility and classification. The section also contains a series of tables and narratives that provide the basis for making the determination of eligibility and ineligibility. Tables list each river segment with information supporting whether the river is deemed eligible or not.

Management of Eligible Wild and Scenic Rivers

The revised Forest Plan has interim protection measures for all identified eligible river corridor(s) to maintain their free-flowing nature and outstandingly remarkable values until a congressional decision is made on the future use of the river and adjacent lands, or unless a suitability study concludes that the river is not suitable. Plan direction for managing eligible wild and scenic rivers can be found in the draft Forest Plan under Chapter 3, Management Areas, Eligible Wild and Scenic Rivers. Additional guidance including interim protection measures for eligible or suitable rivers can be found in FSH 1909.12, sec 84.3.

If the suitability study of a river results in a finding of ineligibility by the forest supervisor during the land management planning process, or during a separate wild and scenic river study, the study of that river is complete.

Along with the interim protective measures additional statutory, regulatory, or policy requirements may apply if the study river is located within a wilderness area or other designated area. In case of conflict between the provisions of the Wilderness Act and FSH 1909.12 chapter 80 the more restrictive provisions shall apply.

Rivers found eligible or suitable for the National System through Federal agency planning processes are not protected by the Act from proposed hydroelectric facilities or other federally assisted water resources projects that have the potential to affect the river's free-flowing characteristics and other identified values (IWSRCC 2018). However, the managing agency should, within its authorities, protect the values that make the river eligible or suitable.

Next Steps in the Wild and Scenic Rivers Process (Outside of Plan Revision)

Suitability Study

It is not a requirement of the 2012 Planning Rule that Forests must also conduct suitability studies, only eligibility studies are mandated during the Forest Plan Revision. However, if the forest supervisor should decide to conduct a suitability study of any eligible rivers, or should the Gila National Forest receive congressional direction to do so, a separate document will detail the process for that undertaking by an ID Team.

A suitability study provides the basis for determining which eligible rivers or river segments should be recommended to Congress as potential additions to the National System. The content of a suitability study is described in section 83.3 of the Forest Service Handbook. A suitability study will address these questions:

- Should the river's free-flowing character, water quality, and outstandingly remarkable values be protected, or are one or more other uses important enough to warrant doing otherwise?
- Will the river's free-flowing character, water quality, and outstandingly remarkable values be protected through designation?

- Will the benefits of designation exceed the benefits of non-designation?
- Is designation the best method for protecting the river corridor?
- Is there a demonstrated commitment to protect the river by any non-Federal entities that may be partially responsible for implementing protective management?

Any eligible river may be studied for its suitability for inclusion in the National System at any time. Rivers may be studied for suitability as part of a plan development or revision, as part of a plan amendment, in conjunction with a project decision, or in a separate study. The Forest may also receive congressional direction to undertake a Wild and Scenic Rivers Suitability Study at any time.

Designation or Return to Other Forest Uses by Congress through Legislation

Rivers are designated as part of the National System as specified in section 2(a) of the Wild and Scenic Rivers Act through:

- An Act of Congress. Designated rivers are managed by one of four Federal agencies: the Bureau of Land Management, the National Park Service, the U.S. Fish and Wildlife Service, and the USDA Forest Service.
- Secretary of the Interior. This designation process requires an act of the legislature of the State or States through which a river flows, and subsequent application by the Governor(s) of the concerned State(s) to the Secretary of the Interior.

Documentation of Eligibility and Ineligibility

The maps and tables within this section provide a detailed description of the stream segments determined eligible through the wild and scenic river's process. These segments, their outstandingly remarkable values, and classifications were determined through internal meetings with resource specialists and stakeholder inputs. The following descriptions provide the basis for the eligibility determination and a maps showing the rivers, their boundaries (beginning and ending termini), proposed classification of eligible segments, and corridors.

The section also contains a series of tables and narratives that provide the basis for making the determination of eligibility and ineligibility. Tables list each river segment with information supporting whether the river is deemed eligible or not (such as free-flowing characteristics, and presence or absence of, along with a description, of outstandingly remarkable values).

DIAMOND CREEK

Diamond Creek was found eligible by the results of the 2002 study, and there were no relevant changes in circumstances found by the ID Team; however, adjustments were made to update the section lengths in context of updated information on the location of ORVs. The 2002 finding of eligible is upheld by the forest supervisor.

River Segments Total 23.8 miles

	Diamond Creek – Upper Wild	Diamond Creek – Middle Wild	Diamond Creek – Scenic	Diamond Creek – Lower Wild
Segment Miles	13.31 miles	4.75 miles	1.68 miles	4.06 miles
Interim Classification	Wild	Wild	Scenic	Wild
Start Point	Headwaters	Boundary with Private wilderness inholding	Below private property at Links Ranch	Gila Wilderness Boundary
End Point	Boundary with private wilderness inholding	Aldo Leopold Wilderness Boundary	Gila Wilderness Boundary	Confluence with East Fork Gila River
Outstandingly Remarkable Values				
Heritage	The lower section from confluence with East Fork Gila River upstream to a point several miles above confluence with Middle Diamond Creek contains a concentration of prehistoric Mimbres-Mogollon sites that is an outstandingly remarkable example of a high-elevation Mimbres classic river-based community. Nestled deep in the forested uplands between the Black Range and Mogollon Mountains, the Diamond Creek Community is remarkable for its comparative isolation from the desert roots of the Mimbres culture in the Mimbres and Gila-Cliff valleys. Sites recorded to date in Diamond Creek include late Mimbres Classic villages, pueblos, farmsteads, field houses, and rock shelters, as well as a few antecedent late pit house period villages.			
Fisheries	There is an original, relict population of endangered Gila trout in the upper headwaters section that is genetically distinct from all other Gila trout lineages. This river segment supports the only known source population of the Main Diamond lineage of Gila trout.			
Additional Information:				

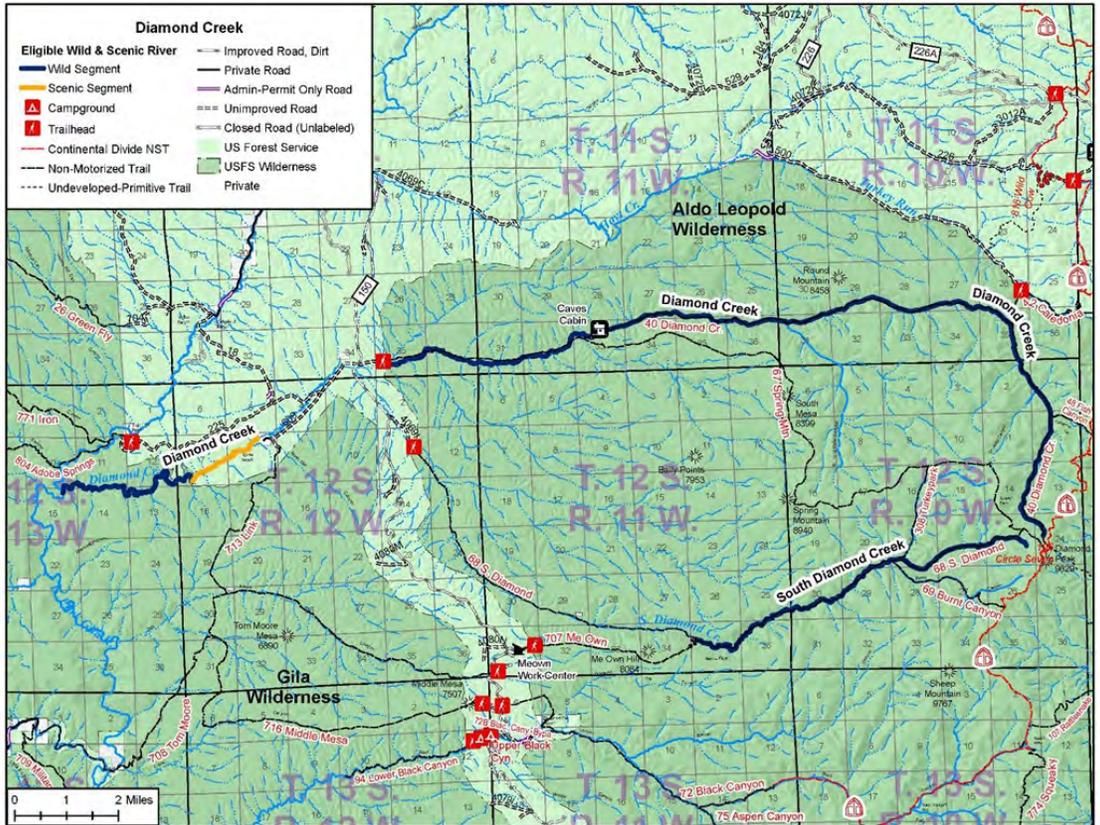


Figure 71. The eligible wild and scenic river segment locations and their classifications for Diamond Creek

MIDDLE BOX OF THE GILA RIVER

Was not included in the Gila National Forest 2002 eligibility study, although it was included in the 1982 NPS Nationwide Rivers Inventory. Found eligible by the ID Team in current analysis.

River Segments – Total 8.9 miles

	Middle Box of the Gila River - Recreational	Middle Box Run of the Gila River - Wild
Segment Miles	1.34	7.56
Interim Classification	Recreational	Wild
Start Point	Forest Boundary	South Bird Area Parking/Trailhead
Outstandingly Remarkable Values		
Wildlife	The river segment provides a well-developed example of the riparian cottonwood group ecosystem in New Mexico, and provides habitat for rich and unique birdlife including southwestern willow flycatcher, yellow-billed cuckoo, black hawk, and migratory birds. The area supports 231 species of birds representing 43 percent of the verified bird species documented in New Mexico (Shook 2015). Some of these species are at the northern edge of their natural range in southwestern New Mexico. This reach also flows through a research natural area established for avifauna. The river corridor is also habitat for narrow-headed gartersnake.	
Scenic	This reach takes in the Gila River as it transitions from a wide riparian floodplain in the upper segment to entering the “Middle Box,” or middle gorge, in the Big Burro Mountains.	
Recreation	Less than an hour drive from Silver City, the Bird Area segment is readily accessible and becoming more popular for recreational uses such as hiking, birdwatching, river access, and dispersed camping. Under the right conditions, the downstream segment is periodically boat-able, and this run is commonly referred to the “Middle Box” and features Class II to III+ boulder garden rapids.	
Fisheries	This area is considered a source population for spikedace and loach minnow, narrow endemic species listed as endangered (D. Myers, pers. comm.). These species are regularly found in large numbers in this reach of the Gila River and irregularly elsewhere in the basin (Paroz and Propst 2007). Recent genetic studies show that the spikedace and loach minnow found in other reaches have genetic ties to this reach suggesting that this population is responsible for a significant portion of the migration and establishment of other populations (Pilger et al. 2015). This river segment is a source population for loach minnow and spikedace.	
Heritage	The river corridor was an important travel route for Native American peoples. There are numerous important historic mining and ranching sites and prehistoric Native American sites, including depressions in riverside rock outcrops used to grind maize.	
Additional Information:		

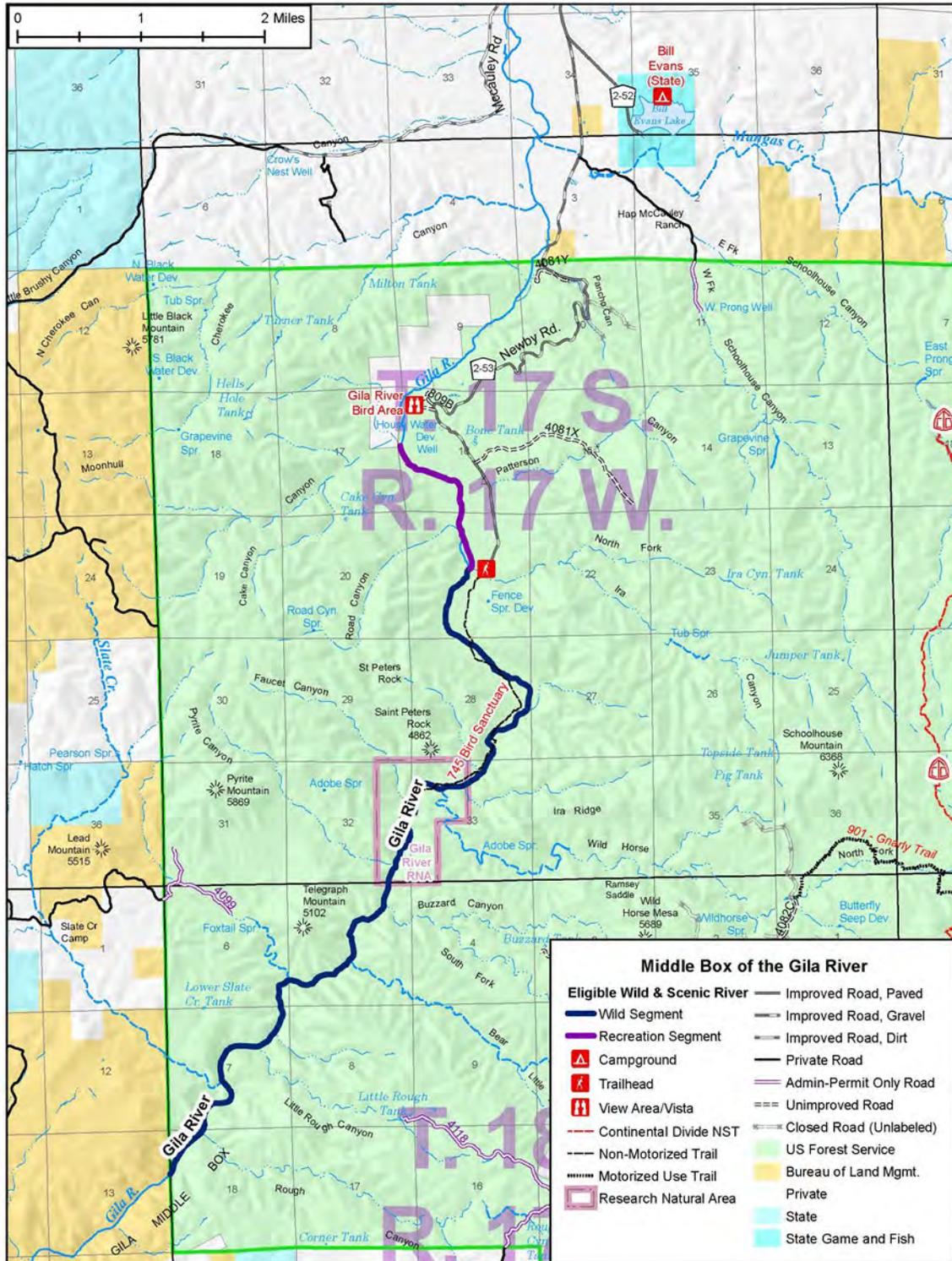


Figure 72. The eligible wild and scenic river segment locations and their classifications for the Middle Box of the Gila River

MIDDLE FORK GILA RIVER

The Middle Fork of the Gila River was found eligible by the results of the 2002 eligibility study, and there were no relevant changes in circumstances found by the ID Team; however, the segment length was updated with more arcuate GIS data to reflect the actual river miles. The 2002 finding of eligible is upheld by the forest supervisor.

River Segment Total 35.54 miles

Middle Fork Gila River	
Segment Miles	35.54
Interim Classification	Wild
Start Point	Gila Wilderness Boundary below Snow Lake
End Point	Gila Wilderness Boundary (T12 S, R14 W, Section 23)
Outstandingly Remarkable Values	
Scenery	<p>The Middle Fork of the Gila River is one of the most visited locations in the Gila Wilderness, the first designated wilderness in the world. The Middle Fork has outstanding views of rock formations along the middle third of its 36-mile length. The Gila conglomerate has been weathered into pinnacle formations in some locations and sheer rock walls of several hundred feet depth in others.</p> <p>The entire length has a rich growth of diverse riparian species intermixed with ponderosa pine and occasional stringers of mixed conifers. The riparian species, along with Virginia creeper and various species of wildflowers, adds considerable color in the fall. The trail is in the canyon bottom and crosses the meandering river about four times per mile. Because of the rugged topography, and steep cliffs, there are few entry/exit opportunities along the canyon.</p>
Additional Information:	

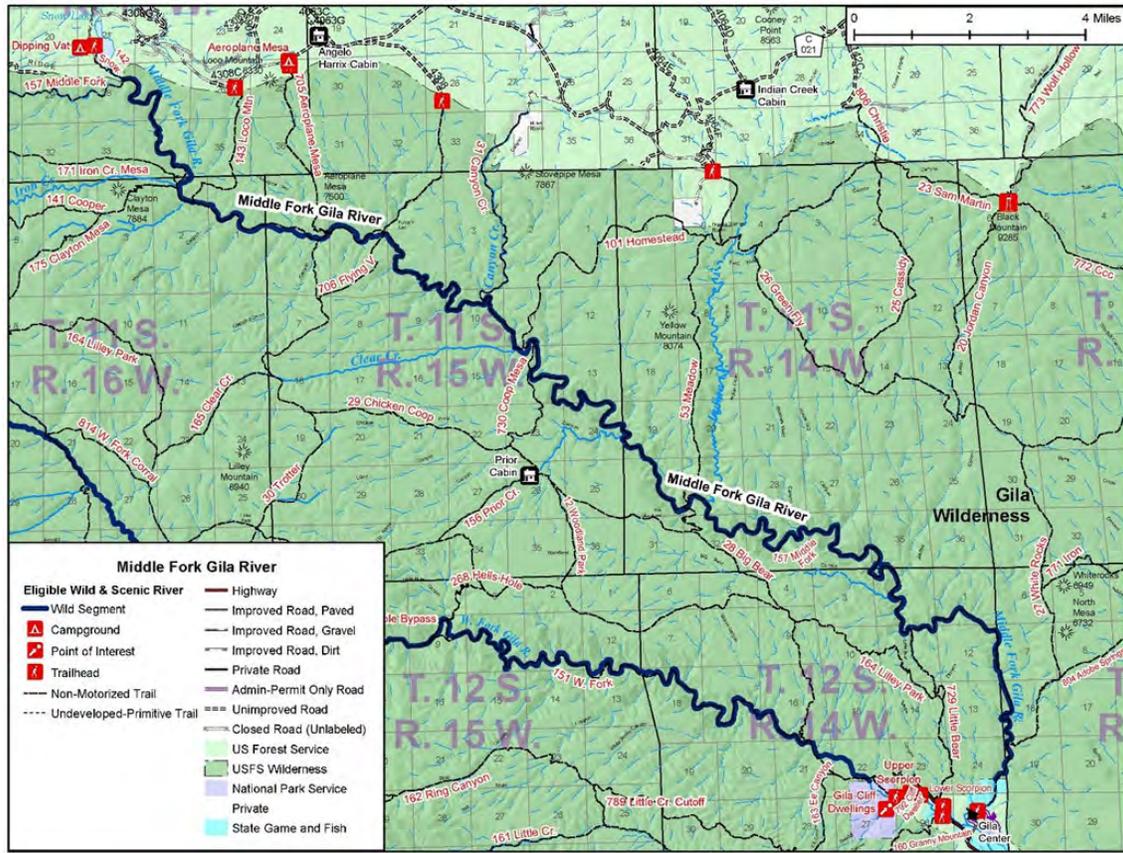


Figure 73. The eligible wild and scenic river segment locations and their classifications for the Middle Fork Gila River

WEST FORK GILA RIVER

West Fork Gila River was found eligible by the results of the 2002 eligibility study, and there were no relevant changes in circumstances found by the ID Team, however the segment length was updated with more arcuate GIS data to reflect the actual river miles. The 2002 finding of eligible is upheld by the forest supervisor.

River Segments – Total 30.01 miles

West Fork Gila River	
Segment Miles	30.01
Interim Classification	Wild
Start Point	Headwaters
End Point	North Boundary of Gila Cliff Dwellings National Monument
Outstandingly Remarkable Values	
Scenery	The West Fork of the Gila River is the most visited location in the Gila Wilderness, the first designated wilderness in the world. The biggest attraction is the scenery. In the upper portions, there are sheer rock cliffs about 500 feet tall. At other locations, the cliffs have been weathered into pinnacle formations. The entire length has a rich growth of diverse riparian species intermixed with ponderosa pine and occasional stringers of mixed conifers. The riparian species, along with Virginia Creeper and various species of wildflowers, adds considerable color in the fall. The trail is in the canyon bottom and crosses the river about four times per mile. Because of the steep cliffs, there are few entry/exit opportunities along the canyon.
Historic	White Creek Cabin on the upper reaches of the West Fork is eligible for the National Register of Historic Places. There are over 50 outstandingly remarkable sites associated with the prehistoric Mimbres-Mogollon, Archaic, and Apache cultures recorded along the lower reaches of the river, including pueblos, farmsteads, fieldhouses, agricultural fields, rock art, rock shelters, cliff dwellings, , and campsites.
Additional Information:	

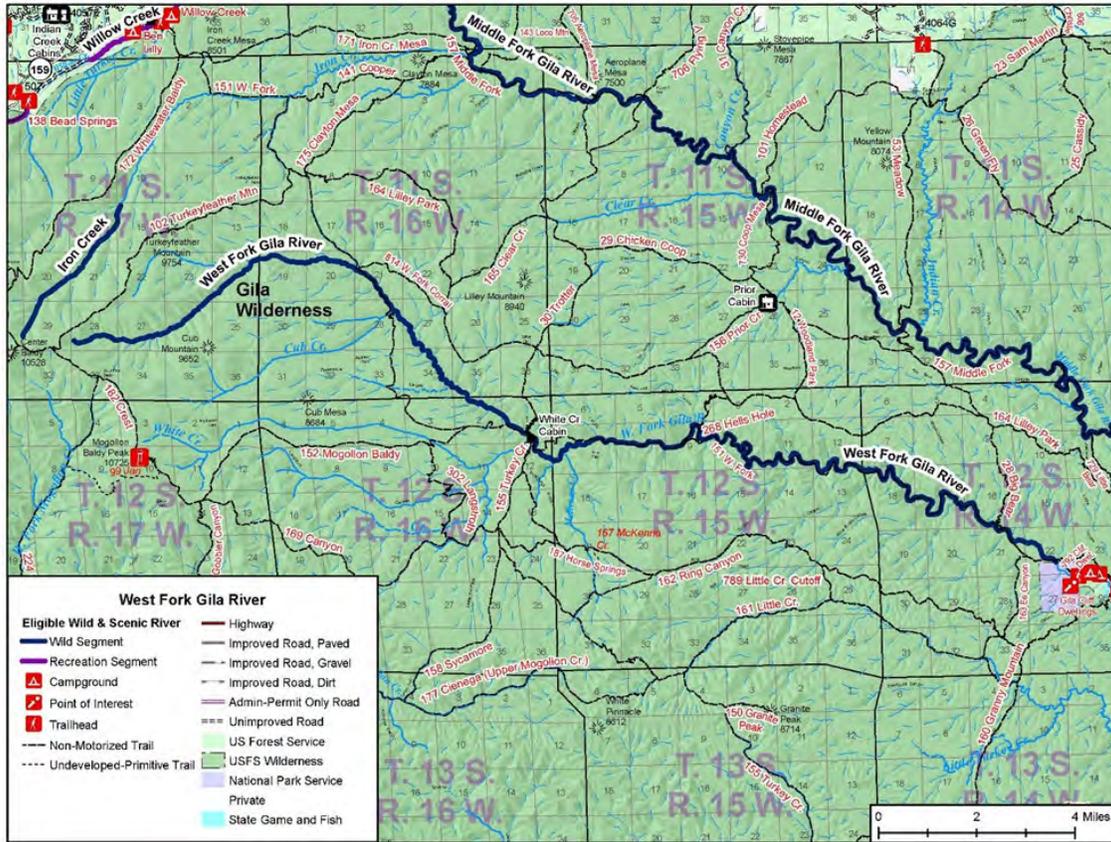


Figure 74. The eligible wild and scenic river segment locations and their classifications for the West Fork Gila River

WILDERNESS RUN OF THE GILA RIVER

Was not included in the Gila National Forest 2002 eligibility study, although it was included in the 1982 NPS Nationwide Rivers Inventory. Found eligible by the ID Team in current analysis.

River Segments – Total 40.39 miles

	Wilderness Run of the Gila River -Wild	Wilderness Run of the Gila River - Recreational
Segment Miles	33.67	6.72
Interim Classification	Wild	Recreation
Start Point	Grapevine Bridge	Wilderness Boundary
End Point	Wilderness Boundary	Forest Boundary near USGS Gage
Outstandingly Remarkable Values		
Geologic	Of geologic interest are the vents and eruptive complexes where they are exposed. The Volcanic Center of Copperas Creek Volcano, exposed along the Gila River downstream from the Grapevine Bridge/Highway 15 at Alum Mountain, is a well-documented example of an eruptive complex (Ratte et al. 2014).	
Scenic	The meandering pattern of the river with well-established riparian corridors set against the backdrop of starkly arid ridges, rugged mountains, and pronounced cliffs is particularly scenic. Other unique scenic features include a colorful area of mineralized and altered rocks at the Alum Mountain volcanic eruptive complex.	
Recreation	Under the right conditions, this reach is periodically boat-able, and the run is commonly referred to the “Wilderness Run” and involves a multiday float mostly contained in the Gila Wilderness. There are hot springs near Alum Mountain that one can hike to.	
Heritage	This river segment features many examples of outstanding heritage resources, including cliff dwellings, granaries, rock art, and historic mining. Many of these are readily visible from the river.	
Wildlife	Stronghold for blackhawks, bighorn sheep, southwestern willow flycatcher, yYellow-billed cuckoo, springsnails at Grapevine, and migratory birds.	
Additional Information:		

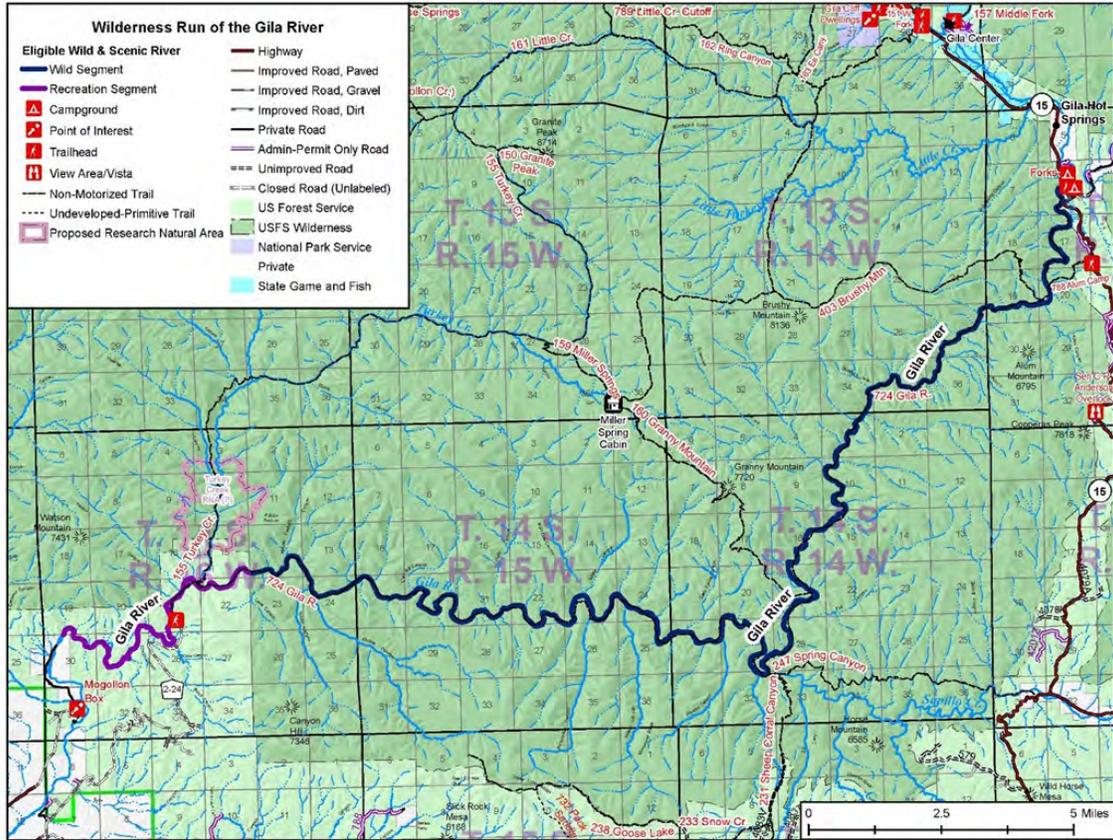


Figure 75. The eligible wild and scenic river segment locations and their classifications for the Wilderness Run of the Gila River

HOLDEN PRONG

Holden Prong was found eligible by the results of the 2002 study, and there were no relevant changes in circumstances found by the ID Team, however the segment length was updated with more arcuate GIS data to reflect the actual river miles. The 2002 finding of eligible is upheld by the forest supervisor.

River Segment – Total 7.27 miles

Holden Prong	
Segment Miles	7.27
Interim Classification	Wild
Start Point	Headwaters
End Point	Confluence with Las Animas Creek
Outstandingly Remarkable Values	
Fisheries	Historically the southernmost location of Rio Grande cutthroat trout in New Mexico. Lower elevation trout fishery unlike most Rio Grande cutthroat trout streams. Unique native fishery including Rio Grande sucker, Rio Grande chub, and Rio Grande cutthroat trout. This assemblage is found only in this stream.
Additional Information:	

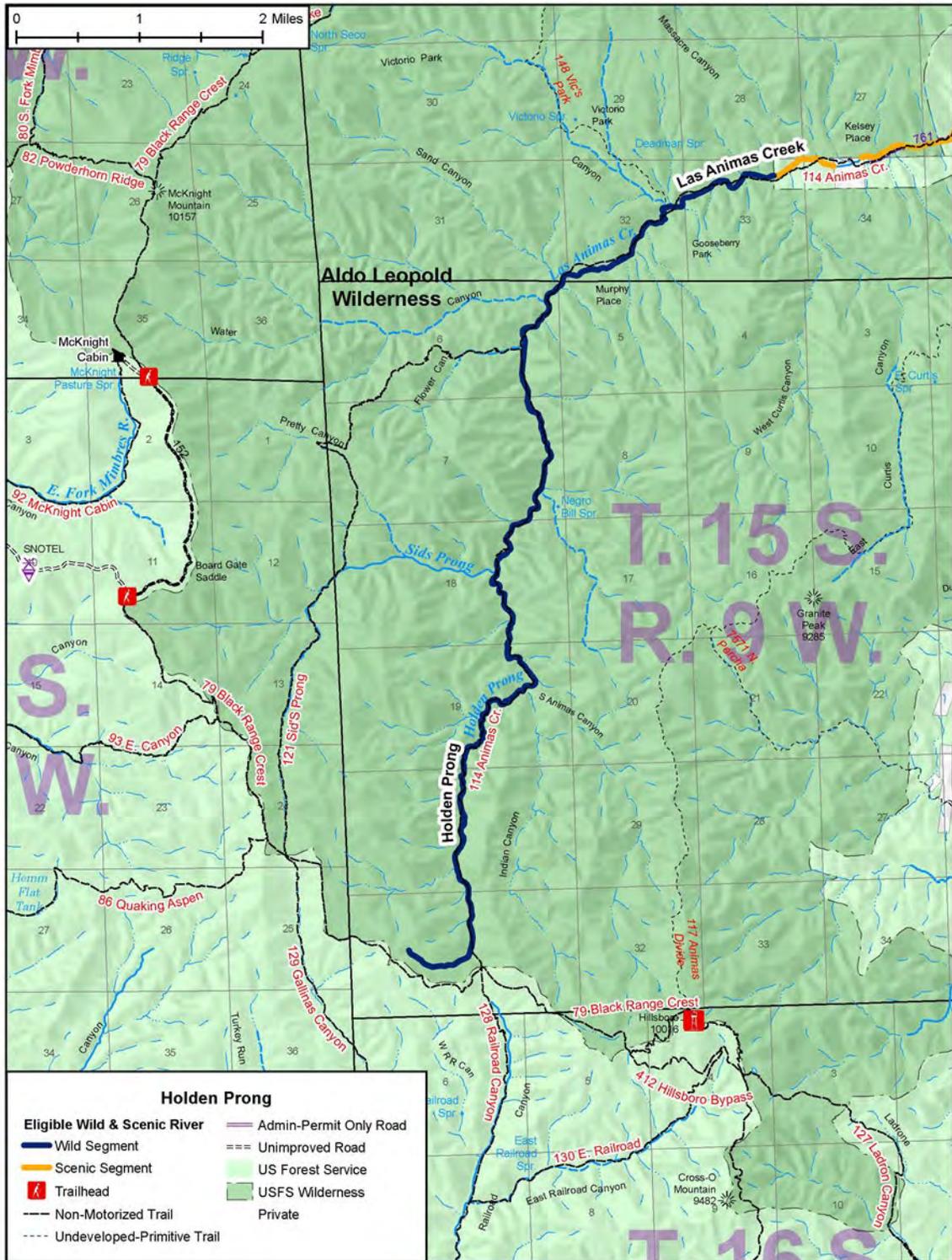


Figure 76. The eligible wild and scenic river segment locations and their classifications for Holden Prong

IRON CREEK

Iron Creek was reevaluated by the ID team, and it was found that changed circumstances existed warranting reevaluation due to a Gila trout lineage genetics study completed that contradicted earlier findings. This reevaluation resulted in a finding of eligible under the current study.

River Segments – Total 3.53 miles

Iron Creek	
Segment Miles	3.53
Interim Classification	Wild
Start Point	Headwaters
End Point	Fish barrier
Outstandingly Remarkable Values	
Fisheries	An intact population of Gila trout was discovered in the 1970s in the upper reach of Iron Creek and an artificial barrier was later constructed to prevent hybridization and competition with non-native trout species (Propst et al. 1992). However, initial genetic testing later on suggested that the Gila trout in Iron Creek were not pure Gila trout and were hybridized with rainbow trout (<i>Oncorhynchus mykiss</i>) (USFWS 2003). These hybrid Gila trout were not seen as contributing to the recovery of the species since they had lost some of the unique genetic identity of the species, which represents an important evolutionary history and local environmental adaptation. More recent genetic work now indicates that the Iron Creek population is a pure strain of Gila trout and the Iron Creek Gila trout is now considered a unique genetic lineage (USFWS 2015).
Additional Information:	

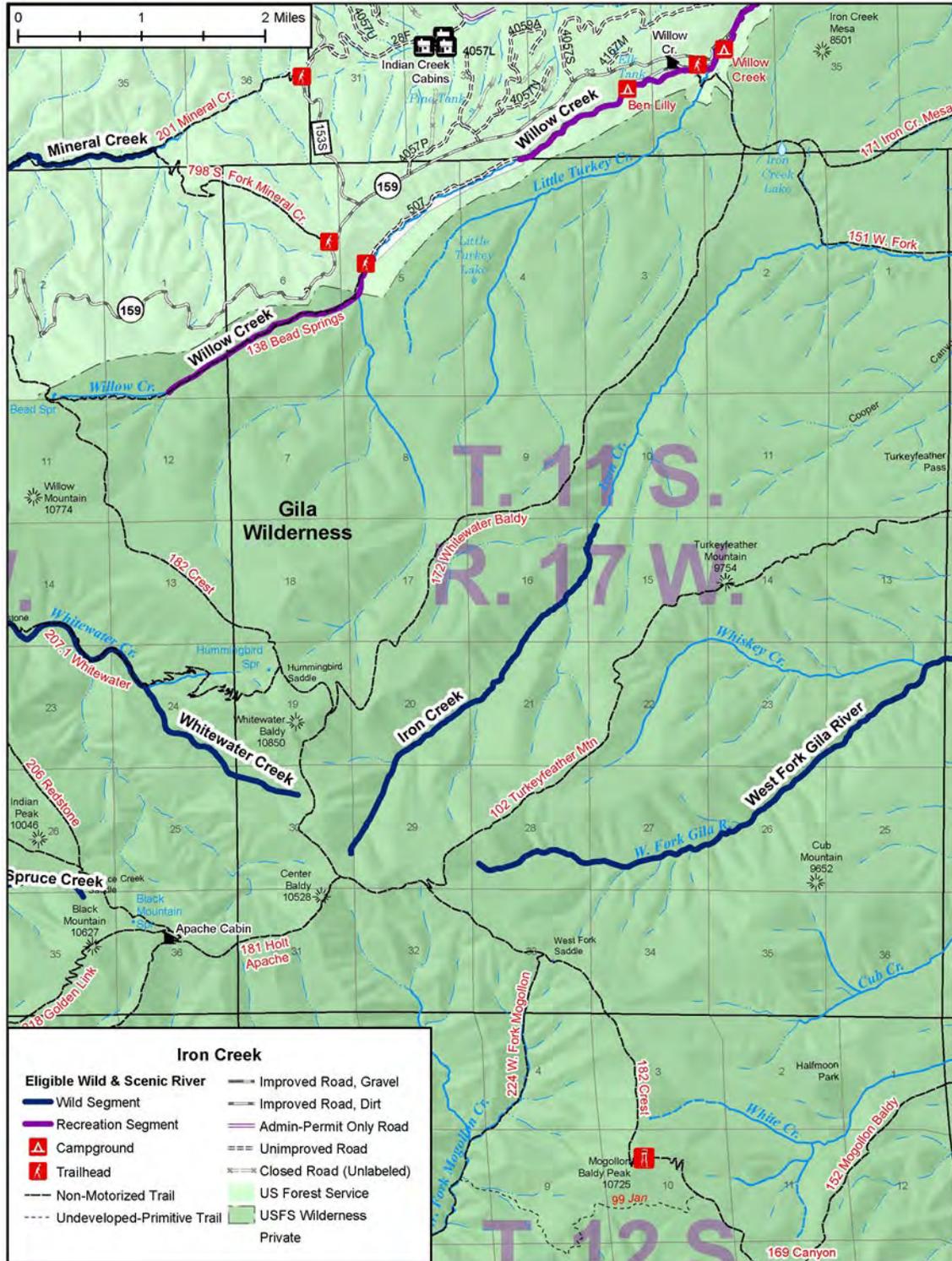


Figure 77. The eligible wild and scenic river segment locations and their classifications for Iron Creek

LAS ANIMAS CREEK

Las Animas Creek was found eligible by the results of the 2002 eligibility study, and there were no relevant changes in circumstances found by the ID Team. The 2002 finding of eligible is upheld by the forest supervisor. However, the findings of the initial classification were re-visited, as the upper section was incorrectly classified as scenic rather than wild, and the lower section was initially classified as wild instead of being scenic, and the segment lengths were updated with more arcuate GIS data to reflect the actual river miles. This adjustment is documented below and approved by the forest supervisor.

River Segments – Total 7.35 miles

	Las Animas Creek - Wild	Las Animas Creek – Upper Scenic	Las Animas Creek – Lower Scenic
Segment Miles	2.53	4.27	0.55
Interim Classification	Wild	Scenic	Scenic
Start Point	Junction of Water Canyon and Holden Prong	Aldo Leopold Wilderness Boundary	Private Property Boundary
End Point	Aldo Leopold Wilderness Boundary	Private Property Boundary	Forest Boundary
Outstandingly Remarkable Values			
Heritage	Las Animas Creek is historically significant as the location of a battle between the US Army 9 th Cavalry Buffalo Soldiers and Victorio's band of Chiricahua Warm Springs Apache. This battle occurred in September of 1879, and two men received the Congressional Medal of Honor for their heroism. Soldiers are buried on the site; and today it is marked by a monument commemorating the Battle of Las Animas. In addition, this place is considered important to the Fort Sill Warm Springs Apache living descendants of the Indian people who fought there. This is also a destination point for those interested in the Indian Wars period of American History.		
Fisheries	Historically the southernmost location of Rio Grande cutthroat trout in New Mexico. Lower elevation trout fishery unlike most Rio Grande cutthroat trout streams. Unique native fishery including Rio Grande sucker, Rio Grande chub, and Rio Grande cutthroat trout. This assemblage is found only in this stream.		
Additional Information:			

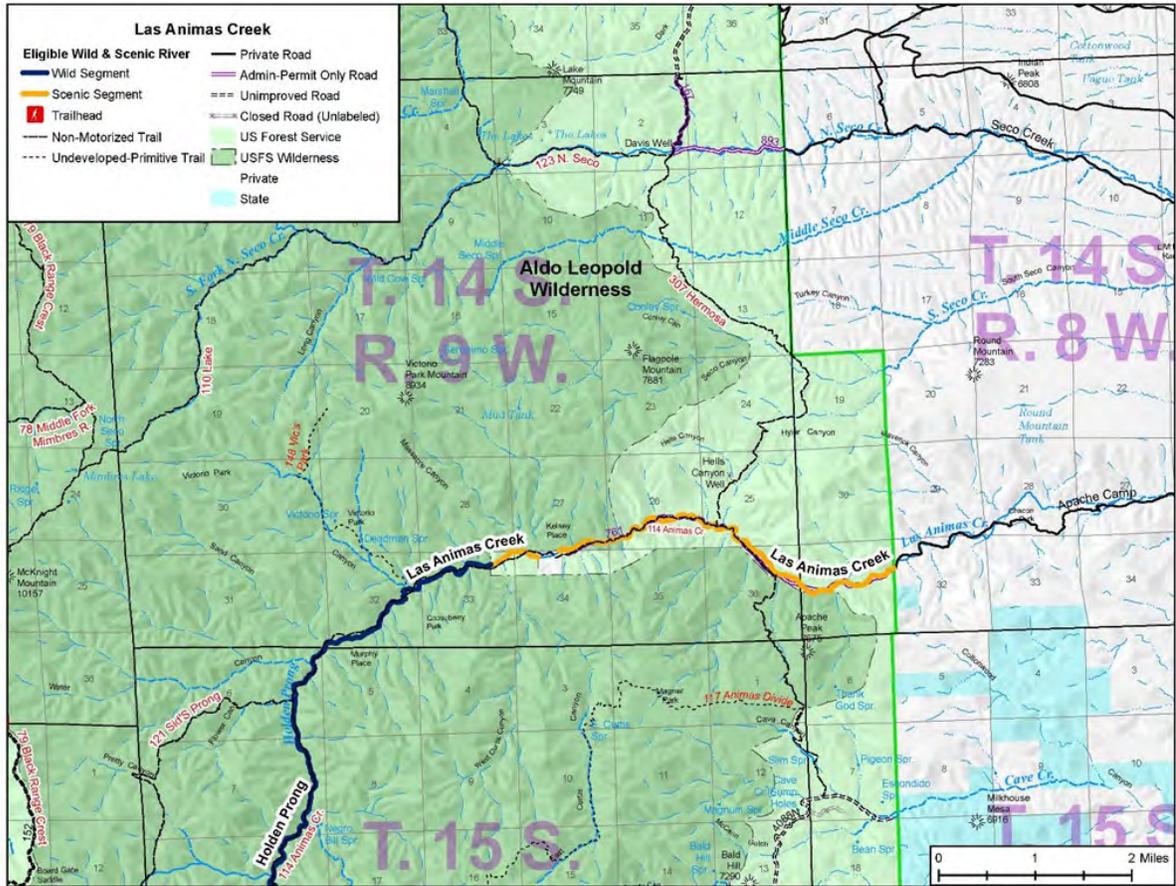


Figure 78. The eligible wild and scenic river segment locations and their classifications for Las Animas Creek

MINERAL CREEK

Mineral Creek was found not eligible by the results of the 2002 study; however, there are changed circumstances due to a unique population of Gila trout now being present.

River Segment – Total 8.71 miles

Mineral Creek	
Segment Miles	8.71
Interim Classification	Wild
Start Point	Headwaters
End Point	0.08 mile from private property boundary
Outstandingly Remarkable Values	
Fisheries	Mineral Creek was stocked with Gila trout in 2016. Not only does this add a population to the San Francisco watershed, but it was stocked with fish from the important Whiskey Creek lineage. The Whiskey Creek lineage is currently one of the least replicated of the Gila trout lineages as the relic population in is gone from Whiskey Creek due to the effects of the 2012 Whitewater Baldy Fire. Coincidentally this same fire made Mineral Creek suitable for Gila trout by removing non-native fishes. Although the watershed is still recovering, there was enough intact habitat in Mineral Creek to provide an opportunity for the Gila trout to be repatriated.
Recreation	There is now angling opportunities for Gila trout, and some of the other recreation features include hiking in scenic canyon.
Additional Information:	

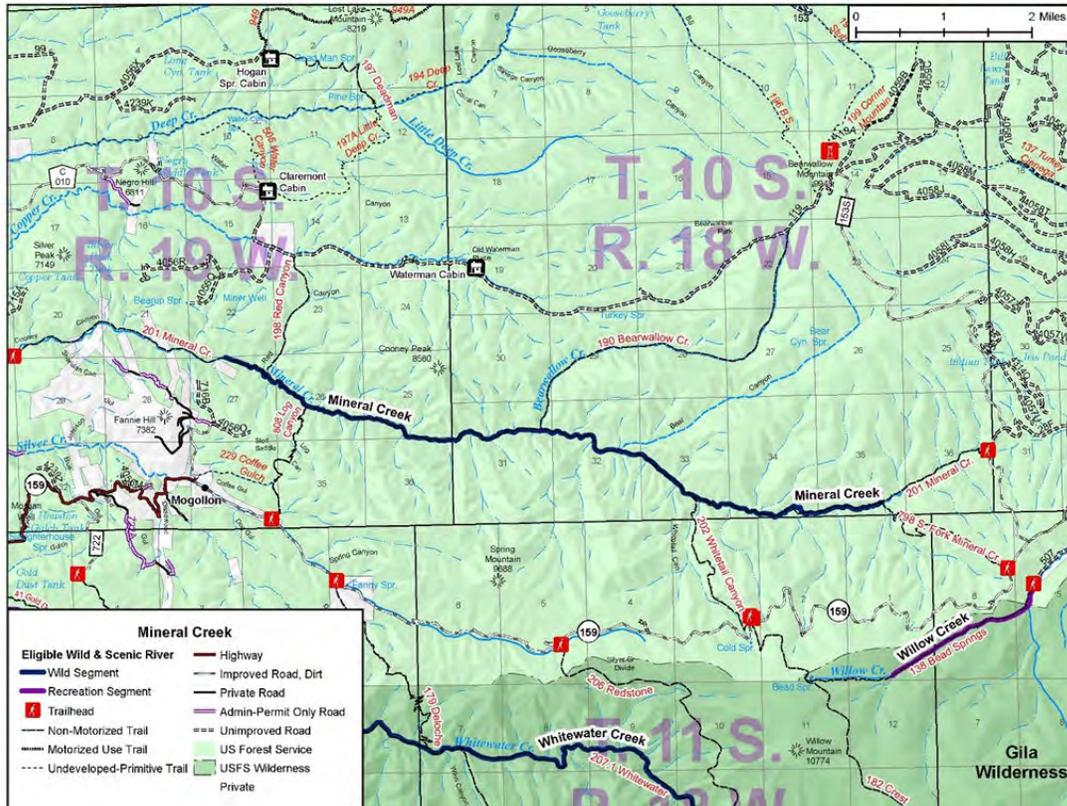


Figure 79. The eligible wild and scenic river segment locations and their classifications for Mineral Creek

MULE CREEK

Mule Creek was found not eligible by the results of the 2002 study; however, there are changed circumstances due to the identification of potential geologic ORVs in a paper published after the study was completed.

River Segment– Total 4.33 miles

Mule Creek	
Segment Miles	4.33
Interim Classification	Scenic
Start Point	Forest boundary North of NM Hwy 78
End Point	Confluence with San Francisco River
Outstandingly Remarkable Values	
Geology	Of geologic interest are the vents and eruptive complexes where they are exposed. Although Mule Creek was previously determined to be not eligible in the 2002 evaluation of streams it should be noted that the Mule Creek Vent exposed along the stream is spectacularly exposed and should be considered as an exemplary feature in the region. Ratte (2004) states that the Mule Creek outcrop likely rates as a world class geologic exposure of a rhyolite eruptive vent in cross section.
Additional Information:	

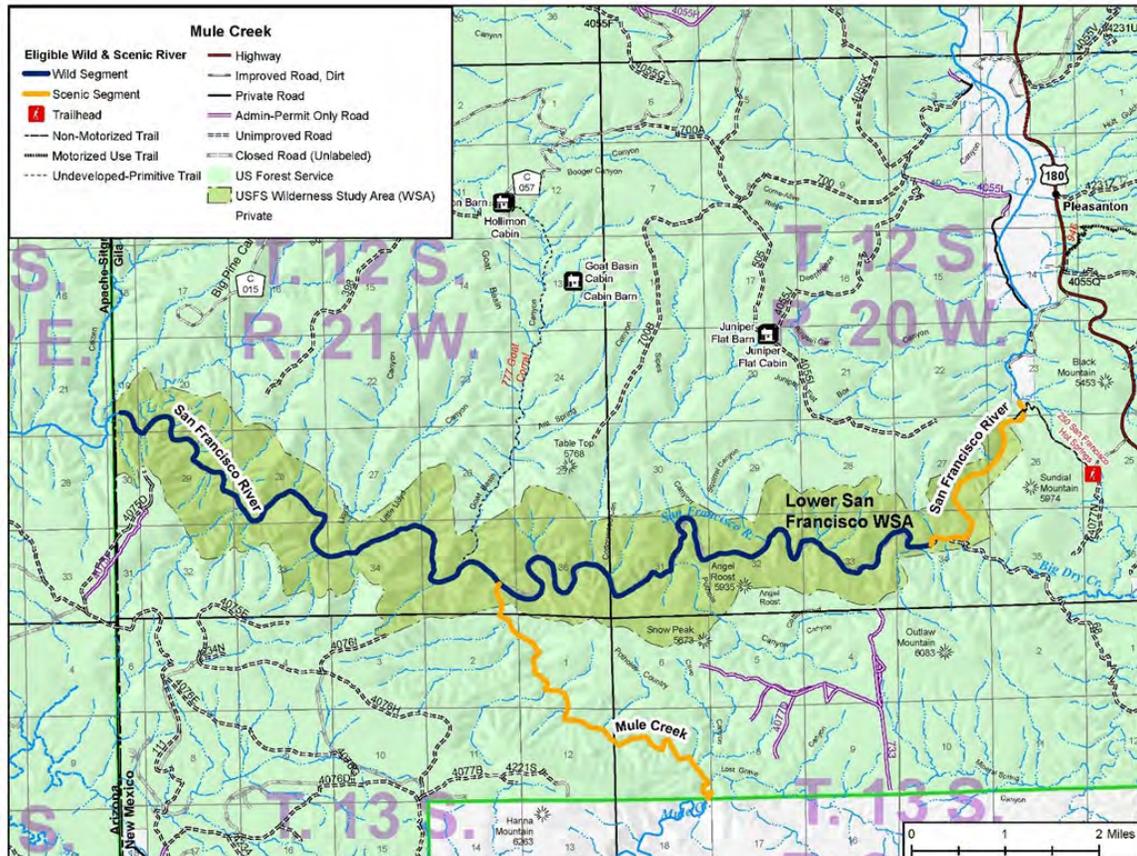


Figure 80. The eligible wild and scenic river segment locations and their classifications for Mule Creek

LOWER BOX OF THE SAN FRANCISCO RIVER

Was not included in the Gila National Forest 2002 eligibility study, although it was included in the 1982 NPS Nationwide Rivers Inventory. Found eligible by the ID Team in current analysis.

River Segments– Total 17.02 miles

	Lower Box of the San Francisco River - Scenic	Lower Box of the San Francisco River - Wild
Segment Miles	2.43	14.59
Interim Classification	Scenic	Wild
Start Point	Forest Boundary	Junction with terminus of FR 68 (as identified in TMR decision)
End Point	Junction with terminus of FR 68 (as identified in TMR decision)	State Line
Outstandingly Remarkable Values		
Scenery	Canyon reaches beginning at confluence with Big Dry Creek to the Arizona State Line are dramatically scenic.	
Recreation	The canyon is a popular hiking area, particularly to access the numerous hot springs. The river also provides great fishing and swimming opportunities, and during times of high water is an excellent whitewater floating experience.	
Wildlife	The area is habitat to big horn sheep; southwestern willow flycatcher and yellow-billed cuckoo.	
Additional Information:		

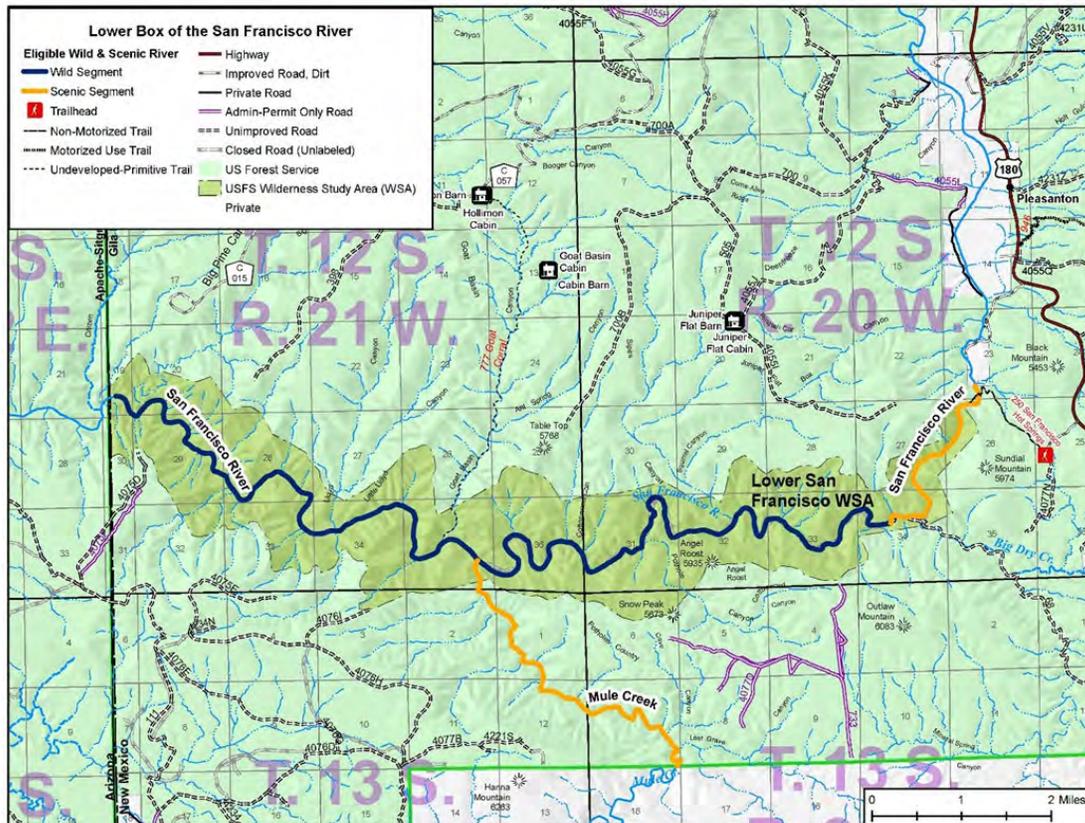


Figure 81. The eligible wild and scenic river segment locations and their classifications for the Lower Box of the San Francisco River

UPPER BOX OF THE SAN FRANCISCO RIVER

Was not included in the Gila National Forest 2002 eligibility study, although it was included in the 1982 NPS Nationwide Rivers Inventory. Found eligible by the ID Team in current analysis.

River Segments– Total 5.7 miles

	Upper Box of the San Francisco River - Scenic	Upper Box of the San Francisco River - Wild
Segment Miles	3.78	1.92
Interim Classification	Scenic	Wild
Start Point	Boundary from private	Entrance to Upper Frisco Box Canyon
End Point	Entrance to Upper Frisco Box Canyon	Pipeline above private property
Outstandingly Remarkable Values		
Scenery	The soaring, sheer walls of the Upper Box or “Frisco Box” rise to a thousand feet above the San Francisco River and are visible from miles around. Often clouds will interact with the drainage in interesting and notable ways where it appears that there is a cloud waterfall spilling out of the canyon.	
Recreation	The river corridor provides outstanding hiking opportunities, particularly to the upper Frisco Hot Springs from the north, and at the south approach to the canyon. The canyon section also provides outstanding canyoneering opportunities that are unique to the Gila and the greater surrounding region. (The American Canyoneering Association has rated this stretch of canyon as a 2c III. Route)	
Additional Information:		

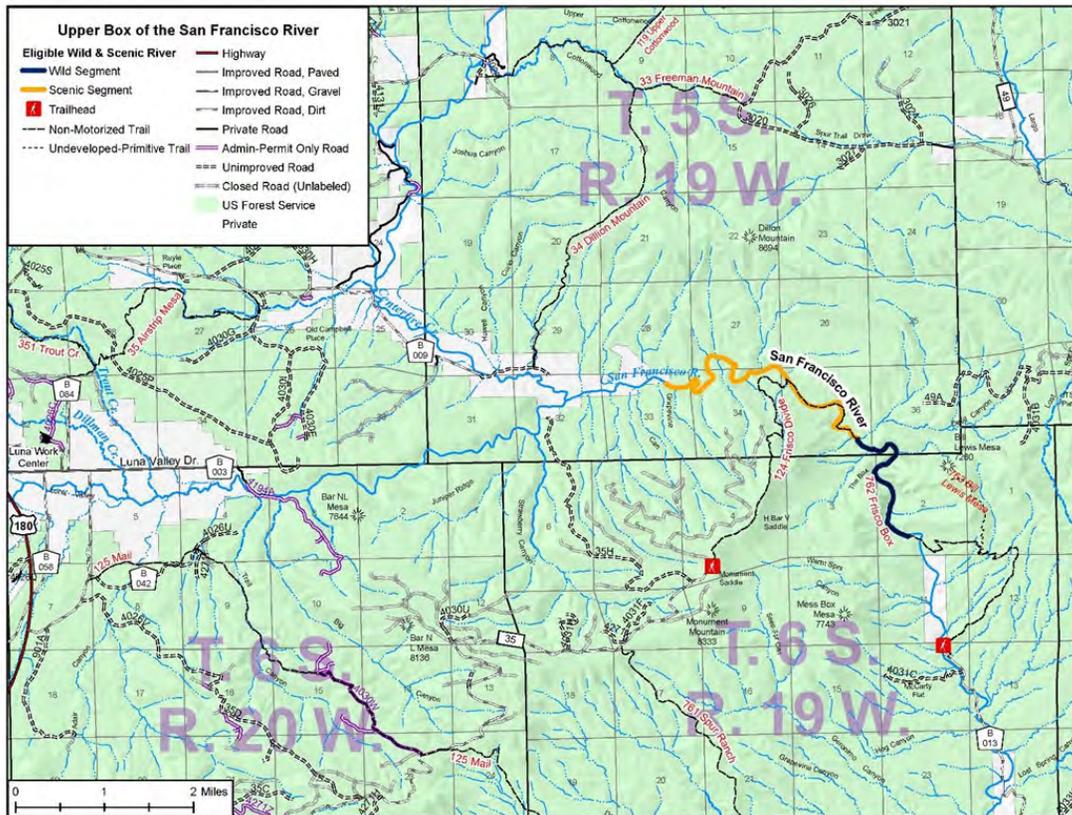


Figure 82. The eligible wild and scenic river segment locations and their classifications for the Upper Box of the San Francisco River

SOUTH DIAMOND CREEK

The South Fork of Diamond Creek was found eligible by the results of the 2002 eligibility study, and there were no relevant changes in circumstances found by the ID Team; however, the segment length was updated with more arcuate GIS data to reflect the actual river miles. The 2002 finding of eligible is upheld by the forest supervisor.

River Segment – Total 8.05 miles

South Diamond Creek	
Segment Miles	8.05 miles
Interim Classification	Wild
Start Point	Headwaters
End Point	Junction of Trails # 707 and # 68 (T12 S, R11 W, Section 35)
Outstandingly Remarkable Values	
Fisheries	There is an original relict population of endangered Gila trout that is genetically distinct from all other Gila trout lineages. This River Segment Supports the only known source population of the South Diamond lineage of the Gila trout.
Additional Information:	

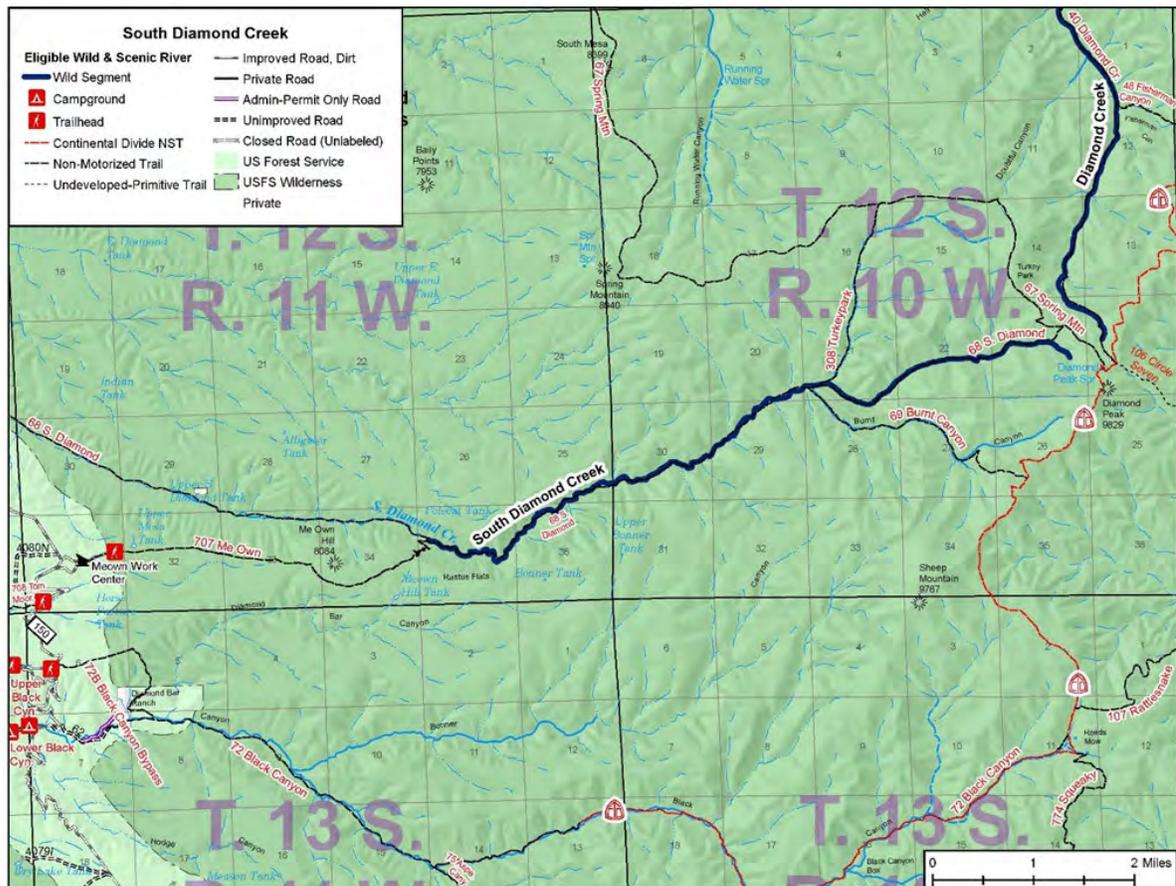


Figure 83. The eligible wild and scenic river segment locations and their classifications for South Diamond Creek

WHITEWATER CREEK

Whitewater Creek was found eligible by the results of the 2002 eligibility study, and there were no relevant changes in circumstances found by the ID Team, however the segment lengths were updated with more arcuate GIS data to reflect the actual river miles. The 2002 finding of eligible is upheld by the forest supervisor.

River Segments – Total 14.73 miles

	Whitewater Creek - Wild	Whitewater Creek - Recreational
Segment Miles	11.79	2.94
Interim Classification	Wild	Recreational
Start Point	Headwaters	Trail # 810
End Point	Trail # 810	Forest Boundary (T11 S, R19W, S6)
Outstandingly Remarkable Values		
Historic	Whitewater Creek is historically significant as the location of numerous mining related materials dating to the 1890s and later, including remains of the town of Graham, picturesque and intriguing remains of a water pipeline running for at least four miles along the creek (i.e., the original catwalk). CCC activities are also represented and the modern engineering feat of the hanging Catwalk in Whitewater Canyon is an attraction of much human interest. Together, these materials form a unique historic district that is eligible for the National Register of Historic Places, and is interpreted on site by the Gila National Forest.	
Recreation	Whitewater Creek is a destination for many people interested in 19th century mining history and associated geology of the region, and the hiking along the creek on the Catwalk National Recreation Trail along the cool and colorful Whitewater Canyon, and the Whitewater Picnic Area. This stretch of the creek is stocked with a legally recreation fishing catchable population of Gila trout, and provides a unique, high quality, and accessible recreational fishing opportunity in the context of its location alongside the Catwalk National Recreation Trail.	
Additional Information:		

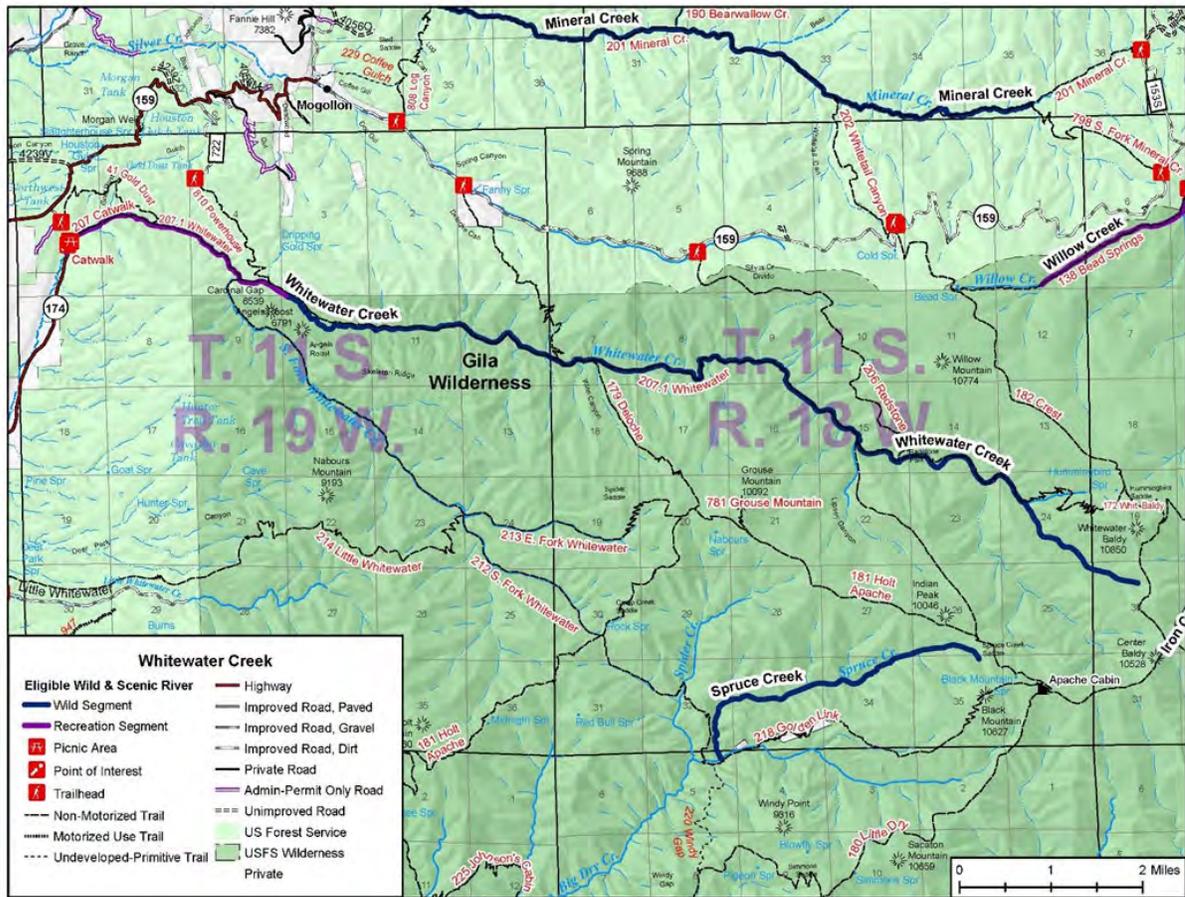


Figure 85. The eligible wild and scenic river segment locations and their classifications for Whitewater Creek

WILLOW CREEK

Changed circumstance is introduction of Gila trout for recreational fishing use.

River Segments– Total 4.95 miles

	Upper Willow Creek	Lower Willow Creek
Segment Miles	2.86	2.09
Interim Classification	Recreational	Recreational
Start Point	Crest Trail	Private Property Boundary
End Point	Bead Springs Trailhead	Confluence with Gilita Creek
Outstandingly Remarkable Values		
Recreation	Easy access, Gila trout fishing, campground opportunities	
Additional Information:		

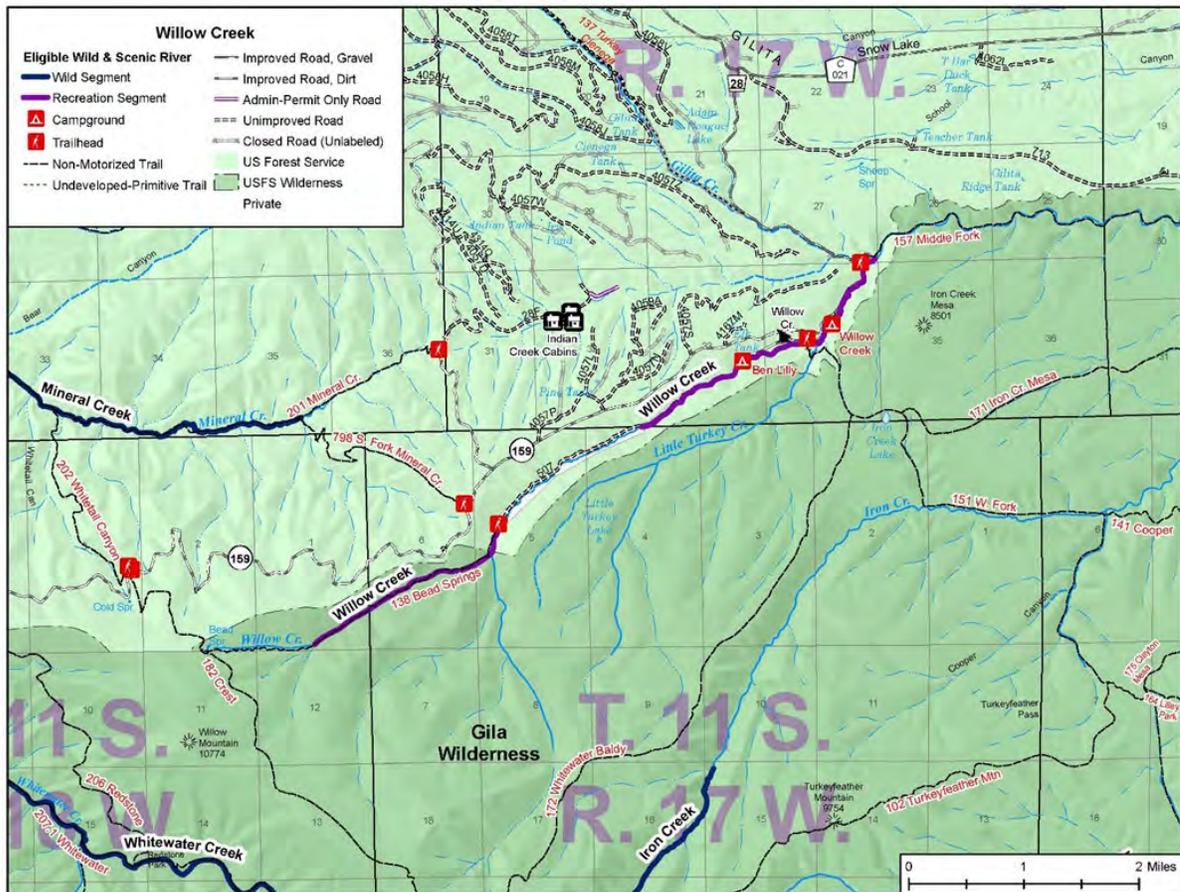


Figure 86. The eligible wild and scenic river segment locations and their classifications for Willow Creek

Table 78. Plan revision eligibility study results for rivers evaluated and determined to be eligible in 2002 study

River Name	Eligibility Determination	Rationale/Notes
Holden Prong	Still Eligible	No Change in Circumstances from 2002 study. See detailed description in documentation section.
Diamond Creek	Still Eligible	No Change in Circumstances from 2002 study. See detailed description in documentation section.
Las Animas Creek	Still Eligible	No Change in Circumstances from 2002 study. See detailed description in documentation section.
Middle Fork Gila River	Still Eligible	No Change in Circumstances from 2002 study. See detailed description in documentation section.
South Diamond Creek	Still Eligible	No Change in Circumstances from 2002 study. See detailed description in documentation section.
West Fork Gila River	Still Eligible	No Change in Circumstances from 2002 study. See detailed description in documentation section.
Whitewater Creek	Still Eligible	No Change in Circumstances from 2002 study. See detailed description in documentation section.
Spruce Creek	Still Eligible	No Change in Circumstances from 2002 study

Table 79. Plan revision eligibility study results for rivers evaluated and determined to be ineligible in 2002 study

River Name	Eligibility Determination	Rationale/Notes
Iron Creek	Now Eligible	Changed circumstance is a recent genetics study completed showing that the Iron Creek Gila trout population is a pure strain and the Iron Creek Gila trout is now considered a unique genetic lineage. See detailed description in documentation section.
Mineral Creek	Now Eligible	Changed circumstance is the stocking with an important lineage of Gila trout in 2016. See detailed description in documentation section.
Mule Creek	Now Eligible	Changed circumstance is the publishing of a scientific paper after the study was completed identifying the creek as a world class geologic exposure of a rhyolite eruptive vent. See detailed description in documentation section.
Willow Creek	Now Eligible	Changed circumstance is the introduction of Gila trout for recreational fishing use. See detailed description in documentation section.
Agua Fria Creek	Still Ineligible	No Change in Circumstances from 2002 study
Apache Creek	Still Ineligible	No Change in Circumstances from 2002 study
Apache Creek	Still Ineligible	No Change in Circumstances from 2002 study
Aspen Canyon	Still Ineligible	No Change in Circumstances from 2002 study
Bear Creek	Still Ineligible	No Change in Circumstances from 2002 study
Berrenda Creek	Still Ineligible	No Change in Circumstances from 2002 study
Big Dry Creek	Still Ineligible	No Change in Circumstances from 2002 study
Black Canyon	Still Ineligible	No Change in Circumstances from 2002 study
Canyon Creek	Still Ineligible	No Change in Circumstances from 2002 study
Centerfire Creek	Still Ineligible	No Change in Circumstances from 2002 study

River Name	Eligibility Determination	Rationale/Notes
Cherry Creek	Still Ineligible	No Change in Circumstances from 2002 study
Chloride Creek	Still Ineligible	No Change in Circumstances from 2002 study
Clear Creek	Still Ineligible	No Change in Circumstances from 2002 study
Coal Creek	Still Ineligible	No Change in Circumstances from 2002 study
Copperas Creek	Still Ineligible	No Change in Circumstances from 2002 study
Deep Creek	Still Ineligible	No Change in Circumstances from 2002 study
Demetrio Creek	Still Ineligible	No Change in Circumstances from 2002 study
Dillman Creek	Still Ineligible	No Change in Circumstances from 2002 study
Dry Creek	Still Ineligible	No Change in Circumstances from 2002 study
Dry Blue River	Still Ineligible	No Change in Circumstances from 2002 study
Dry Diamond Creek	Still Ineligible	No Change in Circumstances from 2002 study
East Canyon	Still Ineligible	No Change in Circumstances from 2002 study
East Diamond Creek	Still Ineligible	No Change in Circumstances from 2002 study
East Fork Centerfire Creek	Still Ineligible	No Change in Circumstances from 2002 study
East Fork Gila River	Still Ineligible	No Change in Circumstances from 2002 study
East Fork Mimbres River (McKnight Creek)	Still Ineligible	No Change in Circumstances from 2002 study
Frieborn Canyon	Still Ineligible	No Change in Circumstances from 2002 study
Gallinas Canyon	Still Ineligible	No Change in Circumstances from 2002 study
Gilita Creek	Still Ineligible	No Change in Circumstances from 2002 study
Hoyt Creek	Still Ineligible	No Change in Circumstances from 2002 study
Indian Creek	Still Ineligible	No Change in Circumstances from 2002 study
Langstroth Canyon	Still Ineligible	No Change in Circumstances from 2002 study
Largo Creek	Still Ineligible	No Change in Circumstances from 2002 study
Little Cherry Creek	Still Ineligible	No Change in Circumstances from 2002 study
Little Creek	Still Ineligible	No Change in Circumstances from 2002 study
Little Deep Creek	Still Ineligible	No Change in Circumstances from 2002 study
Little Dry Creek	Still Ineligible	No Change in Circumstances from 2002 study
Manzanita Creek	Still Ineligible	No Change in Circumstances from 2002 study
McKenna Creek	Still Ineligible	No Change in Circumstances from 2002 study
Meadow Creek	Still Ineligible	No Change in Circumstances from 2002 study
Middle Percha Creek	Still Ineligible	No Change in Circumstances from 2002 study
Mill Creek	Still Ineligible	No Change in Circumstances from 2002 study
Mimbres River	Still Ineligible	No Change in Circumstances from 2002 study
Mogollon Creek	Still Ineligible	No Change in Circumstances from 2002 study
Negrito Creek	Still Ineligible	No Change in Circumstances from 2002 study
North Fork Negrito Creek	Still Ineligible	No Change in Circumstances from 2002 study
North Fork Walnut Creek	Still Ineligible	No Change in Circumstances from 2002 study
North Percha Creek	Still Ineligible	No Change in Circumstances from 2002 study
Pace Creek	Still Ineligible	No Change in Circumstances from 2002 study
Poverty Creek	Still Ineligible	No Change in Circumstances from 2002 study
Pueblo Creek	Still Ineligible	No Change in Circumstances from 2002 study

River Name	Eligibility Determination	Rationale/Notes
Rain Creek	Still Ineligible	No Change in Circumstances from 2002 study
Sacaton Creek	Still Ineligible	No Change in Circumstances from 2002 study
Sawmill Canyon	Still Ineligible	No Change in Circumstances from 2002 study
Sheep Corral Canyon	Still Ineligible	No Change in Circumstances from 2002 study
South Fork Cuchillo Negro Creek	Still Ineligible	No Change in Circumstances from 2002 study
South Fork Mimbres River	Still Ineligible	No Change in Circumstances from 2002 study
South Fork Mogollon Creek	Still Ineligible	No Change in Circumstances from 2002 study
South Fork Negrito Creek	Still Ineligible	No Change in Circumstances from 2002 study
South Fork Whitewater Creek	Still Ineligible	No Change in Circumstances from 2002 study
Sapillo Creek	Still Ineligible	No Change in Circumstances from 2002 study
South Percha Creek	Still Ineligible	No Change in Circumstances from 2002 study
Squaw Creek	Still Ineligible	No Change in Circumstances from 2002 study
Stone Canyon	Still Ineligible	No Change in Circumstances from 2002 study
Sycamore Creek	Still Ineligible	No Change in Circumstances from 2002 study
Taylor Creek	Still Ineligible	No Change in Circumstances from 2002 study
Tierra Blanca Creek	Still Ineligible	No Change in Circumstances from 2002 study
Trout Creek	Still Ineligible	No Change in Circumstances from 2002 study
Trout Creek	Still Ineligible	No Change in Circumstances from 2002 study
Tularosa River	Still Ineligible	No Change in Circumstances from 2002 study
Turkey Creek	Still Ineligible	No Change in Circumstances from 2002 study
West Fork Centerfire Creek	Still Ineligible	No Change in Circumstances from 2002 study
West Fork Mogollon Creek	Still Ineligible	No Change in Circumstances from 2002 study
West Fork Pueblo Creek	Still Ineligible	No Change in Circumstances from 2002 study
White Creek	Still Ineligible	No Change in Circumstances from 2002 study

Table 80. Plan revision eligibility study results for rivers not evaluated in the 2002 study, but are named on a standard U. S. Geological Survey 7.5 minute USGS quadrangle map

River Name	Eligibility Determination	Rationale/Notes
Wilderness Run of the Gila River	Eligible	Was not included in the Gila NF 2002 eligibility study, although it was included in the 1982 NPS Nationwide Rivers Inventory. Found eligible by the ID Team in current analysis for Geologic, Scenery, Recreation, Heritage, and Wildlife ORVs
Middle Box of the Gila River	Eligible	Was not included in the Gila NF 2002 eligibility study, although it was included in the 1982 NPS Nationwide Rivers Inventory. Found eligible by the ID Team in current analysis for Wildlife, Scenery, Recreation, Fisheries, and Heritage ORVs
Lower Box of the San Francisco River	Eligible	Was not included in the Gila NF 2002 eligibility study, although it was included in the 1982 NPS Nationwide Rivers Inventory. Found eligible by the ID Team in current analysis for Scenery, Recreation, and Wildlife ORVs
Upper Box of the San Francisco River	Eligible	Was not included in the Gila NF 2002 eligibility study, although it was included in the 1982 NPS Nationwide Rivers Inventory. Found eligible by the ID Team in current analysis for Scenery and Recreation ORVs
Allie Canyon	Not Eligible	No outstandingly remarkable values identified.
Ansones Creek	Not Eligible	No outstandingly remarkable values identified.
Antelope Creek	Not Eligible	No outstandingly remarkable values identified.
Apache Creek	Not Eligible	No outstandingly remarkable values identified.
Baily Creek	Not Eligible	No outstandingly remarkable values identified.
Bear Canyon	Not Eligible	No outstandingly remarkable values identified.
Bear Canyon #2	Not Eligible	No outstandingly remarkable values identified.
Bear Canyon #3	Not Eligible	No outstandingly remarkable values identified.
Bear Creek	Not Eligible	No outstandingly remarkable values identified.
Bear Creek	Not Eligible	No outstandingly remarkable values identified.
Beartooth Creek	Not Eligible	No outstandingly remarkable values identified.
Bearwallow Creek	Not Eligible	No outstandingly remarkable values identified.
Beaver Creek	Not Eligible	No outstandingly remarkable values identified.
Blue Creek	Not Eligible	No outstandingly remarkable values identified.
Blue River	Not Eligible	No outstandingly remarkable values identified.
Bonner Canyon	Not Eligible	No outstandingly remarkable values identified.
Burro Cienega	Not Eligible	No outstandingly remarkable values identified.
Byers Run	Not Eligible	No outstandingly remarkable values identified.
Cameron Creek	Not Eligible	No outstandingly remarkable values identified.
Camp Creek	Not Eligible	No outstandingly remarkable values identified.
Campbell Blue Creek	Not Eligible	No outstandingly remarkable values identified.

River Name	Eligibility Determination	Rationale/Notes
Canovas Creek	Not Eligible	No outstandingly remarkable values identified.
Carbonate Creek	Not Eligible	No outstandingly remarkable values identified.
Cave Canyon	Not Eligible	No outstandingly remarkable values identified.
Cave Creek	Not Eligible	No outstandingly remarkable values identified.
Centerfire Trib.-Ruyle Place	Not Eligible	No outstandingly remarkable values identified.
Cherry Creek	Not Eligible	No outstandingly remarkable values identified.
Cherry Creek	Not Eligible	No outstandingly remarkable values identified.
Cienega Canyon	Not Eligible	No outstandingly remarkable values identified.
Circle Seven Creek	Not Eligible	No outstandingly remarkable values identified.
Clayton Creek	Not Eligible	No outstandingly remarkable values identified.
Copper Creek	Not Eligible	No outstandingly remarkable values identified.
Corduoy Canyon	Not Eligible	No outstandingly remarkable values identified.
Cottonwood Creek	Not Eligible	No outstandingly remarkable values identified.
Cow Creek	Not Eligible	No outstandingly remarkable values identified.
Coyote Creek	Not Eligible	No outstandingly remarkable values identified.
Davis Canyon	Not Eligible	No outstandingly remarkable values identified.
Devils Creek	Not Eligible	No outstandingly remarkable values identified.
Drumm Canyon	Not Eligible	No outstandingly remarkable values identified.
East Draw	Not Eligible	No outstandingly remarkable values identified.
East Fork Whitewater Creek	Not Eligible	No outstandingly remarkable values identified.
East Stephens Creek	Not Eligible	No outstandingly remarkable values identified.
Escondido Creek	Not Eligible	No outstandingly remarkable values identified.
Foxtail Creek	Not Eligible	No outstandingly remarkable values identified.
Gavilan Arroyo	Not Eligible	No outstandingly remarkable values identified.
Gavilan Creek	Not Eligible	No outstandingly remarkable values identified.
Grande, Arroyo	Not Eligible	No outstandingly remarkable values identified.
Hardcastle Canyon	Not Eligible	No outstandingly remarkable values identified.
Harden Cienega Creek	Not Eligible	No outstandingly remarkable values identified.
Headwater Canyon	Not Eligible	No outstandingly remarkable values identified.
Hells Hole	Not Eligible	No outstandingly remarkable values identified.
Indian Creek	Not Eligible	No outstandingly remarkable values identified.
Indian Creek	Not Eligible	No outstandingly remarkable values identified.
Iron Creek	Not Eligible	No outstandingly remarkable values identified.
Jenkins Creek	Not Eligible	No outstandingly remarkable values identified.
Johnson Canyon	Not Eligible	No outstandingly remarkable values identified.

River Name	Eligibility Determination	Rationale/Notes
Karruth Creek	Not Eligible	No outstandingly remarkable values identified.
Keller Canyon	Not Eligible	No outstandingly remarkable values identified.
Largo Canyon	Not Eligible	No outstandingly remarkable values identified.
Lawson Canyon	Not Eligible	No outstandingly remarkable values identified.
Little Bear Creek	Not Eligible	No outstandingly remarkable values identified.
Little Mineral Creek	Not Eligible	No outstandingly remarkable values identified.
Little Turkey Creek	Not Eligible	No outstandingly remarkable values identified.
Little Turkey Creek	Not Eligible	No outstandingly remarkable values identified.
Little Turkey Creek	Not Eligible	No outstandingly remarkable values identified.
Little Whitewater Creek	Not Eligible	No outstandingly remarkable values identified.
Mangas Creek	Not Eligible	No outstandingly remarkable values identified.
Mangas Creek	Not Eligible	No outstandingly remarkable values identified.
Marshall Creek	Not Eligible	No outstandingly remarkable values identified.
Middle Diamond Creek	Not Eligible	No outstandingly remarkable values identified.
Middle Seco Creek	Not Eligible	No outstandingly remarkable values identified.
Mineral Creek (Northern)	Not Eligible	No outstandingly remarkable values identified.
Mineral Creek (Southern)	Not Eligible	No outstandingly remarkable values identified.
Monument Creek	Not Eligible	No outstandingly remarkable values identified.
Moore Canyon	Not Eligible	No outstandingly remarkable values identified.
Morgan Creek	Not Eligible	No outstandingly remarkable values identified.
Noland Creek	Not Eligible	No outstandingly remarkable values identified.
Noonday Canyon	Not Eligible	No outstandingly remarkable values identified.
North Dry Creek	Not Eligible	No outstandingly remarkable values identified.
North Fork Devils Creek	Not Eligible	No outstandingly remarkable values identified.
North Fork Dry Creek	Not Eligible	No outstandingly remarkable values identified.
North Fork Mineral Creek	Not Eligible	No outstandingly remarkable values identified.
North Fork Palomas Creek	Not Eligible	No outstandingly remarkable values identified.
North Fork Tennessee Creek	Not Eligible	No outstandingly remarkable values identified.
North Prong Circle Seven Creek	Not Eligible	No outstandingly remarkable values identified.
North Seco Creek	Not Eligible	No outstandingly remarkable values identified.
Oak Grove Creek	Not Eligible	No outstandingly remarkable values identified.
Packsaddle Canyon	Not Eligible	No outstandingly remarkable values identified.
Patton Creek	Not Eligible	No outstandingly remarkable values identified.
Pine Canyon	Not Eligible	No outstandingly remarkable values identified.

River Name	Eligibility Determination	Rationale/Notes
Pine Cienega Creek	Not Eligible	No outstandingly remarkable values identified.
Pine Creek	Not Eligible	No outstandingly remarkable values identified.
Prior Creek	Not Eligible	No outstandingly remarkable values identified.
Quaking Aspen Creek	Not Eligible	No outstandingly remarkable values identified.
Rawmeat Creek	Not Eligible	No outstandingly remarkable values identified.
Rico, Arroyo	Not Eligible	No outstandingly remarkable values identified.
Rocker Canyon	Not Eligible	No outstandingly remarkable values identified.
Rocky Canyon	Not Eligible	No outstandingly remarkable values identified.
Romero Creek	Not Eligible	No outstandingly remarkable values identified.
S A Creek	Not Eligible	No outstandingly remarkable values identified.
Saliz Canyon	Not Eligible	No outstandingly remarkable values identified.
Salt Creek	Not Eligible	No outstandingly remarkable values identified.
San Francisco River - Stateline to Bridges	Not Eligible	No outstandingly remarkable values identified.
San Francisco River - Bridges to Head of Ditch	Not Eligible	No outstandingly remarkable values identified.
San Francisco River - Devil's Creek	Not Eligible	No outstandingly remarkable values identified.
San Francisco River - Luna to Upper Frisco Box	Not Eligible	No outstandingly remarkable values identified.
San Francisco River - Reserve	Not Eligible	No outstandingly remarkable values identified.
San Francisco River - US 180 at Salinas to Big Dry	Not Eligible	No outstandingly remarkable values identified.
Sand Creek	Not Eligible	No outstandingly remarkable values identified.
Sandy Wash	Not Eligible	No outstandingly remarkable values identified.
Santa Rita Creek	Not Eligible	No outstandingly remarkable values identified.
Sawmill Creek	Not Eligible	No outstandingly remarkable values identified.
Scales Canyon	Not Eligible	No outstandingly remarkable values identified.
Sheep Creek	Not Eligible	No outstandingly remarkable values identified.
Shelley Canyon	Not Eligible	No outstandingly remarkable values identified.
Sheridan Gulch	Not Eligible	No outstandingly remarkable values identified.
Sids Prong	Not Eligible	No outstandingly remarkable values identified.
Silver Creek	Not Eligible	No outstandingly remarkable values identified.
Skates Canyon	Not Eligible	No outstandingly remarkable values identified.
Slate Creek	Not Eligible	No outstandingly remarkable values identified.
Smith Creek	Not Eligible	No outstandingly remarkable values identified.
Snow Creek	Not Eligible	No outstandingly remarkable values identified.

River Name	Eligibility Determination	Rationale/Notes
South Fork Mineral Creek	Not Eligible	No outstandingly remarkable values identified.
South Fork North Seco Creek	Not Eligible	No outstandingly remarkable values identified.
South Fork Palomas Creek	Not Eligible	No outstandingly remarkable values identified.
South Fork Silver Creek	Not Eligible	No outstandingly remarkable values identified.
South Seco Creek	Not Eligible	No outstandingly remarkable values identified.
Spider Creek	Not Eligible	No outstandingly remarkable values identified.
Spring Branch	Not Eligible	No outstandingly remarkable values identified.
Spud Patch Creek	Not Eligible	No outstandingly remarkable values identified.
Squaw Creek	Not Eligible	No outstandingly remarkable values identified.
Starkweather Canyon	Not Eligible	No outstandingly remarkable values identified.
Stephens Creek	Not Eligible	No outstandingly remarkable values identified.
Stiver Canyon	Not Eligible	No outstandingly remarkable values identified.
Stone Creek	Not Eligible	No outstandingly remarkable values identified.
Stoner Creek	Not Eligible	No outstandingly remarkable values identified.
Taylor Creek	Not Eligible	No outstandingly remarkable values identified.
Tennessee Creek	Not Eligible	No outstandingly remarkable values identified.
Tige Canyon	Not Eligible	No outstandingly remarkable values identified.
Trail Creek	Not Eligible	No outstandingly remarkable values identified.
Trap Corral Canyon	Not Eligible	No outstandingly remarkable values identified.
Turkey Creek	Not Eligible	No outstandingly remarkable values identified.
Turkey Creek	Not Eligible	No outstandingly remarkable values identified.
Turkey Run	Not Eligible	No outstandingly remarkable values identified.
Turkeyfeather Creek	Not Eligible	No outstandingly remarkable values identified.
Twin Sisters Creek	Not Eligible	No outstandingly remarkable values identified.
Upper Cottonwood Canyon	Not Eligible	No outstandingly remarkable values identified.
Walnut Creek	Not Eligible	No outstandingly remarkable values identified.
Walnut Creek	Not Eligible	No outstandingly remarkable values identified.
West Fork Mimbres River	Not Eligible	No outstandingly remarkable values identified.
West Fork Snow Creek	Not Eligible	No outstandingly remarkable values identified.
Whiskey Creek	Not Eligible	No outstandingly remarkable values identified.
Whiskey Creek	Not Eligible	No outstandingly remarkable values identified.
Wilson Creek	Not Eligible	No outstandingly remarkable values identified.

Definitions

Classification. Identification of the class (wild, scenic, or recreational) that appropriately describes an eligible river or river segment, based on the criteria established in section 2(b) of the Wild and Scenic Rivers Act.

Determination. A finding in a study report that a river segment does, or does not, meet the criteria found in this chapter to be eligible; or a finding that an eligible river is or is not suitable for inclusion in the National System.

Eligible River. A river segment that has been evaluated, and found to be free flowing and, in combination with its adjacent land area, possesses one or more outstandingly remarkable values.

Forest Service-identified Study Rivers. Rivers that the Forest Service has identified for study to determine potential inclusion in the National System, as directed under section 5(d)(1) of the Wild and Scenic Rivers Act. These include the inventory of rivers being studied for eligibility, eligible rivers being studied for suitability, and rivers that have been determined to be suitable but are not yet designated.

Legislatively Mandated Study Rivers. Rivers that Congress has identified under section 5(a) of the Wild and Scenic Rivers Act for study to determine their suitability for inclusion in the National System. Legislatively mandated study rivers are considered eligible rivers unless a study determines the river to be ineligible (sec. 83.1). A river determined to be not suitable is no longer considered eligible.

Outstandingly Remarkable Value. A scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar river-related value that is unique, rare, or exemplary feature and is significant when compared with similar values from other rivers at a regional or national scale.

Region of Comparison. The geographic area of consideration for each outstandingly remarkable value that will serve as the basis for meaningful comparative analysis.

River. A flowing body of water or estuary, or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes.

River Corridor. The geographic area generally encompassed within one-quarter mile on either side of a river studied for eligibility or suitability that contains the river and its outstandingly remarkable values.

River Segment. A distinct section of a river; in the context of wild and scenic river planning, refers to a distinct portion of a river that has a beginning, an endpoint, and specific classification. A river may be one segment with a classification or have multiple segments, each with a different classification.

Study Process. The generic term applied to both the process of inventorying rivers to determine if they are eligible for inclusion in the National System or evaluating eligible rivers to determine if they are suitable for inclusion in the National System.

Study Report. The documentation for the inventory and evaluation of wild and scenic river eligibility or suitability.

Study River. See “Forest Service-identified Study River” or “Legislatively-mandated Study River.”

Suitable River. A river segment that a Federal agency has studied and determined to be suitable for inclusion in the National System, but has not been statutorily designated. A river found suitable for inclusion in the National System is a river that the Forest Service will recommend or has recommended for inclusion in the System.

Appendix H. Documentation of the Research Natural Area Evaluation Process

Background

A research natural area (RNA) is a type of special area within the National Forest System designated for their unique or special characteristics (FSM 1905 – Definitions). RNAs are defined as “physical or biological units in which current natural conditions are maintained insofar as possible. These conditions are ordinarily achieved by allowing natural physical and biological processes to prevail without human intervention. Research Natural Areas are principally for non-manipulative research, observation and study (FSM 4063). They are designated to “maintain a wide spectrum of high quality representative areas that represent the major forms of variability found in forest, shrubland, grassland, alpine, and natural situations that have scientific interest and importance that, in combination, form a national network of ecological areas for research education, and maintenance of biological diversity” (FSM 4063.02). Management of each individual RNA must support and promote the objectives and purposes for which it was established and comply with the following standards set forth in FSM 4063.3.

Designated area recommendations are part of the Forest Plan. Therefore, it is appropriate to evaluate conditions and management direction for establishment or disestablishment of RNAs. Any proposals for designation of new, or previously proposed RNAs may be made during revision at the forest supervisor’s discretion. Formal RNA establishment would have to be handled in a subsequent site-specific establishment report and NEPA process.

The Southwestern Region’s RNA Work Group’s Research Natural Area Process for Forest Plan Revision under the 2012 Planning Rule Provisions (2015) was used by an interdisciplinary team of Gila National Forest staff to complete this evaluation. The forest supervisor reviewed the evaluation to develop his proposal(s) to the regional forester. The regional forester is the responsible official for coordinating with a research station director on final RNA designation (FSM 4063.04b).

Regional RNA Inventory and Needs Assessment

A region-wide RNA inventory identified all existing designated and proposed RNAs. This information was then used to evaluate what ecosystem types were underrepresented among the region’s currently established RNAs and assigned a “need” rating between 1 and 3. A rating of “1” reflects the least degree of need according to the regional needs assessment and corresponds to ecosystem types that is well-represented. A rating of “2” indicates moderate representation, but additional representation across the region may be warranted. A rating of “3” reflects little to no representation in the existing RNAs. In this assessment, need ratings of 2 and 3 may be considered for RNA recommendations. Table 81 displays the Gila National Forest’s Ecological Response Units (ERUs) with need ratings of 2 and 3.

Table 81. Gila National Forest ERUs and riparian ERU groups that may be considered for RNA recommendation

ERU Name	RNA Need Rating
Ponderosa Pine Forest	2
PJ Evergreen Shrub	2
PJ Woodland	2
Mountain Mahogany Mixed Shrubland	3
Juniper Grass Woodland	3
Semidesert Grassland	2
Wetland (Cieñega) Riparian ERU Group	2
Montane-Conifer Willow Group	2

Summary of Evaluation Process

This summary is intended to provide an overview of the regionally established process to evaluate RNAs. First, existing designated RNAs and their associated 1986 plan direction are evaluated against defined criteria to determine if conditions have changed such that the RNA is no longer able to serve the function for which it was originally created, or if there is a need for new, additional, or corrective management direction (FSM 4063.03).

The evaluation criteria for designated RNAs are:

1. Does current plan direction protect the RNA from human-caused environmental disruptions?
2. What are the threats that may affect the RNA?
3. Does the RNA continue to be managed in a manner that maintains current natural conditions to the extent possible?
4. Are ecological processes being allowed to prevail without human intervention? If not, is deliberate manipulation consistent with maintaining the unique feature(s) for which the RNA was established to protect?
5. What is the current status of mineral entry in the RNA?

Next, existing and new proposed RNAs are evaluated against a second set of criteria to determine if they qualify for proposal. The evaluation criteria for proposed RNAs are:

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?
2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?
3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?
4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?
5. Does the area serve as a control for comparing results from manipulative research?

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?
7. Does the area show little to no evidence of major disturbances by humans? (Have activities affected the area beyond its ability to recover? Is there evidence of timber cutting in the past 50 years?)
8. Does the area reflect its original, near-pristine condition as closely as possible?
9. Does the area represent the best available, qualified area?

Finally, the evaluation is reviewed by the forest supervisor who determines what proposals to present to the regional forester.

Candidate RNAs

Candidate RNAs include one existing designated RNA (Gila River RNA), four existing proposed RNAs and seven areas identified in the current Forest plan for evaluation. The existing proposed RNAs include Turkey Creek, Rabbit Trap, Agua Fria and Largo Mesa. The seven areas identified in the current Forest plan for evaluation are Mule Creek, Lower San Francisco, Mineral Creek, Tillie Hall, Rocky Canyon, Eagle Peak and the Piños Altos Mountains.

No public comment suggesting areas for RNA designation have been received. No further recommendations by Forest staff have been brought forward, although some have voiced support for Mule Creek and the Lower San Francisco.

Evaluation

This following subsections contain the evaluations for all candidate RNAs previously identified.

Gila River Designated RNA

The Gila River RNA was the first RNA in the State of New Mexico and was established in 1972. It consists of 393 acres near the Gila River Bird Area in the northern Burro Mountains on the Silver City District. It is a high quality example of Cottonwood Group ERUs, which is well-represented within the Southwestern Region's RNAs. The primary purpose of its establishment was to protect bird habitat. As of 2015, the greater Gila River bird area supports 231 species of birds representing 43 percent of the verified bird species documented in New Mexico (Shook 2015).

1. Does current plan direction protect the RNA from human-caused environmental disruptions?

Yes. Current plan direction includes the following provisions to protect all RNAs.

- ◆ Protect RNA values and manage for scientific and baseline studies
- ◆ Visual Quality Objective of Preservation
- ◆ Manage dispersed recreation at a low intensity reduced service level
- ◆ ORV use prohibited
- ◆ Manage Recreation Opportunity Spectrum (ROS) according to existing inventory
- ◆ Post all boundaries outside wilderness
- ◆ No new range developments will be authorized which might change the existing character of the area

- ◆ No permits for fuelwood or other wood products will be issued
- ◆ Work toward withdrawing from mineral entry
- ◆ Unplanned ignition will receive appropriate suppression action
- ◆ Wildfires burning outside the area, which threatens the area will be suppressed

2. What are the threats that may affect the RNA?

Threats to this RNA include the proposed Gila River diversion, livestock use, increased recreational use and OHV and ATV use. The proposed Gila River diversion has the potential to alter the hydrologic processes that sustain riparian and aquatic systems (Gori et al. 2014). Excess livestock and associated use have been documented, but issues have been resolved relatively quickly and impacts on natural processes have been minimal. The area has grown in popularity with hikers, birders and other recreationists since its designation. Although recreational use is not excessive, it may be inconsistent with provisions in the establishment record to limit human entry to the west side of the river. OHV and ATV use remains a threat as potential access points exist, but is not known to have occurred.

Noxious plant species are another threat. Populations of noxious plants have been documented upstream. Similarly, there are non-native fish present in the Gila River, both upstream and downstream. Non-native birds such as starling, Eurasian collared-doves and house sparrows likely use this area.

3. Does the RNA continue to be managed in a manner that maintains current natural conditions to the extent possible?

Yes. Under current management, natural ecological processes are the dominant influences on the riparian system.

4. Are ecological processes being allowed to prevail without human intervention? If not, is deliberate manipulation consistent with maintaining the unique feature(s) for which the RNA was established to protect?

Yes. No deliberate manipulation is occurring and natural processes are the dominant influences on the riparian system.

5. What is the current status of mineral entry in the RNA?

The RNA is not currently withdrawn from mineral entry.

Existing Proposed RNAs

Turkey Creek

The proposed Turkey Creek RNA was identified during the last planning phase. There is some uncertainty associated with its precise location given description conflicts between the original proposal and what is currently in the Forest's geospatial data. It consists of 1,200 acres^m within the Gila Wilderness near its southwestern boundary, south of the Turkey Creek hot springs. The area was

^m According to work supporting the original proposal, it was calculated to be 1,337 acres. However, when digitizing the proposed RNA boundary from the original hardcopy maps using 200-ft contours as a guide, it came out at 1,200 acres.

originally proposed for its geologic features and to protect riparian and aquatic habitat associated with the Turkey Creek and Skeleton Canyon drainages. Intentions for the establishment record were to exclude the area from livestock grazing and withdraw it from mineral entry. There is some documentation indicating it contains an old mining claim.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The RNA contains Mountain Mahogany Mixed Shrubland (need rank 3), Ponderosa Pine-Evergreen Oak and Mixed Conifer-Frequent Fire (need rank 1), as well as PJ Woodland (need rank 2). It also includes portions of the Turkey Creek and Skeleton Canyon drainages. These are perennial streams supporting outstanding examples of Cottonwood Group riparian vegetation (Sycamore-Fremont Cottonwood and Narrowleaf Cottonwood/Shrub ERUs), which is well-represented in the Southwestern Region's network of RNAs.

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes. This area would contribute to the regional and national network and fills two identified needs (see previous).

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the majority of species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. The area contains proposed critical habitat for narrow-headed garter snakes and that species has been documented in the vicinity. It also supports the roundtail chub (*Gila chub*), Chiricahua leopard frog, and Mexican spotted owl. No unique, rare or endemic plant species are documented, but local knowledge indicates Chihuahua pine (*Pinus chihuahuana* Engelman) is present in the vicinity. This pine species is indicative of Madrean influence. The area has not had a rigorous botanical inventory.

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes. Due to its topography and remoteness, human influence has been minimal. It would serve as a baseline or reference area for any of these purposes.

5. Does the area serve as a control for comparing results from manipulative research?

Yes. Due to its topography and remoteness, human influence has been minimal. It would serve as a control for a variety of purposes.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. However, there may be potential for impacts associated with the proposed Gila River diversion (Gori et al. 2014).

7. Does the area show little to no evidence of major disturbances by humans?

Yes. See previous.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Yes. See previous.

Historically, livestock use in the uplands was probably light due to topographic influence on animal behavior. At present, there is no permitted livestock use as this area lies within the old Glenn allotment which was last permitted to the New Mexico Game and Fish Department and has not been grazed for many decades. However, self-sustaining populations of unauthorized, unbranded livestock are known to occupy areas in the Turkey Creek drainage upstream of the proposed RNA. Given several miles and a series of waterfalls that serve as barriers to livestock movement between where livestock impacts are known and the proposed RNA, impacts are unlikely. However, whether or not those impacts are occurring in the proposed RNA would require field validation. The intent expressed in the draft establishment record, which was never finalized, was to exclude the area from livestock grazing. Livestock impacts, should they be evident, are not irretrievable. Infrastructure is limited to a non-motorized trail, which is located primarily in the drainage bottom.

9. Does the area represent the best available, qualified area?

Yes. This area is a high quality candidate for RNA status. Current plan direction related to fire is not necessarily consistent with dominance and maintenance of the natural ecological processes that would occur in the upland systems associated with the proposed RNA boundaries.

Rabbit Trap

The proposed Rabbit Trap RNA was identified during the last planning phase. It consists of 300 acres in the northeastern Burro Mountains near Saddle Rock. The area has been excluded from livestock grazing since the 1940s. It is adjacent to a historic mining claim. It was originally proposed during the last planning cycle for as an example of ecological status and watershed recovery in a landscape that was historically overgrazed and continues to experience grazing impacts.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The proposed RNA is primarily mapped as Mountain Mahogany Mixed Shrubland (need ranking 3), with a component of Desert Willow in the major drainage along the southeastern side of the area. However, it is not aligned with the central concept of Mountain Mahogany Mixed Shrubland as it contains relatively large areas more characteristic of Semidesert Grassland (need ranking 3). There are no aquatic systems associated with Desert Willow.

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes. This area would contribute to national and regional networks, filling two identified needs.

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. It also supports Davidson’s cliff carrot, which is on the draft Species of Conservation Concern list.

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes. While it may not serve as an ecological reference site, it has and could continue to serve as a baseline for ecological status and watershed recovery from grazing impacts, as well as climate change.

5. Does the area serve as a control for comparing results from manipulative research?

Yes. It has and could continue to serve as a control for range management. It could also be useful as a control for research involving climate change and range management.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. The area is large enough to maintain ecological processes and the qualities for which it was proposed. It has been excluded from livestock grazing since the 1940’s.

7. Does the area show little to no evidence of major disturbances by humans?

No. Evidence of gully erosion resulting from historical grazing impacts is still visible, although it is not active and gullies have been healing for decades.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Yes. Given the history of livestock grazing in this landscape, this area represents the closest to original/pristine condition as possible.

9. Does the area represent the best available, qualified area?

Yes. See previous. However, current direction related to fire is not consistent with dominance and maintenance of the natural ecological processes that would occur in these systems.

Largo Mesa

The proposed Largo Mesa RNA is located on Largo Mesa roughly 2 miles northwest of Castle Rock on the Quemado Ranger District. It is approximately 178 acres and was originally proposed in the last planning cycle as a response to an identified need in the region for piñon-juniper woodland study sites.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The area contains PJ Woodland (need rank 2) and PJ Grass (no need rank). However, given the area lacks the soil or topographic diversity to support both a closed-canopy, infrequent fire woodland (PJ Woodland) and an open-canopy, frequent fire woodland (PJ Grass) in such close

proximity. The area most likely represents a departure from the reference condition. Specifically, tree density increases resulting from historic overgrazing and fire suppression, maintained by current livestock grazing. The area does not contain aquatic habitat.

- 2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?**

No. This area is not a high quality representative area for either PJ Woodland or PJ Grass due to the reasons stated above.

- 3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?**

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. However, it is not known to support any at-risk species or rare or endemic plants and there is no evidence to suggest it supports genetic diversity to any degree greater than the surrounding landscape. A rigorous botanical inventory specific to this area has not been conducted.

- 4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?**

No. The area represents a departure from the reference condition. Ecological processes and disturbance regimes have been altered. Livestock grazing is active and expected to continue.

- 5. Does the area serve as a control for comparing results from manipulative research?**

Yes. It could serve as a control for manipulative research related to mechanical vegetation management and climate change. No mechanical treatments have occurred on the Mesa, and none are currently planned.

- 6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?**

Yes. It is of sufficient size. It is larger than some designated RNAs being managed successfully (Rabbit Trap). However, conditions are already modified. See previous.

- 7. Does the area show little to no evidence of major disturbances by humans?**

No. While the area could recover from grazing and fire suppression impacts, deliberate and intensive manipulation of the existing vegetation either with mechanical treatments or high severity fire would be required for it to represent its “original” condition.

- 8. Does the area reflect its original, near-pristine condition as closely as possible?**

No. See previous.

- 9. Does the area represent the best available, qualified area?**

No. See previous.

Agua Fria

The proposed Agua Fria RNA is located on Agua Fria Mountain approximately 1.5 miles southwest of Castle Rock on the Quemado Ranger District. It contains approximately 266 acres on the northern summit and steep upper slopes of the mountain. It was originally proposed in the last planning cycle but documentation on the features or qualities it was proposed for were not found in the records. For this evaluation, it is assumed this area was identified for reasons similar to Largo Mesa.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The proposed RNA contains areas mapped as PJ Woodland (need rank 2) and Colorado Plateau-Great Basin Grassland (no need rank). It does not contain any aquatic habitat.

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes. Given the steepness of the sideslopes on which PJ Woodland occurs, the area represents high quality representation of that ERU; management activities have been restricted by the terrain. However, the grassland component is not high quality. Woody species encroachment is evident, representing a departure from the reference condition. Tree density increases are the result of historic overgrazing and fire suppression. Disruption of natural ecological processes and existing conditions is maintained by current livestock grazing.

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. However, it is not known to support any at-risk species or rare or endemic plants and there is no evidence to suggest it supports genetic diversity to any degree greater than the surrounding landscape. A rigorous botanical inventory specific to this area has not been conducted.

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes. In terms of the PJ Woodland component, it could serve as a baseline or reference area. In terms of the grassland, it is not well-suited to that purpose.

5. Does the area serve as a control for comparing results from manipulative research?

No. The steepness of the slopes on which the PJ Woodland component is present is subject to different types and/or rates of background geomorphic processes than would typically be present in areas targeted by manipulative research. Manipulative research in woodland systems typically targets slopes less than 40 percent rise. It also typically targets areas of departure in open canopy, frequent fire woodlands. Not closed canopy, infrequent fire woodlands such as this. It is unlikely to serve as a control. In terms of the grassland component, it could serve as a control for manipulative research related to mechanical vegetation management and climate change. No mechanical treatments have occurred in the grassland, and none are currently

planned as access is somewhat limited. However, there is no particular reason this area would be selected for this type of research over any other similar areas across the Forest.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. It is of sufficient size. It is larger than some designated RNAs being managed successfully. The PJ Woodland processes are essentially unmodified, but those in the grassland component are already modified.

7. Does the area show little to no evidence of major disturbances by humans?

Yes. Particularly on the PJ Woodland slopes. While the grassland component could recover from grazing and fire suppression impacts, deliberate and intensive manipulation of the existing vegetation either with mechanical treatments or high severity fire would be required for it to represent its “original” condition.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Yes and No. Yes for the PJ Woodland component due to reasons in the answers to the preceding question. No for the grassland component. Near-pristine conditions in Colorado Plateau-Great Basin grasslands, both within this area and across the regional distribution of this ERU are difficult to find.

9. Does the area represent the best available, qualified area?

No. There are likely areas of similar or better quality to represent PJ Woodland in the RNA network and on the Forest. Regardless, the terrain may present difficulties to comply with current plan direction (1986) that RNAs be fenced if it were to move forward as a proposed RNA.

Plan Recommended Areas of Evaluation

Lower San Francisco River

The Lower San Francisco River area recommended for RNA evaluation is currently designated as a wilderness study area and is part of the Lower San Francisco Inventoried Roadless Area. The features and qualities for which evaluation was recommended are tied to riparian and aquatic habitat. This evaluation includes the entire wilderness study area.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The riparian is mapped as part of the Cottonwood Group, which is well-represented in the regional RNA network. The canyon slopes contain Mountain Mahogany Mixed Shrubland and Juniper Grass Woodland (both need rank 3).

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes. This area is a high quality, representative area of the region’s Cottonwood Group and associated aquatic habitat. The surrounding uplands contain high quality representation of Mountain Mahogany Mixed Shrubland and Juniper Grass Woodland that have experienced little human influence due to the terrain.

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of diversity. The area contains proposed critical habitat for narrow-headed gartersnake, loach minnow and spike dace. However, nonnative fish species dominate the system and native fish species have been severely reduced to the point of extirpation for some. Nonnative bullfrogs and saltcedar are also present. A rigorous botanical survey has not been conducted.

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes. This area could serve as a baseline or reference area for long-term studies related to ecological processes and climate change as human influence has been limited.

5. Does the area serve as a control for comparing results from manipulative research?

Yes and No. The Juniper Grass and Mountain Mahogany Mixed Shrubland component would likely not be good controls given that manipulative research typically requires more accessible terrain where the types and/or rates of background geomorphic processes are different. The riparian would be better suited as a control.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. The area is large enough. It is larger than some designated RNAs being managed successfully. However, similar to the designated Gila River RNA, there is potential for diversions along the San Francisco River, proposed as part of the Arizona Water Settlement Act to impact natural processes.

7. Does the area show little to no evidence of major disturbances by humans?

Yes. Aside from recoverable evidence of illegal OHV and ATV use in the riparian, there is no evidence of human influence due to the terrain. The river has been excluded from livestock grazing since the mid-to late 1990s. Although livestock grazing is active in the adjacent uplands, impacts are generally light due to topographic influence on animal behavior. Work to remove non-native species is ongoing, including herbicide applications for saltcedar.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Yes and No. The uplands reflect “original,” near-pristine conditions as human influence has been limited by terrain. Again, there is evidence of ongoing illegal OHV and ATV use in the stream corridor, but the system could recover if this issue is resolved.

9. Does the area represent the best available, qualified area?

No for the riparian and aquatic ecosystems. **Yes** for the upland ecosystems. The Mountain Mahogany Mixed Shrubland and Juniper Grass Woodlands do represent best available, qualified areas given human influence is limited by the terrain. Current plan direction related to fire in the uplands may not be consistent with allowing natural ecological processes to prevail.

Mule Creek

The Mule Creek area recommended for evaluation as part of the last planning cycle is located immediately adjacent the Lower San Francisco River candidate RNA at the confluence of the San Francisco River and Mule Creek. It is not part of the wilderness study area, but it is part of the Lower San Francisco Inventoried Roadless Area. The features and qualities for which evaluation was recommended are tied to riparian and aquatic habitat. This evaluation includes the area draining into Mule Creek from the proximate Forest boundary, northwest to the confluence with the San Francisco River.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The riparian is predominantly mapped as Sycamore-Fremont Cottonwood (Cottonwood Group need rank 1), but there is a strong alder component which would indicate the Montane Conifer-Willow Group (need rank 2). The uplands contain Mountain Mahogany Mixed Shrubland (need rank 3), Juniper Grass (need rank 3) and small areas of PJ Woodland (need rank 2).

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes. Although well-represented in the regional RNA network, the Cottonwood Group riparian is a high quality representation, as are the upland ERUs.

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. The area is currently proposed critical habitat for the Northern Mexican garter snake, supports Gila chub and provides important habitat for other terrestrial, aquatic and semi-aquatic species. Nonnative fishes are present, but other nonnative species have not been documented. A rigorous botanical inventory has not been conducted.

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes. This area could serve as a baseline or reference area for long-term studies related to ecological processes and climate change as human influence has been limited. Current plan

direction related to fire in the uplands may not be consistent with allowing natural ecological processes to prevail.

5. Does the area serve as a control for comparing results from manipulative research?

Yes and No. The Juniper Grass and Mountain Mahogany Mixed Shrubland component would likely not be good controls given that manipulative research typically requires more accessible terrain where the types and/or rates of background geomorphic processes are different. The riparian corridor has more potential to act as a control.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. It is large enough and ecological processes are intact due to terrain limited human influence. It is larger than some designated RNAs being managed successfully.

7. Does the area show little to no evidence of major disturbances by humans?

Yes. Terrain limits human influence. Although livestock grazing is active in the area, impacts are generally light due to topographic influence on animal behavior.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Yes. See previous.

9. Does the area represent the best available, qualified area?

Yes. The Cottonwood Group is well-represented in the regional RNA network, but this area is a high quality representation. The Mountain Mahogany Mixed Shrubland and Juniper Grass Woodlands do represent best available, qualified areas given human influence is limited by the terrain. PJ Woodland is present in such few, small areas that it would not likely make a significant contribution to that identified need. Current plan direction related to fire in the uplands may not be consistent with allowing natural ecological processes to prevail.

Tillie Hall

The Tillie Hall area is located in the Hell Hole Wilderness Study Area and Inventoried Roadless Area. It was recommended for RNA evaluation in the last planning cycle for the Madrean influence on the local floristics, which includes three varieties of piñon pine: two-needle piñon, Mexican piñon and Arizona piñon.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The area contains areas mapped as PJ Woodland (need rank 2), Ponderosa Pine Forest (need rank 2) as well as the Madrean Piñon-Oak Woodland and PJ Grass Woodland (no need ranks) and the Madrean influenced-Ponderosa Pine-Evergreen Oak (need rank 1). There is no riparian habitat mapped in the area.

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or

importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes. The area contains 2 vegetation types with identified needs and may be of special interest due to Madrean influenced ecological variability and potential deviation from central tendencies of current ecological classifications. This area is a broad-scale ecotone and may therefore be of interest for climate change research.

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. Given that the area represents part of the northern limits of Mexican and Arizona piñon pine, there may be stronger argument that this area contributes significantly to the genetic diversity of these species. The area contains proposed critical habitat for Northern Mexican garter snake along the northern portion of the area in Mule Creek. It also contains portions of two Northern Goshawk Post Fledgling Areas (PFAs).

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes. This area does not represent the central tendencies of current ecological classifications and may provide opportunities to expand the scientific understanding of biophysical settings and reference conditions. It would be a good baseline for vegetation changes related to climate change as ecotones the body of science suggests changes are anticipated to occur sooner in such areas.

5. Does the area serve as a control for comparing results from manipulative research?

No. This area is generally not representative of the landscape settings and types and/or rates of geomorphic processes that manipulative research typically targets. While it is large enough to provide for paired watershed studies, its status as an inventoried roadless area does not make such research practical.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. It is larger than some designated RNAs being managed successfully.

7. Does the area show little to no evidence of major disturbances by humans?

Yes. It is located in a wilderness study area and inventoried roadless area. It qualified for these designations because terrain limits human influence. Livestock grazing is active and expected to continue. According to the 2016 Watershed Condition Classification range condition is generally fair with some areas in good condition. A prevalence of illegal firewood gathering and an extensive network of user-created routes are factors on the east side of the area, but Tillie Hall Canyon itself is located in the southwestern extent of the area.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Yes. Although it does not fit the central tendency of the current ecological classification, Madrean Piñon-Oak Woodland, which comprises a large portion of the area, has a low departure from the reference condition according to the plan revision assessment. See also previous.

9. Does the area represent the best available, qualified area?

Yes. The area fills several identified needs and might add to the range of biophysical settings for research in Madrean Piñon-Oak Woodland. Human influence is limited by terrain, although livestock grazing has and is expected to continue. However, current direction related to fire is not consistent with dominance and maintenance of the natural ecological processes that would occur in these systems.

Mineral Creek

The plan recommendation to evaluate the Mineral Creek “area” does not specify what features or qualities might contribute to the RNA network. For this evaluation, the area considered includes the portions of the Mineral Creek watershed contained within Inventoried Roadless Areas because it has experienced less human influence than the remainder of the watershed and there are fewer potential multiple-use conflicts.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. It contains areas mapped as Ponderosa Pine Forest (need rank 2), Mountain Mahogany Mixed Shrubland (need rank 3), Montane-Conifer Willow Group (need rank 2), specifically the Arizona Alder-Willow ERU. It also contains Cottonwood Group riparian ERUs (Narrowleaf Cottonwood/Shrub), Mixed Conifer-Frequent Fire and Mixed Conifer with Aspen which are well represented in the RNA network.

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes. Quality might be higher if seral state diversity was more representative of reference conditions, although there may be greater topographic influences on fire regimes than is reflected by the research locations the reference conditions are based on. On the other hand, there is substantial scientific interest in fire and climate facilitated vegetation changes.

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. The area is occupied critical habitat for Mexican spotted owl and contains over a dozen Protected Activity Centers. Mineral Creek is occupied recovery habitat for Gila trout. A rigorous botanical inventory has not been conducted, however several rare/or endemic plant species on the draft Species of Conservation Concern list have been

documented. These species include Gooding's onion, Mogollon Mountain lousewort and Mogollon death camas.

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes. The area could serve as a post-fire baseline or reference condition for long-term research related to all ecological processes and climate change.

5. Does the area serve as a control for comparing results from manipulative research?

Yes. It could serve as a control for research related to reforestation and climate change research.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. The area is larger than some designated RNAs that are managed successfully.

7. Does the area show little to no evidence of major disturbances by humans?

Yes. Due to the terrain, this area has never been logged. Livestock grazing impacts are localized to riparian areas and are recoverable.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Maybe. If research is looking for near-pristine late-seral vegetation conditions, the answer is no. If research is looking for near-pristine early seral vegetation condition, the answer is maybe. Most of the area burned at high severity in the 2012 Whitewater Baldy Fire, and was aerially seeded and/or mulched due to downstream values-at-risk. Certified weed-free seed and agricultural straw were used.

9. Does the area represent the best available, qualified area?

Maybe. The area is qualified although there are plenty of other areas on the Forest that could serve similar research purposes just as well. Most of these other areas are located within designated wilderness, which poses some restrictions on instrumentation. This area may have an advantage over wilderness locations due to the adjacent access along the Hwy 159 and the Bursum road and fewer restrictions on research instrumentation. However, current direction related to fire is not necessarily consistent with dominance and maintenance of the natural ecological processes that would occur in these systems.

Rocky Canyon

Rocky Canyon is located almost entirely within designated wilderness. The area was recommended for RNA evaluation during the last planning cycle based on the Madrean influence and the presence of Arizona (aka Apache) pine. This evaluation considered the area northwest of Forest Road 4079C, west of Forest Road 150, northeast of New Mexico Highway 35 and south of the Mimbres/Powderhorn/Sapillo and Diamond Bar allotment boundary fence.

- 1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?**

Somewhat. The area is dominated by the Madrean-influenced Ponderosa Pine-Evergreen Oak (need rank 1), but also contains some Ponderosa Pine Forest (need rank 1), PJ Woodland (need rank 2) and PJ Grass Woodland (no need rank).

- 2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?**

Yes. Although the dominant ERU has a need ranking of 1, the southern portion of the Gila National Forest represents part of the northern most limits of Arizona pine (aka Apache pine). The distribution of this species is not restricted to this area, but there is a higher greater concentration of Arizona pine than most other places. This area is a broad-scale ecotone and may therefore be of interest for climate change research.

- 3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?**

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. Given that the area represents part of the northern limits of Arizona pine, there may be stronger argument that this area contributes significantly to the genetic diversity of this species. A rigorous botanical inventory has not been conducted. The area contains occupied critical habitat for Mexican spotted owl and Rocky Canyon contains populations of the Rio Grande sucker. The Rio Grande Sucker is on the Regional Forester's Sensitive Species list and the Region is negotiating a conservation agreement with multiple agencies and states for this species. No nonnative fish species are present in Rocky Canyon.

- 4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?**

Yes. Due to its location in designated wilderness, human influence has been limited. It is part of the Mimbres/Powderhorn/Sapillo allotment, which has received light to no use for almost two decades. Range conditions are generally good.

- 5. Does the area serve as a control for comparing results from manipulative research?**

Yes. Portions of this watershed contain areas where the types and rates of geomorphic processes are similar to those areas typically targeted by manipulative research.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. The area is larger than some designated RNAs that have been managed successfully.

7. Does the area show little to no evidence of major disturbances by humans?

Yes. Other than a relatively small area where Forest Road 150 bisects the Gila and Aldo Leopold Wildernesses, no manipulative management has occurred since the area was designated wilderness. The area adjacent the road also contains a low capacity designated campground.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Yes. See previous.

9. Does the area represent the best available, qualified area?

Yes. The area fills an identified need and might add to the range of biophysical settings for research in ponderosa pine types. The presence of the Rio Grande sucker and absence of nonnative fishes adds additional merit to this area. Human influence is limited by wilderness designation, and in some cases by terrain. Livestock use has been light to absent for almost two decades. Pasture division fences may provide opportunities to balance future multiple-use considerations. The North Brannon pasture contains a relatively higher density of pine, although it would not include any of the aquatic values present in the area evaluated. Current direction for RNAs related to fire is not consistent with dominance and maintenance of the natural ecological processes that would occur in these systems.

Piños Altos Mountains

The Piños Altos Mountains are located immediate north of Silver City, New Mexico. The area was recommended for RNA evaluation during the last planning cycle based on the Madrean influence and the presence of Arizona (aka Apache) pine. This evaluation considered the entire mountain range, most of which is an inventoried roadless area. It also contains many private inholdings, although most are relatively small. There is a higher density of Urban Interface in and adjacent the range than there is in the rest of the Forest.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The area contains Mountain Mahogany Mixed Shrubland (need rank 3), PJ Woodland (need rank 2), Juniper Grass (need rank 3) and Ponderosa Pine Forest (need rank 2). It also contains Ponderosa Pine-Evergreen Oak, Mixed Conifer-Frequent Fire (both need rank 1), and PJ Grass (no need rank). It also contains small areas of Cottonwood Group riparian, which are well represented in the regional RNA network.

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes. It fulfills four identified needs (see previous) and may expand representation of biophysical settings for well-represented ERUs.

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. Given that the area represents part of the northern limits of Arizona pine, there may be stronger argument that this area contributes significantly to the genetic diversity of this species. A rigorous botanical inventory has not been conducted, but several rare and/or endemic plant species on the draft Species of Conservation Concern list that have been documented in area. Which species depends on which area of the mountain range. The area also contains several Northern Goshawk Post Fledgling Areas (PFAs), occupied Mexican spotted owl critical habitat and Protected Activity Centers (PACs), and occupied recovery habitat for Gila trout.

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes and No. Depending on the type of research, there are areas that could serve as a baseline or reference condition, particularly in the Mountain Mahogany Mixed Shrubland or where forest and woodland types occur on steep slopes. However, woodland types in terrain not limiting to livestock use most likely represent a departure from the reference condition. Specifically, tree density increases resulting from historic overgrazing and fire suppression, maintained by current livestock grazing. Even within inventoried roadless areas, historic harvest of wood products to supply area residents was extensive. Much of the area was completely cut-over. However, this may not limit its value to climate change related research.

5. Does the area serve as a control for comparing results from manipulative research?

No. It contains areas both representative of the landscape settings and types and/or rates of geomorphic processes that manipulative research typically targets, and areas that are not. While it is large enough to provide for paired watershed studies, large tracts of inventoried roadless area could be limiting to that type of research.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. The area is larger than some designated RNAs that have been managed successfully.

7. Does the area show little to no evidence of major disturbances by humans?

Yes and No. Yes, where Mountain Mahogany Mixed Shrubland and forest or woodland types occur on steep slopes. Elsewhere, it does. See previous.

8. Does the area reflect its original, near-pristine condition as closely as possible?

Yes and No. Yes, where Mountain Mahogany Mixed Shrubland and forest or woodland types occur on steep slopes. Elsewhere, it does not. See previous.

9. Does the area represent the best available, qualified area?

No. In general, the answer is no based on answers to previous questions. However, it may contain areas that are the best available, qualified area for Mountain Mahogany Mixed Shrubland. If specific interest in locating such an area within the Piños Altos Range was brought forward, it might be worth the investment of time to locate such an area within the inventoried roadless area, given the need rank of 3. Outside the inventoried roadless area, proximity to Urban Interface values may be a consideration as RNA proposal or designation may or may not limit management's ability to provide protections for those values.

Eagle Peak

Eagle Peak is located in the Tularosa Mountains approximately 10 miles east of Reserve, New Mexico. The area was recommended for RNA evaluation during the last planning cycle based on the presence of late seral mixed conifer, mature aspen stands and common juniper. The mountain itself has tribal significance. The area considered for this evaluation corresponds with the Eagle Peak Inventoried Roadless Area.

1. Does the area contain ERU classes with need rankings of 2 or 3 and/or is there an outstanding example of an aquatic habitat that may be appropriate as a potential RNA?

Yes. The area contains PJ Woodland and Ponderosa Pine Forest (both need rank 2), as well as PJ Grass Woodland (no need rank), Ponderosa Pine-Evergreen Oak, Mixed Conifer-Frequent Fire and Mixed Conifer with Aspen (all need rank 1). Mixed conifer types have a high vulnerability to climate change on the Gila National Forest. It does not contain riparian or aquatic habitat, although there is relatively poor quality Montane-Conifer Willow (need rank 2) representation just outside its boundaries.

2. Does the area contribute to a wide spectrum of high quality, representative areas of the major forms of ecological variability and natural situations of scientific interest or importance that in combination form a national network of areas for research, education and maintenance of biological diversity?

Yes and No. While the area contains ERUs associated with identified needs, they are not high quality as is demonstrated in the answers to the remaining questions. On the other hand, there is substantial scientific interest in fire and climate facilitated vegetation changes. Given the disturbance history on Eagle Peak, it may be of scientific interest for that purpose.

3. Does the area contribute to the preservation and maintenance of genetic diversity, including threatened, endangered and species of conservation concern and/or aquatic systems?

Yes. Because there is no readily available information related to the genetic diversity of the species present, it is assumed that the area contributes to the preservation and maintenance of genetic diversity. Given the limited distribution of common juniper (*Juniperus communis* L.) on the Forest, there may be a stronger argument that it contributes significantly to the genetic diversity of that species. No rigorous botanical survey has been completed, but there are documented populations of Gooding's onion, which is on the draft Species of Conservation Concern list. The area also contains critical habitat for Mexican spotted owl and many Protected Activity Centers (PACs).

4. Does the area serve as a baseline or reference area for the study of long-term biological, disturbance, hydrologic or other processes or climate change?

Yes and No. The area would not be a good baseline or reference for many types of research. Forest and woodland systems have been substantially influenced by wood product harvest and livestock grazing. However, this may not limit its use as a baseline or reference area for climate change research.

5. Does the area serve as a control for comparing results from manipulative research?

Yes and No. There may be areas in forested systems that could serve as controls for reforestation and climate related research depending on the study design, however most of the area has already been manipulated and would not be well-suited as a control.

6. Is the area large enough to provide essentially unmodified conditions within its interior, maintain ecological processes and the features or qualities for which the RNA is proposed?

Yes. The area is larger than some designated RNAs that have been managed successfully.

7. Does the area show little to no evidence of major disturbances by humans?

No. The northern part of the area has seen more firewood harvest, logging, piñon-juniper pushes, and thinning vegetation treatments. Because of rugged terrain, there has been less activity in the southern half of this area. There are still cable logging trails visible in some areas. Livestock grazing impacts are evident. Specifically, tree density increases resulting from historic overgrazing and fire suppression, maintained by current livestock grazing. Livestock grazing is expected to continue, and even if it were discontinued, the large elk population in the area would continue to impact hydrologic processes.

8. Does the area reflect its original, near-pristine condition as closely as possible?

No. See previous.

9. Does the area represent the best available, qualified area?

No. While research could certainly be conducted in this area, the pervasiveness of human influence makes it ill-suited for RNA status.

Summary and Recommendations to the Forest Supervisor

The existing designated Gila River RNA remains a high quality representation of the Cottonwood Group ERUs. There is no reason for disestablishment at this time. However, current plan direction and its implementation may be inadequate to provide for the features and qualities it was designated for. The establishment record indicates the intention to close the west side of the river to human entry. There is currently no plan direction or implementation mechanism in place discouraging recreationists along the trail and river corridor from doing so.

Of the RNAs proposed in the last planning cycle, Turkey Creek and Rabbit Trap are high quality areas, fill regionally identified needs and had support of the Station Director during the last planning cycle. This evaluation identified no reason to release their proposals. However, it is recommended that Largo Mesa and Agua Fria areas be released from proposal because they are not high quality areas representing intact ecological processes, regardless of support from the Station Director during the last planning cycle. Largo Mesa does not fill an identified need. It represents a departure from

reference condition and restoration would require manipulative management. Agua Fria does fill an identified need, but also contains a substantial component that does not. Restoration of that component would likely require manipulative management, but such management would be unlikely to affect the portion of the area that fills an identified need. RNA status for both of these areas could conflict with continuing multiple-use management.

Of the areas recommended for RNA evaluation in the last planning cycle, this evaluation finds pros and cons related to the merit of each of them. Both Lower San Francisco River and Mule Creek areas were identified for evaluation based on their riparian and aquatic ecosystems. However, those high quality riparian systems do not fill an identified need. The pervasiveness of non-native aquatic species in the aquatic ecosystem associated with the San Francisco River are a substantial factor detracting from its quality. The upland ecosystems in these areas do fill identified needs, are of high quality and RNA status would have little impact on multiple-use.

The Tillie Hall area fills several identified needs and might add to the range of biophysical settings for research in Madreañ Piñon-Oak Woodland, but are potential conflicts with livestock grazing. The Mineral Creek area fills two identified needs and may be of scientific interest related to fire regimes, reforestation and climate change. The area is qualified, although there are plenty of other areas on the Forest that could serve similar research purposes just as well. On the other hand, many of these other areas are located within designated wilderness, which poses some restrictions on instrumentation; Mineral Creek may have an advantage over wilderness locations due to the adjacent access along the Hwy 159 and the Bursum road and fewer restrictions on research instrumentation. RNA status would also have little impact on multiple-use.

Rocky Canyon fills an identified need, might add to the range of biophysical settings for research in ponderosa pine types, and could be of interest in climate change studies. On the other hand, the status of ecological processes is preserved under its wilderness designation. Wilderness designation poses some restrictions on instrumentation, but it does not preclude research.

The Piños Altos Mountains may fill several identified needs and expand the range of biophysical settings for research in ponderosa pine and dry mixed conifer types. However, the area contains high quality and poor quality areas. High quality settings are primarily restricted to steep slopes, where human influence has been minimal due to terrain. The Eagle Peak area may be of interest to research, but does not qualify for RNA status based on the degree of human influence.

Finally, there may be issues associated with current RNA plan direction for fire and recreation management. Current recreation related direction is unclear, and/or inconsistent with at least the Gila River RNA's establishment record. Current direction for fire is also unclear and maybe inappropriate with maintaining natural ecological processes in the uplands. It is recommended that plan direction be clarified to demonstrate consistency with establishment records and maintenance of natural processes.

Forest Supervisor Proposals for the Regional Forester

The forest supervisor proposes to retain the designated Gila River RNA and carry forward the existing proposals for RNA designations for Turkey Creek and Rabbit Trap. Although the Cottonwood Group ERUs are well represented in the region, the Gila River RNA is a high quality example and supports an exceptionally diverse bird population. The Turkey Creek area was originally proposed for its geologic features and to protect riparian and aquatic habitat associated with the Turkey Creek and Skeleton Canyon drainages, both features contribute to high quality

representation within the RNA system. Turkey Creek also fills regionally identified needs for upland vegetation types. Similarly, the Rabbit Trap proposal fills identified needs for upland vegetation, may serve as an excellent control and supports Davidson's cliff carrot, an at-risk species. There is also documented support from station directors and others for these candidate RNAs.

For the Rocky Canyon area, the forest supervisor is interested in expanding the range of biophysical conditions representing ponderosa pine types in the RNA network, but does not want to create maintenance work or potential impacts to future livestock grazing in the Mimbres/Powderhorn/Sapillo allotment. This allotment is currently in non-use, but this may not always be the case. The North Brannon pasture of the Mimbres/Powderhorn/Sapillo allotment was looked at for RNA designation. This pasture is currently fenced in its entirety and contains the highest concentration of Ponderosa Pine-Evergreen Oak. However, the North Brannon pasture is 5,655 acres, which might not leave enough of the allotment without designation and livestock exclusion, so as to not hamper future livestock grazing options.

The Largo Mesa and Agua Fria proposals are withdrawn because they are not high quality areas representing intact ecological processes, regardless of support from the Station Director during the last planning cycle. Largo Mesa does not fill an identified need. It represents a departure from reference condition and restoration would require manipulative management. Agua Fria does fill an identified need, but also contains a substantial amount of area that does not. RNA status for both of these areas could conflict with continuing multiple-use management.

Eagle Peak does not qualify for RNA status due to the degree of human influence. The Piños Altos Mountains were not carried forward for proposal due to Wildland Urban Interface concerns. Additionally, without interest from the public, Forest staff, or a research station, the level of effort that would be required to identify areas within this mountain range that could qualify for RNA status and fill identified needs was determined to be excessive.

Mineral Creek is not proposed because most of its scientific value is tied to climate and fire dynamics. The forest supervisor views the entire Gila National Forest as a study area for this topic and does not find any of the arguments for its designation to be compelling without the support of a station director. Tillie Hall is not proposed because to identify an area large enough to manage as an RNA would remove an entire allotment from use.

Both Lower San Francisco River and Mule Creek areas were identified for evaluation based on their riparian and aquatic ecosystems. However, those high quality riparian systems do not fill an identified need. The pervasiveness of non-native aquatic species associated with the San Francisco River are a substantial factor detracting from its quality. The upland ecosystems in these areas do fill identified needs, are of high quality and RNA status would have little impact on multiple-use. However, because these upland systems were not the intent of the original recommendations to evaluate them for RNA designation, no support for their proposal outside of Forest staff, and potential maintenance requirements, they are not proposed.

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Appendix I. Documentation of the Botanical Area Evaluation Process

Background

According to the 2012 Planning Rule Final Directives, a designated area is defined at 36 CFR 219.19 as:

An area or feature identified and managed to maintain its unique special character or purpose. Some categories of designated areas may be designated only by statute and some categories may be established administratively in the land management planning process or by other administrative processes of the Federal executive branch. Examples of statutorily designated areas are national heritage areas, national recreational areas, national scenic trails, wild and scenic rivers, wilderness areas, and wilderness study areas. Examples of administratively designated areas are experimental forests, research natural areas, scenic byways, botanical areas, and significant caves.

Land management plan decisions may include recommendations to establish additional or modify existing designated areas. Some designated areas may be formally designated or established concurrently with a plan decision, while others may not. The term “designated area” refers to categories of area or feature established by, or pursuant to, statute, regulation, or policy. Once established the designation continues until a subsequent decision by the appropriate authority removes the designation. Changes in actual designations do not occur as part the plan decision.

The Responsible Official (forest supervisor) may consider recommending for designation many types of designated areas that could either be statutorily or administratively designated. Statutory designations are areas that require a Congressional Act or Presidential Executive order to designate, such as Wilderness or National Monument respectively. Administratively designated areas can be recommended by the Responsible Official but designation authority resides with a higher administrative level of the agency. For example, the forest supervisor may recommend a Historical Area or Botanical Area, and if the area is less than 100,000 acres, the regional forester can make the designation. However, if the area is greater than 100,000 acres, the designation authority lies with the Secretary of Agriculture. More examples of various designations can be found in Forest Service Handbook (FSH) 1909.12, Chapter 20 (24) Exhibit 01. The intent behind identifying designated areas in plans and recommending additional areas for designation is to:

- a. Assure that plans identify established designated areas and provide plan components appropriate for the designated area; and
- b. Recommend areas where doing so would help to carry out the distinctive role and contributions of the plan area in the broader landscape or contribute to achieving desired conditions for the plan area. Recommendations for designated areas are limited to areas that meet the distinctive qualifications for designation that varies by category or types listed in 24, exhibit 01.

Proposals from Stakeholders

Throughout the course of the Gila National Forest plan revision process, the public has been encouraged to engage in the development of the new Forest Plan. During the public engagement process, there were two suggestions for creating special areas for vegetation, one request was for creating a special area for Chihuahua Pine/Madrone community on Bear Mountain road near Silver

City. This suggestion was reviewed, but determined by the planning team members that the area did not have the concentration of endemic species that some other areas had, and the issues identified in the suggestion letter might be dealt with in other ways besides a special designation. The second was a recommendation for establishing Botanical Areas on the Gila National Forest was put forth by the Gila Native Plant Society (GNPS) on June 12, 2017, in their scoping comments. More specifically, the GNPS proposes that in all alternatives:

“...the creation of “Special Botanical Areas” as a means of meeting the obligations of the forest planning process to maintain viable populations of species of concern. We urge the Forest Service to analyze the eight important plant areas identified in the Gila National Forest and use these data as the foundation of establishing areas for administrative special area designation.”

The GNPS proposal was based on work done by the New Mexico Rare Plant Conservation Strategy released in 2017 ([link](#)). A shapefile of eight Important Plant Areas (IPAs) developed as part of this strategy was provided by Daniela Roth, State Botanist, on November 21, 2017. The delineation of IPAs was based on the spatial modeling of the species observation data in a GIS database in combination with botanical expert review. After the forest reviewed the IPAs proposed for Botanical Areas, a few of them were greater than 100,000 acres in size, which would require designation by the Secretary of Agriculture (figure 87).

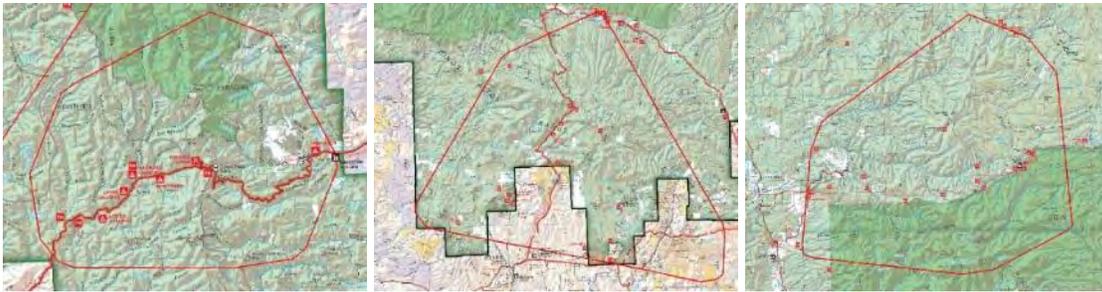


Figure 87. Original botanical area proposal from the Gila Native Plant Society (Mogollon Mtns. = 163,009 acres; Piños Altos = 155,021 acres; Emory Pass = 52,850 acres)

This information was relayed to Patrice Mutchnick of the GNPS, who later provided the Gila National Forest with an updated map and proposed language for describing their revised list of Proposed Botanical Areas adjusting for size and species composition. Three proposed Botanical Areas were brought forth by GNPS (Emory Pass, Mogollon Mountains, and Piños Altos Mountains) based on identification of highly clustered concentrations of rare and endemic plant species (figure 88).

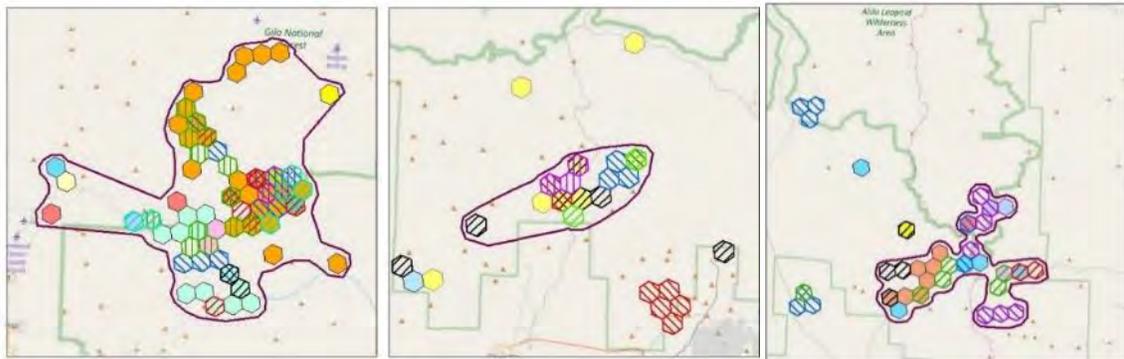


Figure 88. Updated botanical area proposal from the Gila Native Plant Society (Mogollon Mtns. = 98,510 acres; Piños Altos = 20,930 acres; Emory Pass = 31,150 acres)

These areas were then reviewed by the planning team members and discussed with the forest supervisor. The team felt these areas should be proposed because of the seemingly higher concentrations of rare and endemic plant species. These areas are located in fairly popular areas for forest visitors. After it was discussed, the team believed that proposing these areas for designation would be a good opportunity to educate forest visitors on the importance and value of rare and narrow endemic species on the forest. On April 9, 2018, the boundaries of the three proposed Botanical Areas were edited by the planning team members to enable easier identification of boundary locations by following landmarks, avoid surrounding private property, and also encompassing only the highest density of rare and endemic plant species. On May 2, 2018 the planning team members and Resource specialists met and further modified the three proposed Botanical Areas to their final draft boundaries (figure 89) as well as developing preliminary draft Desired Conditions, Standards, and Guidelines in accordance with FSH 1909.12, Chapter 20, Sections 22, 23, and 24.2(2). The forest met with Patrice Mutchnick of the GNPS on June 19, 2018, to discuss individual plant species for potential inclusion onto the Species of Conservation Concern list. During the meeting, we discussed the changes made to the Proposed Botanical Areas original proposal from GNPS, as well as the rationale for why the changes were made.



Figure 89. Forest-modified botanical area proposal (Mogollon Mtns. = 45,029 acres; Piños Altos = 6,198 acres; Emory Pass = 16,944 acres)

Summary and Recommendations to the Forest Supervisor

With the proposed Botanical Areas identified, the 2012 Planning Rule requires the Responsible Official to determine whether to recommend these additional areas, and if so, incorporate the areas into one or more alternatives in the plan on a map or using a narrative.

Upon further review of the recommendations and in discussions with the Responsible Official, planning team members, and extended planning team members, the Gila National Forest has decided to develop Management Areas for the proposed Botanical Areas identified to incorporate into the Revised Forest Plan. This was decided because the team believed this would provide for the management that would benefit the areas once the Forest Plan is finalized, and there would be no need to wait on the regional forester to concur and finalize the designation. The draft desired conditions, standards and guidelines, and management recommendations will be associated with and managed for within the management areas immediately upon finalization of the plan.

Therefore, the Gila National Forest proposes establishing the three identified proposed Botanical Areas described above, along with the acreages and plan components identified in the forest-modified proposal, as Rare and Endemic Vegetation Management Areas in the Gila National Forest Revised Forest Plan in alternative 2. Identifying and recommending official designated Botanical Areas as well as the acreages identified in the proposal made by the GNPS will be included in alternative 5.

Under alternative 2, the proposed Botanical Areas will not be recommended as Designated Areas with the decision for the Gila National Forest Revised Forest Plan, but will be established as Management Areas.

Appendix J. Crosswalk of Previous Plan Components to Revised Plan Components

Reserved for Final Environmental Impact Statement.

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Appendix K. Risk Assessments and Worksheets

Introduction

Decisions to use herbicides must be based not only on the effectiveness of these tools, but also on an understanding of the risks associated with their use. For those commonly used by the Forest Service, human health and ecological risk assessments are prepared. Risk assessments evaluate the probability that a use might pose harm to humans or other species in the environment. Risk is defined as the likelihood that an effect may result from a specific set of circumstances. While all human activities carry some degree of risk, some risks are known with a relatively high degree of accuracy, because data have been collected on the historical occurrence of related problems, for example, lung cancer is caused by smoking and alcohol impairment causes auto accidents. For several reasons, risks associated with activities, including exposure to chemicals such as herbicides, are not so readily determined.

When evaluating risks from the use of herbicides and other pesticides, the courts have determined that reliance on the U.S. Environmental Protection Agency (EPA) risk assessments, which support a chemical’s registration under the amended Federal Insecticide, Fungicide and Rodenticide Act, is insufficient. Court decisions in the 1980’s determined the Forest Service can use the EPA toxicology data, but it is still required to do an independent assessment. Forest Service risk assessments are developed by Syracuse Environmental Research Associates, Inc. (SERA) using the same process that Forest Service risk assessments are developed by Syracuse Environmental Research Associates, Inc. (SERA). The application rates and methods, and specialized exposure scenarios in the SERA risk assessments are specific to Forest Service programs.

Each risk assessment is accompanied by one or more Excel worksheets which SERA has designed as computational tools that allow Forest Service staff to efficiently explore a variety of application scenarios. Users can adjust application rates and methods, acres treated, and other parameters to understand how different approaches may affect risk to human health, and terrestrial and aquatic plant and animals. The risk assessments and the worksheets are discussed in greater detail in subsequent sections of this appendix. Risk assessment documents and worksheets may be used in lieu of a project-specific risk assessment.

Risk Assessments

Table 82 serves to incorporate by reference the 21 herbicides with Forest Service risk assessments included in the forest-wide, project-level herbicide-use proposals.

Table 82. Herbicides with Forest Service risk assessments

Herbicide Name	Date of Risk Assessment	Reference
Aminocyclopyrachlor	September 27, 2012	SERA 2012
Aminopyralid	June, 28, 2007	SERA 2007
2,4-D	September 30, 2006	SERA 2006
Chlorsulfuron	November 21, 2004	SERA 2004b
Clethodim	October 30, 2014	SERA 2014a
Clopyralid	December 5, 2004	SERA 2004c
Dicamba	November 24, 2004	SERA 2004a

Herbicide Name	Date of Risk Assessment	Reference
Endothall	November 27, 2009	SERA 2009a
Fluazifop-P-Butyl	July 21, 2014	SERA 2014c
Fluridone	November 25, 2008	SERA 2008
Fluroxypyr	June 12, 2009	SERA 2009b
Glyphosate	March 25, 2011	SERA 2011b
Hexazinone	October 25, 2005	SERA 2005a
Imazamox	December 10, 2010	SERA 2010
Imazapic	December 23, 2004	SERA 2004e
Imazapyr	December 16, 2011	SERA 2011a
Metsulfuron Methyl	December 9, 2005	SERA 2005b
Picloram	September 29, 2011	SERA 2011c
Sulfometuron Methyl	December 14, 2004	SERA 2004d
Tebuthiuron	September 22, 2016	SERA 2016
Triclopyr	March 15, 2003	SERA 2011d

Assessment Process

Risk assessments evaluate a variety of information sources and provide a general program for Forest Service use of each herbicide. The general program contains a chemical description and identifies the commercial formulations approved for Forest Service use, reviews label-approved application methods, mixing procedures and Forest Service application rates. All application parameters are within those permitted by label, law, but may be more conservative than the label allows.

The risk assessment also characterizes both the human health and ecological risk by identifying hazards and exposure scenarios. Regardless of the date of publication, each risk assessment employs the same methodology for analyzing the available and most relevant science. For the human health, the process is:

1. Describe the hazards as presented in the available literature.
2. Describe potential exposure to workers based on the application methods.
3. Describe potential exposure to workers in a number of accidental exposure scenarios.
4. Describe potential exposure to the general public based on a number of possible scenarios.
5. Describe the “reference” dose, which may have both an acute (short-term) and chronic (long-term) measure. A reference dose is the amount of a substance that would not have an adverse effect. The EPA reference doses are used in Forest Service assessments unless there is a compelling reason to do otherwise.
6. Calculate a “hazard quotient” by dividing the expected exposure by the reference dose. A number greater than one is the threshold which raises concerns about human health, but may not pose a high risk if the length of the exposure is short-term (acute). A hazard quotient greater than 10 raises concern to the level that further evaluation would be necessary to avoid that scenario.

The process for the ecological risk assessment is similar, except it includes specific information about the toxicity of each herbicide to various species of plants and animals where information is available. In addition, the EPA includes peer-reviewed studies when possible and continues to update the information as new data is shown to be relevant. When there is a knowledge gap, the risk assessments state this and provide inferences of risk based on what is known whenever possible. These are standard risk assessment procedures, tested by several years of EPA use and scrutiny by the larger scientific community. As noted in a number of risk assessments, effects can be minimized or avoided by prudent industrial hygiene practices during proper handling procedures. However, as SERA analysts have stated “the only reservation attached is that associated with any risk assessment: **Absolute safety cannot be proven and the absence of risk can never be demonstrated** [emphasis in original text](SERA 2004c). No chemical has been studied for all possible effects and the use of data from laboratory animals to estimate hazard or lack of hazard to humans is a process that is fraught with uncertainty.

Hazard Identification

Hazard identification relies heavily on the EPA toxicology data and the often limited “open” published literature available to the general public. It is heavily reliant on studies conducted on laboratory animals that support product registration. One function of these studies is to determine what constitutes a lethal or otherwise harmful dose, not necessarily a realistic dose. As a result, these studies are useful for determining what uses the label should allow or prohibit, and what mitigation measures might be necessary to avoid toxic exposures. Exposures that might occur when the chemical is used according the label are realistic, or at least plausible doses.

Exposure Scenarios

As alluded to previously, exposure scenarios consider plausible acute and chronic doses that humans, other terrestrial life and aquatic life may encounter when the chemical is used according to the label (general exposure) and in a variety of accidental exposure scenarios. For herbicide applicators, general exposure scenarios include a variety of application rates and methods and are based on the assumption that personal protective equipment is either not used appropriately or is defective. In many cases, the predicted general risk can be avoided with good industrial hygiene practices during handling and application. Accidental spills can also be avoided with good practices, but having a spill plan specific to each application is a prudent mitigation measure.

Exposure scenarios for the general public are based on the most plausible extremes, placing a high value on conserving human health. These extreme exposures may not be likely, but they cannot be ruled out. The extreme approach is based on the concept of Most Exposed Individual, sometimes referred to as the Maximum Exposed Individual. Central and lower bound estimates of risk are also calculated, but they not intended to lessen concern. They are intended to assess the feasibility of measures to limit exposure. If lower bound exposure estimates exceed the level of concern (hazard quotient greater than 1), it should be taken as a strong indication that the herbicide cannot be used in a manner that will lead to acceptable levels of risk. General exposures for the public may include direct spray, dermal exposure from treated vegetation, and ingestion of contaminated fish or vegetation. Accidental exposures include drinking contaminated water and accidental direct spray from drift. The exposed individual is generally a child or young woman. Both acute and longer-term, repeated exposures are evaluated.

Ecological exposure scenarios evaluate risks to mammals, birds, terrestrial and aquatic invertebrates, fish, amphibians, soil microorganisms and non-target plants, both aquatic and

terrestrial. Direct spray, indirect contact, off-site drift, ingestion of contaminated vegetation, prey or water, runoff, wind erosion and contaminated irrigation water are each considered for relevant groups of organisms.

Many assumptions are necessary to evaluate the exposure scenarios, including application rate and

Reference Doses

Recall that reference doses are the amount of a substance that would not have an observable adverse effect. The EPA derives these values from the available studies. The reference dose is determined by studies that subject animals to substances to identify the lowest observable effect level and the no observable effect level from the entire body of scientifically supportable studies performed for that substance. The no observable effect level is divided by a safety factor, usually 100, to account for extrapolation of animal data to humans, including sensitive individuals. Therefore, the reference dose is at least 100 times lower than that shown to have any effect in any animal study.

Sometimes, the EPA will derive acute reference doses when developmental studies show a toxicologically significant effect could be associated with a single dose. Acute reference doses are not derived when there are no potentially significant toxic effects. Chronic reference doses are consistently developed by the EPA. For herbicides and exposure scenarios that do not have an established reference dose, SERA develops a reference dose based on the EPA protocols and available data.

Hazard Quotients

As previously described, hazard quotients are calculated by dividing the dose associated with a particular exposure scenario by the reference dose. Hazard quotient values less than one indicate a low risk for adverse effects. A value of one is the threshold above which there is reasonable concern for adverse effects. The hazard quotient values reported in the risk assessments are a first approximation of risk. Changing the type of herbicide formulation, application rate, application method, and number of acres treated per day can change the hazard quotient. All of these variables are specific to each application scenario, and the worksheets that accompany the risk assessments provide the analytical tool to design applications that reduce hazard quotients, and therefore maintain acceptable levels of risk.

Worksheets and Risk Reduction

All of the exposure scenarios for human health and ecological receptors are included in the Excel worksheets. The individual herbicide worksheets and the WorksheetMaker user-guide can be found on the same Forest Service web page where the risk assessment documents are housed (<https://www.fs.fed.us/foresthealth/protecting-forest/integrated-pest-management/pesticide-management/pesticide-risk-assessments.shtml>).

Herbicide Characteristics, Hazards and Risks

Of the herbicides considered in this analysis, a range of risks exists depending on different conditions and uses. The difficulty in drawing general conclusions lies in the complexity of the proposed use, the variety of the situations that will be involved, and a certain level of uncertainty that becomes inevitable when factoring in the numerous possibilities. However, a few general conclusions can be made:

- As with most chemicals, eye irritation can result from exposure to relatively high levels of these herbicides.
- No studies have been shown a direct cause-effect link between any of the herbicides, or formulations thereof, and cancer - except clopyralid and picloram, which contain hexachlorobenzene as a manufacturing impurity. This is discussed in more detail in the discussion of specific herbicide characteristics and effects later in this section.
- No studies have demonstrated a cause-effect link between any of the herbicides, or formulations thereof, and endocrine system disruption.
- Effects to non-target vegetation, on or off the application site, is highly specific to situational circumstances including: application method, rate and timing; soil texture, infiltration capacity and permeability; vegetative conditions and; weather, including precipitation, temperature and wind.
- Secondary or indirect effects on wildlife are plausible as herbicides affect vegetation, and therefore habitat and food sources. Those effects may be beneficial, detrimental, or both depending on a variety of factors and the particular wildlife species in question.

In the herbicide-specific sections that follow, the characteristics, hazards and risks associated with general Forest Service programs are summarized from the risk assessments. Reported hazard quotients are specific to the risk assessment modeling. Based on the design criteria included in all of the herbicide use alternatives, one or more of site specific variables would be altered as needed to maintain hazard quotient values below one.

Aminocyclopyrachlor

Aminocyclopyrachlor is a relatively new herbicide under a conditional registration for the control of dichotomous broadleaf weeds and woody species. It is particularly effective in controlling leafy spurge, and is labeled for both terrestrial and riparian (but not aquatic) invasive and noxious weeds. Formulations that also contain chlorsulfuron, metsulfuron methyl and metsulfuron methyl plus imazapyr will require using the Excel WorksheetMaker that accompanies the aminocyclopyrachlor risk assessment. The formulation Imprelis® is not to be used, as it has been shown to be atypically toxic to some non-target species of conifers (SERA 2012).

As with all relatively new herbicides, there is a smaller amount of information on potential toxicity. The information currently available is that supporting its conditional registration. The EPA is requiring additional studies to support a full, unconditional registration but has determined the conditional registration allowing its use prior to completion of additional studies in the public interest due to its ability to control leafy spurge (SERA 2012).

The only consistent signs of toxicity in mammals involve decreased body weight, decreased weight gain, decreased food consumption and decreased food conversion efficiency. Studies in rats have demonstrated no lethal dose and are the basis for the EPA classification of *practically non-toxic* to mammals, including humans, as well as birds, fish and salt water aquatic invertebrates. It is classified as *slightly toxic* to freshwater invertebrates. Effects to honeybees have been sublethal. However, the EPA has identified cyclopropanecarboxylic acid as an environmental metabolite of concern. This acid is formed when the herbicide undergoes photodegradation in water. Studies in rats has shown cyclopropanecarboxylic acid causes fatty changes in the liver (SERA 2012).

All of the human health exposure scenarios are substantially below the level of concern for both aminocyclopyrachlor and cyclopropanecarboxylic acid except in the case of an extreme accidental spill in water and subsequent human consumption of that water. In this case, it is the metabolite cyclopropanecarboxylic acid that represents the risk, which can be reduced below the level of concern if remedial actions are taken within 40 days of the spill (SERA 2012).

Effects to non-target vegetation seem to be more severe with methyl ester formulations and less with acid formulations. In the absence of information on inert ingredients in Imprelis®, conifer damage remains a concern for all formulations of aminocyclopyrachlor despite misapplication being a potential cause of observed effects with Imprelis®.

Aminocyclopyrachlor has a high potential for reaching surface water through runoff several months after application. It should not be used during periods of intense rainfall or to soils saturated with water or to soils with low infiltration rates.

Aminopyralid

Aminopyralid is a relatively new herbicide that is particularly effective on: musk and Canada thistles; yellow starthistle; spotted, diffuse, and Russian knapweeds; and other difficult-to-control broadleaf plants (SERA 2007). It is primarily a post-emergence herbicide but has excellent pre-emergence residual activity in the soil. Residual activity can last into the season after treatment on certain weed species. It has been shown to cause little or no injury to most grasses and mature non-leguminous trees; however, it can cause leaf discoloration, curling or other foliage symptoms on trees if over-applied. Leguminous trees such as New Mexico locust can be seriously injured by under-tree application.

The EPA considers aminopyralid a *reduced risk* herbicide because there is no evidence of adverse human health effects for applicators or the general public, nor is there evidence of adverse effects to wildlife or domestic animals. Bioassays in honeybees, earthworms, soil microorganisms, fish and aquatic invertebrates also indicate low or no toxicity (SERA 2007). However, as with all relatively new herbicides, there is a smaller amount of information on potential toxicity. The information currently available is that supporting its registration.

2,4-D

2,4-D is used to control broadleaf weeds, woody plants, aquatic weeds, and non-flowering plants. It inhibits susceptible plants by interfering with nutrient transport. It is a short-residual herbicide that remains active for 10 to 14 days. It can kill or injure many broadleaf plants depending on site conditions, plant growth stage, and application rate. However, broadleaf plants that germinate from seed or that begin to grow 10 days after application should remain unaffected. On woody species, vegetative growth may be killed, but plants generally recover in a year or less (USDA FS 2003).

The half-life of 2,4-D in the environment is relatively short, averaging 10 days in soils and less than 10 days in water dependent upon other factors such as temperature and soil condition (Tu et al. 2001). Most formulations are degraded to a water-soluble form that has the potential to be highly mobile. The toxicity of 2,4-D varies by its chemical form and the affected organism.

Ester formulations are toxic to fish and aquatic invertebrates, but salt formulations are registered for use against aquatic weeds (Tu et al. 2001). In birds, 2,4-D ranges from being virtually

nontoxic in its butyl ester form to moderately toxic as an amine salt. Mammals are moderately sensitive, but it is nontoxic to bees.

2,4-D has been extensively investigated primarily because it was used in combination with 2,4,5-T as the active ingredients in Agent Orange. 2,4,5-T has been taken off the market due to manufacturing impurities that were determined to cause cancer, birth defects and other human health issues. No such similar effects have been substantiated for 2,4-D, but there are human health effects and risk (SERA 2006). Studies in rats and dogs suggest that 2,4-D is not carcinogenic, but liver damage was seen at relatively low doses. No effect on reproduction or fertility has been demonstrated in rats and most studies show it does not cause genetic defects.

The risk assessment concludes that unless applied with effective personal protection equipment and handling procedures, exposure levels for workers involved in ground or aerial application may exceed the reference dose and may result in toxic effects that may or may not be immediately recognized (SERA 2006). The risk of the general public experiencing any adverse effects is extremely low under the conditions they would likely be exposed. Accidental levels of exposure to the public could result in equivalent exposure as workers. Consumption of contaminated vegetation over a period of several months could result in adverse health effects, but the likelihood of this occurring is remote since it would require repeated use of contaminated vegetation collected immediately after the herbicide application in order for the exposure to reach those dose levels.

It does not bioaccumulate in terrestrial wildlife (SERA 2006); risks to browsing wildlife and foraging raptors appears to be low. However, some formulations of 2,4-D can bioaccumulate in aquatic species (SERA 2006 and Tu et al. 2001) and can kill fish eggs (Tu et al. 2001). Hence, it is extremely important to use only those formulations registered for aquatic use in situations where runoff could feasibly transport 2,4-D to drainages and waterbodies.

The primary degradation mechanism is microbial decomposition, but mineralization and possibly light exposure may also play a role. Degradation rates are determined by the microbial population, environmental pH, moisture and temperature (Tu et al. 2001).

If non-target plants are accidentally sprayed at the application rates used by the Forest Service (SERA 2006), they are likely to be damaged, particularly in the upper ranges of anticipated application rates. The extent and duration of damage will depend on the time of application and plant species. The extent of drift from back-pack or boom spray application methods will depend on conditions during application such as wind speed, wind direction, topography, the distance from the ground at which the herbicide is applied and the droplet size of the herbicide spray. Product labels specify a range of acceptable wind speeds. If spray methods are selected, backpack spraying likely to have the shortest drift, followed by low boom spraying, with high boom spraying having the farthest drift.

Chlorsulfuron

Chlorsulfuron is used for control of broadleaf weeds and some grasses. It is absorbed through the roots and foliage of plants. It inhibits susceptible plants from producing an essential amino acid that controls cell division in the root tips and shoots. In non-susceptible plants, it is metabolized into inactive chemicals. Chlorsulfuron is generally used to combat thistles and is particularly useful in maintaining native perennial grasses.

It chemically bonds to soil organic matter and clay particles, which limits the herbicide's downward mobility in the environment given the organic matter and clay content of the particular soil. It tends to leach in more permeable soils unless they are acidic (pH less than 6), but with very low application rates (0.25 to three ounces of formulated product per acre) there is little potential for it to enter groundwater even on more permeable soils.

Mobility downslope is a larger risk due to detachment and transport of the soil particles it bonds to. It is also relatively persistent in soils with a half-life of one to three months depending on soil acidity, which is part of the reason it is effective. Because of its persistence and mobility, it has the potential to enter surface water from runoff. It is relatively soluble in water. It is primarily degraded by soil microbes and does not evaporate easily.

Chlorsulfuron has not been found to cause reproductive harm or to be mutagenic or carcinogenic to mammals through the EPA risk assessment protocol, which was affirmed by the World Health Organization. However, for transparency's sake, the Forest Service risk assessment does acknowledge that evaluations by the European Food Safety Authority summarizes a study, without a full reference or citation, that indicates that at relatively high doses, chlorsulfuron demonstrated limited evidence of a carcinogenic effect in rats (SERA 2004b). The most sensitive effect of chlorsulfuron in mammals appears to be weight loss. For both applicators and the general public, typical exposures to chlorsulfuron do not lead to estimated doses that exceed a level of concern. Estimated doses only exceed the level of concern in an extreme accidental spill scenario (SERA 2004b).

Chlorsulfuron is classified as *practically nontoxic* to mammals, birds, honeybees, fish and aquatic invertebrates. No data are available for reptiles and amphibians. As in mammals, the primary signs of chronic toxicity are weight loss or decreased weight gain. Similarly, reduced growth is the most sensitive sign of long-term toxicity in fish. A decrease in the number of offspring in coastal water fleas was the only sign of toxicity observed in aquatic invertebrates (SERA 2004b).

Because chlorsulfuron is potent and persistent herbicide, adverse effects on some non-target plant species, both terrestrial and aquatic, are possible unless measures are taken to limit exposure. Damage to non-target plant species after broadcast applications (boom spray) could extend to distance of greater than 900 feet from the application site. Directed foliar sprays (backpack) or other directed application methods could substantially reduce this distance, but the reduction has not currently been quantified. Offsite movement of chlorsulfuron in runoff could be substantial under conditions conducive to runoff, including areas where rainfall exceeds 15 inches annually or where rainfall intensities are high. The Gila National Forest includes areas that receive more than and less than this amount of annual rainfall, and rainfall intensities are often high during the summer monsoon season. Wind erosion could also transport chlorsulfuron offsite and result in damage to non-target plant species. The probability of damage to aquatic plants is less than terrestrial plants, but is still possible at typical application rates. Aquatic algae do not appear to be sensitive (SERA 2004b).

Clethodim

Clethodim is a very selective post-emergence herbicide used to control grasses. The EPA classifies clethodim as *practically non-toxic* to mammals, birds and honeybees, and *slightly to practically non-toxic* to fish. Based on available data, it would be classified as *moderately toxic* to aquatic invertebrates. There is a general lack of toxicity data specific to reptiles or amphibians; in the risk assessment, the bird data is used for terrestrial-phase amphibians and the fish data is used

for aquatic-phase amphibians. While there is no specific basis The most sensitive effects to chronic and subchronic exposure has been linked to decreases in body weight, body weight gain or food conversion efficiency and increases in liver weight in dogs, mice and rats. However, there are no reports of liver cell death associated with clethodim exposure. These effects have been classified as adaptive rather than toxic. Clethodim degrades rapidly, but some of the environmental metabolites are much more persistent in the environment, but there is no evidence that those metabolites are more toxic than clethodim itself. Formulations also contain petroleum distillates such as naphthalene or xylene that have potential toxicity, but at doses much larger than could plausibly be associated with using clethodim, given the low concentration of these ingredients (SERA 2014a).

In terms of human health, the risk to the general public does not exceed the threshold of concern even under extreme accidental spill scenarios. Applicators, on the other hand, are exposed to risk above the threshold of concern during backpack applications and in direct accidental exposure scenarios. Accidental exposure can be mitigated by good industrial hygiene practices during handling and application of the herbicide. Mitigating risk during backpack applications is possible, but what actions that might entail depend on the site-specific circumstances (SERA 2014a).

As previously stated, clethodim is very selective. This selectivity is for monocots, including but not limited to grasses. Onions, which are monocots, appear to be the exception and are relatively insensitive to clethodim. Dicots are also relatively insensitive. Based on the available data, clethodim would be classified as moderately toxic to some species of algae. Using clethodim with a surfactant would logically increase the risk posed to aquatic animals, but there is no basis for asserting the risk would be substantial (SERA 2014a).

Clopyralid

Clopyralid is a very selective herbicide that is effective on spotted knapweed and also affects members of four plant families: *Asteraceae* (composite), *Fabaceae* (legume), *Solanaceae* (nightshade) and *Polygonaceae* (knotweed/smartweed/buckwheat) (SERA 2004c). Clopyralid does not affect conifers or important browse species. The herbicide can be applied near or on other plant species without damaging them. Clopyralid usually provides one growing season of control.

Chemically similar to picloram, clopyralid has a shorter half-life, is more water soluble and has a lower adsorption capacity than picloram. It may be persistent in soils with low microorganism activity as microbial metabolism is the sole mechanism of degradation. The half-life can range from 15 to 287 days depending on soil type and climatic conditions (USDA FS 2005b as amended). Its persistence implies it has the potential to be highly mobile and may be transported to surface water (Tu et al. 2001). Technical grade clopyralid contains hexachlorobenzene and pentachlorobenzene as manufacturing impurities, which are potential human carcinogens. However, the amount of these manufacturing impurities that would enter the environment as a result of using this herbicide in agency programs is small compared to background levels (SERA 2004c).

Clopyralid is relatively nontoxic to birds, mammals and bees and does not bioaccumulate. Hexachlorobenzene, however, does bioaccumulate in fish (SERA 2004c). It is also of low toxicity to aquatic organisms. Because of its high water solubility, it does not bind to suspended particles

in the water column or to bottom substrates and can be persistent in the aquatic environment with a half-life of 8 to 40 days (SERA 2004c).

Based on the criteria and estimated levels of exposure, there is no evidence that typical or accidental exposures will lead to dose levels that exceed the level of concern for applicators. The first of two scenarios that would pose a risk above the level of concern for the general public is the extreme accidental spill scenario, and that risk is associated with hexachlorobenzene rather than clopyralid itself (SERA 2004c).

The second scenario that would pose a risk above the level of concern for the general public, associated with hexachlorobenzene rather than clopyralid itself, is the consumption of contaminated fish. Administratively, the Forest Service has adopted a cancer risk level of one in a million as a trigger that would require special steps to mitigate exposure or restrict and possibly eliminate use. Consuming large amounts of contaminated fish poses a cancer risk of three in a million. This scenario is highly unlikely as subsistence fishing is not an activity the desert Southwest supports; however, measures should be taken to reduce the possibility of clopyralid and its manufacturing impurities entering surface water.

Dicamba

Dicamba is a selective broadleaf herbicide particularly effective on plants in the *Asteraceae* (composite) and *Fabaceae* (legume) families. It is moderately persistent in soil with a half-life of 1-6 weeks. Microbial metabolism is the primary mechanism of degradation and disappearance. Cooler temperatures and dry soil conditions reduce degradation rates. Dicamba is non-toxic to birds and bees, slightly toxic to mammals, fish and amphibians, and does not bioaccumulate. Long-term exposure to dicamba has been associated with reproductive and possibly neurotoxic effects in laboratory animals, however the risk assessment suggests no plausible or substantial effects to terrestrial or aquatic animals should be anticipated under Forest Service application scenarios (SERA 2004a).

The manufacturing process for dicamba has the potential to result in trace amounts of 2,7-dichlorodibenzo-p-dioxin as a contaminant. It may be present in concentrations up to 50 parts per billion. The dioxin isomer 2,3,7,8-tetra-chlorodibenzo-p-dioxin (an ingredient in Agent Orange) has not been found at the limit of detection (2 parts per billion) and is not expected as an impurity in dicamba (USDA FS 2005b as amended).

The use of dicamba may involve levels of exposure to workers and members of the public that are of concern. At the typical application rate, applicator exposures are below the threshold of concern, but at the maximum application rate exposure would exceed the threshold of concern. Members of the public could be at some risk at the typical application rate only in the event of the worst-case accidental exposure involving children. It would take multiple sources of exposure to exceed the acute threshold of concern for adults at the typical application rate but at the highest application rate, the consumption of contaminated vegetation alone would exceed the threshold (SERA 2004a).

For terrestrial vertebrates, some acute exposure scenarios but no chronic exposure scenarios exceed the level of concern but only at the highest application rate. At the typical application rate, no adverse effects on mammals or birds are plausible for either acute or chronic exposures. There is little basis for asserting adverse effects would be expected in terrestrial insects or soil microorganisms. The very limited data in insects suggest that no lethal effects are likely in a

direct spray and there are no data on sublethal effects. At the highest application rate, transient effects might be seen in some populations of soil microorganisms. Risk characterization for aquatic species is limited by a lack of information on chronic toxicity but there is little basis for asserting that adverse effect to aquatic animals are plausible (SERA 2004a).

Dicamba is an effective herbicide and even some tolerant plants that are directly sprayed at normal application rates are likely to be damaged. The greatest risks are associated with runoff and that risk is highly site specific. Where groundcover and soil conditions are conducive to runoff, some sensitive plant species could be affected off-site. Damage associated with drift is possible with boom spray application methods and to a lesser extent backpack spray applications. These effects would likely be limited to about 100 feet. Vapor exposures to off-site vegetation could also cause damage. While this cannot be well quantified, it is likely that this effect would be less pronounced with the Vanquish formulation than with Banvel. Unlike the risk assessment for aquatic animals, the risk characterization for aquatic plants is based on relatively consistent and standard toxicity data. At the typical application rate, adverse effects in aquatic plants are not likely. At the maximum application rate, there could be transient effects in some sensitive species (SERA 2004a).

Endothall

Endothall is registered for aquatic and terrestrial applications. Only the aquatic applications are covered in the current Forest Service risk assessment. It is labeled for a variety of aquatic weeds including but reed, coontail, water stargrass, *Hydrilla sp.*, *Hygrophila sp.*, *Naiad sp.* and various species of pondweed (*Potamogeton spp.*). Some formulations are also labeled for the control of some algae and *Elodea sp.* (water weed). Endothall is a contact herbicide that should only be applied after plants emerge. The half-life of endothall in water appears to be 5-6 days depending on oxygen status and microbial activity in the water, but the EPA uses a half-life of 30 days for their drinking water assessment (SERA 2009a).

Endothall inhibits an enzyme that regulates protein synthesis. Protein synthesis plays a central role in normal cellular function. In mammals, damage to the liver and nervous system have been demonstrated and lethality has been demonstrated by ocular exposure in rabbits. It is also corrosive. Direct tissue damage has been consistently noted by all routes of exposure: gastrointestinal damage on oral exposure, skin irritation on dermal exposure, eye damage on ocular exposure, et cetera. However, not all mammals respond to the same degree; dogs appear to be more than 4 times sensitive than rats (SERA 2009a).

However, the Forest Service risk assessment for human health is limited to EPA documents only as most of the studies supporting its registration have not been made available to the public. High application rates may result in exposure levels that exceed the threshold of concern for both applicators and the general public. For the general public, only those scenarios involving the consumption of contaminated water exceed the threshold. Aggressive mitigation to reduce the possibility of human exposure after an accidental spill would be justified, although it seems extremely unlikely that individuals would drink contaminated water, which would be stagnant and polluted with putrid vegetation (SERA 2009a).

In standing water, oxygen depletion may occur in any application of aquatic herbicide because of the decay of plant matter (SERA 2009a). Oxygen depletion can suffocate fish. This can be mitigated by taking the dissolved oxygen content of the water, the density of the target vegetation

and the amount of the waterbody requiring treatment into consideration. Treating smaller areas several days apart may be necessary.

Fluazifop-P-Butyl

Fluazifop-P-butyl is a selective post-emergence herbicide used to control grasses. It is relatively non-toxic to broadleaf plants as well as monocots that are not classified as true grasses (not in the *Gramineae* or *Poaceae* families).

Based on acute assays for systemic toxicity, fluazifop-P-butyl is relatively non-toxic to mammals, including humans, and is not likely to cause skin or eye irritation. However, some formulations contain other ingredients that may cause slight eye and moderate skin irritation. Some formulations may cause skin sensitization after repeated or prolonged exposures. Chronic and subchronic studies in dogs, hamsters and rats show the most common effects to be decreases in body weight gain and increases in liver weight, without reports of liver cell death. However, there is a wide diversity of endpoints in the chronic studies ranging from adrenal and thymus changes in dogs, testicular or ovarian changes accompanied by liver inflammation and cataracts in hamsters, and kidney damage and ovarian cysts with increased mortality in rats. The EPA discussion notes that the colony of dogs used in the chronic studies may have had pre-existing health issues that contributed to their responses (SERA 2014c).

Fluazifop-P-butyl has not been specifically tested for effect on the nervous or immune system but because of changes in the EPA registration requirements, these types of studies are likely to be conducted in the future. Based on currently available information, there is no evidence to suggest this herbicide is likely to cause direct damage to the nervous or immune system. It has been identified as a teratogen, which is a compound that causes birth defects, but it is classified as not likely to be carcinogenic to humans with no mutagenic potential. All formulations contain petroleum distillates, hydrocarbons or xylene range aromatic solvents, which are potential neurotoxins (SERA 2014c).

Based on toxicity values and central estimates of exposure, applicators involved in boom spray application do not appear to be at risk, but backpack workers could be exposed to risk above the level of concern. Measures to limit or otherwise mitigate worker exposures are warranted. For the general public, the extreme accidental spill scenario involving consumption of contaminated water is likely to exceed the level of concern. The level of concern is also exceeded for the exposure scenario involving consumption of contaminated vegetation where multiple applications have occurred. Long-term exposure through consumption of contaminated vegetation is a much larger concern (SERA 2014c).

Fluazifop-P-butyl is classified by the EPA as *practically non-toxic* to birds and terrestrial invertebrates and *slightly toxic* to mammals; however, it is classified as *very highly toxic* to fish and aquatic invertebrates. No information is available to assess toxicity to reptiles or amphibians. The Fusilade Max formulation appears to be more toxic to honeybees than other formulations (SERA 2014c).

Fluridone

Fluridone is an aquatic herbicide particularly effective for sensitive target species such as Eurasian watermilfoil and *Hydrilla sp.* At sufficiently high doses, fluridone is associated with changes in the liver, reduced body weight and reduced food consumption. There is no evidence that it causes birth defects or results in reproductive changes, but it is associated with an increased

incidence of fetal mortality. It does not appear to be carcinogenic, mutagenic, have neurotoxic effects or impair immune or endocrine function. Over the range of labelled application rates, adverse effects are likely to sensitive non-target aquatic plants and algae, and some tolerant non-target aquatic plants may be damaged. Tolerant species of algae are not likely to be affected even at the maximum application rate. Under normal conditions, there is no basis for asserting that toxic effects are plausible in humans, terrestrial animals or aquatic animals. In the accidental spill scenario, fluridone concentrations could exceed the level of concern in some instances.

In standing water, oxygen depletion may occur in any application of aquatic herbicide because of the decay of plant matter (SERA 2009a). Oxygen depletion can suffocate fish. This can be mitigated by taking the dissolved oxygen content of the water, the density of the target vegetation and the amount of the waterbody requiring treatment into consideration. Treating smaller areas several days apart may be necessary.

Fluroxypyr

Fluroxypyr is a selective post-emergent systemic herbicide for the control of broadleaf weeds. It is structurally similar to aminopyralid, clopyralid, picloram, and triclopyr; and acts by mimicking a plant growth hormone. Fluroxypyr is more toxic to broadleaf plants than to grasses and other monocots. It should only be applied when weeds are actively growing. Although it is not a new herbicide, there is not much information related to human health effects aside from that supporting its registration (SERA 2009b).

Kidney damage in experimental mammals is the most common direct effect associated with high levels of exposure to fluroxypyr. Its effects on the endocrine system have not yet been tested due to a lack of specific protocols (SERA 2009b). Fluroxypyr also includes naphthalene and 1-Methyl-2-pyrrolidinone. Naphthalene is petroleum derivative registered as an insecticide and insect repellent. Toxicology data for 1-Methyl-2-pyrrolidinone was reviewed by the EPA and was determined that reasonable certainty existed that no harm would result from its inclusion in fluroxypyr formulations (SERA 2009b).

With regard to human health, all exposure scenarios for both applicators and the general public are below the threshold of concern, except the accidental spill scenario involving subsistence populations consuming fish. This scenario is highly unlikely as subsistence fishing is not an activity the desert Southwest supports; however, measures should be taken to reduce the possibility of fluroxypyr and its manufacturing impurities entering surface water.

The EPA has classified fluroxypyr as *practically nontoxic* to birds and mammals and all the Forest Service exposure scenarios are well below the threshold of concern for terrestrial animals. There is very little information about toxicity to insects. There is little indication that fluroxypyr poses a hazard to most aquatic animals. It is classified as slightly toxic to practically non-toxic to fish and most aquatic crustaceans, but studies in Eastern oysters indicated it is highly toxic to that species. Studies on freshwater bivalves and other saltwater bivalves are not available but in the absence of information, it is reasonable to assume that fluroxypyr may be highly toxic to bivalves and other molluscs (SERA 2009b). It will act on aquatic vegetation, with the ester more likely to cause damage than acid forms. All of the EPA aquatic toxicity classifications are based on acute exposures. As the herbicide is relatively insoluble in water and rapidly degrades, they determined chronic exposures are not likely (SERA 2009b).

In terms of non-target and/or off-site effects to plants, high boom ground broadcast applications has the highest risk with hazard quotient values above the threshold of concern for distances up to 900 feet downwind of the application site. Low boom applications exceed the threshold of concern for distances up to 500 feet, depending on droplet size. Backpack applications and other direct application methods are likely to present the lowest risk.

Glyphosate

Glyphosate is a broad spectrum, non-selective herbicide that will act on any plant it comes into contact with by inhibiting amino acid synthesis. Some formulations are registered for aquatic use (for example Rodeo) while others are not (for example Roundup). The differences between those formulations registered for aquatic use and those that are not is in the adjuvants sold for use with glyphosate, some of which may be toxic to aquatic species and some, which are non-toxic.

Glyphosate is metabolized by some plants, while others do not break it down. The chemical remains in the soil unchanged for a varying length of time depending on soil texture and organic matter. It is strongly adsorbed by organic matter and clay particles, which prevents leaching and renders the chemical biologically unavailable. It is not absorbed by plant roots, it must come into contact with above-ground portions of the plant.

It is primarily degraded to carbon dioxide by soil microorganisms, but being strongly adsorbed to soil particles can inhibit microbial degradation. The half-life of glyphosate in terrestrial environments can range from several weeks to years, but averages two months. In water, it is strongly adsorbed to sediments, both suspended in the water column, and those on the bottom of the water body and has a half-life of 12 days to 10 weeks.

The risk characterization for both workers and members of the general public are reasonably consistent and unambiguous. For both groups, there is very little indication of any potential risk at the typical application rate. Even at the upper range of plausible worker exposures, the threshold of concern is below the level of concern. For members of the general public, none of exposure scenarios even approach the level of concern except in the extreme accidental spill scenario involving consumption of contaminated water (SERA 2011b). Despite the absence of plausible risk to human health, recent jury decisions have elevated attention to glyphosate.

The EPA risk assessments and the glyphosate registration have been reviewed (US EPA 2017 and 2019). Conclusions remain that the “glyphosate is not likely to be carcinogenic to humans...[and] no other meaningful risk to human health when the product is used according to the pesticide label” (US EPA 2019). They did not find “suggestive evidence of carcinogenic potential...based on the weight-of-evidence...Even small, non-statistically significant changes were contradicted by studies of equal or higher quality” (US EPA 2017). These findings are consistent with those of other regulatory bodies such as the European Food Safety Agency, the German Federal Institute of Risk Assessment, and the Canadian Pest Management Regulatory Agency, among several others.

The only agency in the world that has not reached the conclusion that there is no association between glyphosate and cancer or cancer risk is the International Agency for Research on Cancer, a branch of the World Health Organization. The assessment that led to a classification of “probably carcinogenic to humans” (WHO IARC 2015) was a hazard assessment, not a risk assessment. Hazard assessments evaluate the potential for harm without giving consideration to the levels of exposure that humans will actually experience. As a result, the State of California

has proposed to require all glyphosate products to be labeled as “a chemical known to the state of California to cause cancer.” This proposal has been challenged in court and is not supported by the EPA. The EPA asserts this is a false and misleading claim that does not meet the labeling requirements of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

Despite the weight-of-evidence that suggests no significant human health risks exist, there are ecological risks. At typical Forest Service application rates, all of the acute exposure scenarios are below the threshold of concern for birds, mammals, fish and invertebrates. At the highest application rate, acute exposure exceeds threshold of concern for honeybees that come into direct contact with the herbicide, for large mammals consuming treated vegetation, and for small birds consuming insects (SERA 2011b). All the longer-term scenarios involve the consumption of contaminated vegetation, which is not likely because the vegetation would be dead and far less palatable than live vegetation.

The primary risk to fish appears to be acute exposure to formulations not registered for aquatic use. At the typical application rate, the threshold of concern is not reached, but at the upper application rate and under the worst-case scenario (7 inches of precipitation over the treated area within a 24-hour period), the threshold is exceeded (SERA 2011b). This risk characterization strongly suggests that the use of glyphosate formulations not registered for aquatic use near water is not prudent.

Hexazinone

Hexazinone is a broad-spectrum herbicide used in the control of broadleaf herbaceous plants, some grasses and some woody species. It works by inhibiting photosynthesis. In non-susceptible plants, it is metabolized into less phytotoxic compounds. It is absorbed through the roots and the foliage of the plant and best results are obtained for herbaceous species when the soil is moist. Larger woody species are best controlled by injection, hack and squirt or cut stump techniques.

Hexazinone is water-soluble, does not bind strongly to soils, and so is of particular concern for groundwater quality. It can enter surface water through runoff or subsurface flow. It can persist in soils and aquatic systems for some time, with an average half-life in soil of 90 days (Tu et al. 2001), but it can sometimes be found in runoff up to six months after application. Microbial metabolism is the primary mechanism of degradation but sunlight also degrades hexazinone. The chemical breakdown of hexazinone leads to eight different metabolites, only one of which known to be toxic to plants and at one percent of the toxicity of hexazinone (Tu et al. 2001).

Although it is of relatively low toxicity to birds and mammals, it can cause severe and irreversible eye damage and is slightly toxic if ingested. Chronic toxicity is not apparent. Despite its relatively low toxicity, legal application rates can leave residues that exceed the EPA’s level of concern for aquatic and terrestrial plants and small mammals. The technical grade of hexazinone is only slightly toxic to fish, but a couple formulations have been found to be of extremely low toxicity (USDA FS 2005b as amended). Regardless of formulation, it does not bioaccumulate in fish (USDA FS 2005b as amended), which suggests it likely does not bioaccumulate in other wildlife. It is however, toxic to algal species. Effects to non-target vegetation off-site are most likely in porous soils with low levels of organic matter under conditions conducive to runoff.

All of the risk assessment scenarios indicate workers could be exposed to hexazinone at levels that exceed the threshold of concern, with effects to the eyes, respiratory tract and skin. This can be avoided by good industrial hygiene during handling and application of the herbicide. Even

under extreme exposure scenarios, herbicide applicators are not likely to experience other toxic effects. In some accidental and extreme exposure scenarios, the general public could be exposed to levels about the threshold of concern but far below the level applicators could be exposed to (SERA 2005a).

Imazamox

Imazamox is labeled for the control of numerous terrestrial and aquatic weeds. It works by inhibiting an enzyme only found in plants and microorganisms. It does not cause detectable signs of toxicity in mammals, even at very high doses. All of the toxicity data come from studies submitted to the EPA in support of its registration (SERA 2010). In terms of the risk assessment, none of the exposure scenarios for workers or the general public approach the level of concern, even in extreme accidental spill scenarios. It also appears to be essentially nontoxic to terrestrial and aquatic animals. Some plant populations may develop resistance to imazamox, and other chemically similar herbicides, by developing less sensitive forms of the enzyme this herbicide inhibits (SERA 2010).

Imazapic

Imazapic is a selective herbicide for both pre- and post-emergent control of some grasses and broadleaf weeds. It works well on species such as leafy spurge and annual grasses. In general, plants in the *Brassicaceae* (mustard) family, leafy spurge and some cool-season perennial grasses, such as mountain brome, are susceptible to imazapic. Fall applications increase tolerance of cool-season grasses. Warm season grasses and plants in the *Asteraceae* (composite) and *Fabaceae* (legume) families are very tolerant. Woody species are generally tolerant due to poor uptake and translocation. It is essentially non-toxic to terrestrial mammals, birds, amphibians, aquatic invertebrates and insects and does not bioaccumulate (Tu et al. 2001, SERA 2004e). It has a half-life of 7 to 150 days depending on soil type and climatic conditions (Tu et al. 2001). Microbial metabolism is the primary mechanism of degradation.

Typical exposures to do not lead to estimated doses above the level of concern. For applicators, no exposure scenarios, acute or chronic, exceed the level of concern even at the highest application rate. For members of the general public, the upper limits for exposure are below the level of concern except for the extreme accidental spill scenario involving consumption of contaminated water. Based on the available information and under the foreseeable conditions of application, there is no route of exposure or scenario suggesting there is any substantial risk to human health (SERA 2004e).

Effects to non-target vegetation off-site are most likely to be the result of drift - within approximately 50 feet of the application site. Conditions conducive to runoff could result in damage to terrestrial or aquatic plants off-site, but it is not likely to be substantial (SERA 2004e).

Imazapyr

Imazapyr is a nonselective herbicide used to control a variety of grasses, broadleaf weeds, vines and brush species. Some formulations are registered for aquatic use. While imazapyr can be used in pre-emergence applications, the most common and effective applications are made when the vegetation to be controlled is growing vigorously. Similar to imazamox, there is no detectable level of toxicity in mammals and there is no evidence that adverse effects to terrestrial and aquatic animals could result from using imazapyr. However, it can cause severe and irreversible

eye damage. There are no exposure scenarios in the risk assessment where exposure would exceed the level of concern (SERA 2011a).

Imazapyr is strongly adsorbed in the top few inches of soil if the pH is 5 or less. At pHs above 5, less is adsorbed to the soils. It generally has a low potential for leaching to groundwater, but may reach surface water during storm events under conditions conducive to runoff. It is degraded by sunlight and microbial activity and has a half-life that ranges from one to five months in terrestrial environments. In arid environments, imazapyr could have residual activity on sensitive target or non-target plants lasting several months to several years. In areas of relatively high rainfall, residual activity would be much shorter. In aqueous environments, sunlight may reduce the half-life to two days. When applied to areas in which runoff is favored, damage from runoff appears to pose a greater risk to non-target vegetation than does drift. Non-target effects may also occur in aquatic environments.

Metsulfuron Methyl

Metsulfuron methyl is a pre- and post-emergence selective herbicide with effective control on plants in the *Brassicaceae* (mustard) and *Boraginaceae* (borage) families. It is water-soluble and can remain in the soil unchanged for varying lengths of time depending on the soil and moisture conditions. The half-life can range from 120 to 180 days with the primary means of degradation being microbial metabolism.

In experimental mammals, metsulfuron methyl has demonstrated low order toxicity. The most common sign of acute, subchronic and chronic toxicity is decreased body weight gain. The only other commonly noted effect involved changes in the blood. None of these changes suggests a clear or specific toxicity. There is speculation that the effects of metsulfuron methyl is related to saccharin, which is a metabolite of the herbicide. At very high doses, saccharin has caused changes in the blood in mice. There is no clear basis for suggesting that effects on humans, terrestrial or aquatic animals or insects are likely or would be substantial. All of the exposure scenarios for applicators and the general public are below the level of concern (SERA 2005b).

Metsulfuron methyl is an effective and potent herbicide. Adverse effects on some non-target terrestrial plant species, and to a lesser degree, some aquatic plant species are plausible unless measures are taken to limit exposure. The typical Forest Service application rate is over 800 times higher than the level of no observable adverse effect in the direct spray assay of the most sensitive non-target species and 8 times high for the most tolerant species. Effects could be observed up to 500 feet from the application site with boom spray applications. This distance could be substantially reduced using other application methods less subject to drift but the reduction cannot be quantified. Off-site movement through runoff could be substantial in those areas where conditions are conducive to runoff, even where total annual precipitation is less than 15 inches a year. Wind erosion and deposition off-site could also impact non-target plants, although the plausibility of observing such damage would be highly dependent on local conditions. Damage to aquatic plants would be possible, but effects would be transient as metsulfuron methyl degrades quickly in water.

Picloram

Picloram generally affects members of the *Asteraceae* (composite), *Fabaceae* (legume), *Polygonaceae* (knotweed/smartweed/buckwheat), and *Apiaceae* (carrot/parsley) families. Members of the *Brassicaceae* (mustard), *Liliaceae* (lily) and *Scrophulariaceae* (figwort) families are less affected. The selectivity of picloram is rate and season dependent (SERA 2011c).

Picloram can control weeds for two to four growing seasons depending on the weed biology and site conditions as it can stay active in the soil for relatively long periods of time. The half-life can vary from one month to three years (Tu et al. 2001).

As picloram doesn't bind strongly with soil particles and is not rapidly degraded in the environment, it has the potential to be highly mobile in runoff and subsurface flow. Soils with high clay content or organic matter increase adsorption rates and picloram's leaching capacity is reduced. It is water-soluble and is degraded by microbial metabolism and chemical reactions induced by sunlight and water, with the primary end product being carbon dioxide. Degradation reactions induced by sunlight are most rapid in clear, moving water (Tu et al. 2001) with some studies showing a half-life of a few days. The persistence of picloram in soil with increasing application rates or soil concentrations suggests picloram is toxic to some soil microorganisms, but no field studies linking adverse effects with detectable adverse impacts to soil productivity have been encountered (SERA 2011c).

The toxicity of picloram is characterized relatively well by a series of standard studies with rats, mice, dogs, rabbits and guinea pigs. Acute exposures generally demonstrate low toxicity, with some formulations causing skin sensitization in guinea pigs. Longer-term studies show effects on the liver and kidneys, with the liver being affected by lower doses than the kidneys. Picloram itself is not carcinogenic, but technical grade picloram contains hexachlorobenzene as a manufacturing contaminant, which is classified as a potential human carcinogen. There have also been some concerns expressed that picloram may act synergistically with 2,4-D or other ingredients to cause chronic toxicity effects on mammals (SERA 2011c).

Although there is some evidence that high concentrations of picloram and fat soluble formulations of 2,4-D (esters), the effect is additive, not synergistic. Both herbicides are rapidly excreted by the body in unchanged form, reducing the risk of their interaction. Formulations containing picloram and 2,4-D esters are not used by the Forest Service, which is noted in the risk assessment (SERA 2011c). With respect to hexachlorobenzene, the EPA placed a requirement on the manufacturers of picloram that their products contain no more than 100 parts per billion. The manufacturer of Tordon has set its' own limit at 50 parts per billion. Given a dilution factor of 350 for spray applications, the residues of picloram contain no more hexachlorobenzene than background environmental concentrations (USDA FS 2005b as amended).

Given that studies in other mammals are the basis for determining human health hazards, risk characterization for mammalian wildlife species is similar to human risk. While there are several studies conducted on birds that suggests harm to chicks (Hoffman and Albers 1984 IN SERA 2011c; Mach 2002 IN SERA 2011c; Somers and others 1978 IN SERA 2011c), exposures were far higher than would be plausible given the typical application rates used in Forest Service programs (SERA 2011c). The EPA classifies picloram as practically non-toxic to birds in terms of acute exposures. Longer-term studies are limited to the Somers study. No directly applicable information is available for describing hazards to reptiles, amphibians, honeybees or other terrestrial insects. A study on the brown garden snail (*Helix aspersa*) found that picloram did not increase mortality (SERA 2011c).

Picloram does not appear to be highly toxic to fish, amphibians and aquatic invertebrates, but it is not benign. It can be lethal at very high concentrations. Studies conducted on fish reveal variable hazards depending on species, size and/or life stage and environmental pH. Of the species tested, cutthroat and lake trout appear to be the most sensitive and fathead minnow the least. Very little information is available about sublethal toxicity in fish. Some pellet formulations may contain an

inert ingredient that reduces the bioavailability of picloram, and thus its potential toxicity in the aquatic environment. Aquatic species of plants and algae vary in their sensitivity but the data are limited (SERA 2011c).

Based on exposure scenarios, the central estimate is below the level of concern for fish, aquatic invertebrates and aquatic plants. At the upper bounds, the threshold of concern is exceeded for sensitive species of fish and algae. In the event of an accidental spill, substantial mortality would be likely in sensitive species. Risks to terrestrial animals are less certain. Exposures of terrestrial animals to contaminated water do not lead to apparent risks even in the extreme accidental spill scenario. For contaminated vegetation or prey, none of the central estimates of exposure exceeds the threshold of concern. At the maximum anticipated application rate, there is an acute exceedance of the threshold for small mammal consuming grasses. For longer-term scenarios involving the consumption of grasses, the level of concern is exceeded for small and large mammals and small birds. At the typical application rate, all of the hazard quotients for small mammals and birds are below the level of concern. Risks to terrestrial invertebrates appear minimal and there is uncertainty associated with the limited available data (SERA 2011c).

Like most effective herbicides, picloram poses the greatest risks to terrestrial plants. For sensitive species, particularly some dicots, the hazard quotient exceeds the level of concern for direct contact. Runoff and wind erosion scenarios do not indicate substantial effects to tolerant vegetation are plausible, but where site conditions are conducive to runoff, sensitive species may be impacted. Picloram should be applied with care to limit non-target effects, both on and off-site. Resistance to picloram has been observed in some subpopulations of yellow starthistle (SERA 2011c).

Sulfometuron Methyl

Sulfometuron methyl is a broad spectrum, non-selective herbicide but it is more selective than glyphosate and is useful in controlling weedy grasses, particularly cheat grass. Native grass seeding should follow sulfometuron methyl treatments within a year to prevent re-establishment of cheat grass (USDA FS 2005 as amended). It also has activity on broadleaf weeds and woody tree species. It works by blocking the production of three amino acids needed for growth. It may also have the same inhibitory effect on many fungi and bacteria.

It is generally active in soil and is broken down by microbes and chemical reactions induced by sunlight and water, although it has an inhibitory effect on some microbes as previously stated. It is more strongly adsorbed to acidic soils and soils with high organic matter content than to alkaline soils or those with low organic matter content. Carbon dioxide is the major metabolite and it is insoluble in water. It has a half-life of 20 to 30 days (USDA FS 2005b as amended). There is potential for it to leach, but due to its very low application rate in Forest Service programs, there is little potential for contamination of groundwater.

Based on experimental studies in mammals, sulfometuron methyl demonstrates a low order of acute toxicity. The most common signs of toxicity involve changes in the blood consistent with anemia and decreased body weight gain. It is plausible that the anemia caused by sulfometuron methyl is at least partially attributable to sulfonamide and saccharin, which are metabolites of sulfometuron methyl. Tests have provided no evidence that the herbicide causes malformations or cancer, but there is some concern about the potential for reproductive harm and birth defects, although the dose-response relationships are not statistically significant (SERA 2004d).

In general, applicators will be exposed to sulfometuron methyl at higher levels of exposure than members of the general public and will be subject to greater potential risk. At the higher application rates and highest number of acres treated per day, applicators are likely to be exposed to levels of the herbicide that exceed the threshold level. At lower application rates and with fewer acres treated per day, exposure can be kept below the threshold of concern. Regardless, the potential of sulfometuron methyl to induce reproductive effects or fetal abnormalities suggest that it would be prudent for pregnant women to avoid working with this chemical. For the general public, none of the exposure scenarios reach the threshold of concern except in the extreme accidental spill scenario involving drinking contaminated water (SERA 2004d).

The concerns with sulfometuron methyl and effects to non-target vegetation are very similar to those described for metulfuron methyl except sensitive aquatic plants may be more susceptible to damage by sulfometuron methyl. Compared with the potential effects to non-target vegetation, the risk characterization for terrestrial and aquatic animals is of less concern. The weight-of-evidence suggests that observable effects are not expected under most conditions of use. Nonetheless, the possibility of adverse reproductive effects in some potentially sensitive species cannot be dismissed based on the available data. For aquatics, the risk characterization is unambiguous – there is no evidence that concentrations in the range of those likely to be found in water after any plausible application or spill will cause adverse effects in fish or aquatic invertebrates (SERA 2004d).

Tebuthiuron

Tebuthiuron is a soil active herbicide, which is it is intended to be applied to soil, not to foliage. It is primarily used to control woody vegetation such as juniper. The herbicide is taken up by plant roots and acts by inhibiting photosynthesis. It is considered a non-selective herbicide, but dicots appear to be somewhat more sensitive than monocots. Tebuthiuron binds strongly to soils and is more persistent and more effective in soils with low organic matter (SERA 2016a). It seems logical to assume that the same general pattern would be true of clay content, as organic matter and clay particles both have adsorptive properties but the strength of the relationship is not directly discussed in the risk assessment.

Based on standard laboratory studies, tebuthiuron's acute effects are classified moderately to slightly toxic to humans and other mammals when ingested, slightly toxic when inhaled and practically non-toxic for dermal and ocular exposure. Longer-term exposures do not appear to be neurotoxic, immunotoxic, carcinogenic or mutagenic. However, there is some uncertainty associated with the EPA classification of "not classifiable as to human carcinogenicity". The EPA determined the carcinogenicity testing in mice and rats were "unacceptable", but waived requirements for additional studies, apparently accepting the rat study as being adequate for assessing cancer risk (SERA 2016a).

The most common signs of toxicity are decreased body weight, decreased weight gain, and decreased food consumption. Slight changes in some pancreatic cells were observed in rats, but have not been linked with increased blood glucose levels. Effects to pancreatic cells has not been observed in other laboratory species. High doses were associated with an increase in fetal deaths and a decrease in fetal weights in rabbits. The rabbit studies were used as the basis for the acute reference dose (SERA 2016a).

None of the non-accidental exposure scenarios for workers exceed the threshold of concern with one exception. The upper bound estimate for backpack applicators modestly exceeds the level of

concern, but given the endpoint for women of childbearing age involves early fetal death, extreme caution is warranted with applying tebuthiuron. It would be prudent for women of childbearing age to avoid applying tebuthiuron. For the general public, no granular applications exceed the level of concern, but this is not the case for liquid applications. Consumption of contaminated vegetation following the upper bounds of liquid applications exceeds the level of concern for a young woman of childbearing age. While upper bounds exceedances should be viewed as possible, they are not typical. Several of the accidental exposures exceed the level of concern for both applicators and the general public. If accidents occur, sensible steps should be taken to mitigate the exposure and ensure exposed individuals receive prompt and effective medical care. As with non-accidental exposures, women of childbearing age are the most sensitive group (SERA 2016a).

Based on acute toxicity studies, the EPA classifies tebuthiuron as *practically non-toxic* to non-passerine birds, honeybees, fish and aquatic invertebrates, *slightly toxic* to passerine birds, and *moderately toxic* to mammals. The bird studies are more limited than the mammal studies, but the effects associated with exposure are similar – decreased weight gain and reproductive effects. Hazards to algae are species dependent, with some species being more tolerant than others. Aquatic plants are less susceptible to adverse effects than terrestrial vegetation but studies are limited to species of duckweed. No data are available for reptiles and amphibians. At expected environmental concentrations, no damage to soil microorganisms is expected. (SERA 2016a).

Given the primary use of tebuthiuron is for the control of woody species, increasing grass cover has frequently been cited as an indirect effect of tebuthiuron applications. However, tebuthiuron has been used to control some species of grasses and reduced cover in some non-target grasses such as western wheatgrass and prairie June grass has been documented (SERA 2016a). Some studies have highlighted that decreases in woody canopy cover can provide the competitive advantage to grasses and other herbaceous species, but those species may not be desirable. In particular, studies in sagebrush systems have demonstrated an increase in cheatgrass following tebuthiuron treatments, where cheatgrass was present prior to herbicide application (Blumenthal et al. 2006).

Increases in grasses relative to woody plants are associated with changes in feeding patterns and preferences in both rodents (McMurry et al. 1993b IN SERA 2016a) and cows (Kirby and Stuth 1982 IN SERA 2016a; McDaniel and Balliet 1986 IN SERA 2016a; Scifres and others 1983 IN SERA 2016a) but those changes are not associated with adverse effects to those species (SERA 2016a).

Based on exposure scenarios, the hazard quotients for non-target vegetation are not remarkably high as the maximum application rate for Forest Service programs is relatively low. For tolerant species, all the exposure scenarios are below the threshold of concern. The most substantial non-target impact of tebuthiuron is to algae, when applications are made near surface water. Risk characterization for mammalian wildlife and birds depends on the formulation applied. The risk is minimal with granular formulations, as this will lead to lower concentrations of tebuthiuron in vegetation, the major route of exposure. For liquid formulations, risks to sensitive species of mammals and birds could substantially exceed the level of concern. Risks to terrestrial invertebrates appear to be unlikely. Similar to picloram and imazamox, herbicide resistance is a concern with tebuthiuron. Evidence of resistance has been documented in species belonging to the *Amaranthaceae* (amaranth) and potentially the *Poaceae* (grass) families (SERA 2016a).

Triclopyr

Triclopyr is a selective herbicide used to control woody and herbaceous dicots. It has little to no impact on grasses and other monocots. It is particularly effective at controlling woody species with cut-stump or basal bark treatments. Ester formulations are especially effective against root- or stem-sprouting species such as saltcedar, tree of heaven and Siberian elm.

There are two forms of the active ingredient, a salt and an ester. Differences in effects between the salt and ester formulations are likely related to differences in other ingredients, not the form of triclopyr itself. However, there are differences in environmental behavior between the salt and ester formulations that have relevance. The ester is easily evaporated and is best applied at cool temperatures on days with little to no wind. Salt formulations do not readily adsorb to soil and are water-soluble, and are therefore quite mobile. The ester formulations bind readily to soils with organic matter and/or clay content, are not water-soluble and are therefore less mobile. Both forms rapidly degrade to triclopyr acid through microbial metabolism and chemical reactions induced by sunlight and water. It has an intermediate soil adsorption capacity, which logically translates to an intermediate leaching potential. There is a wide range of reported half-lives for triclopyr acid. In soils, reports range from 2 hours to 314 days. In water, reports range from 2.8 to 14.1 hours (USDA FS 2005b).

Several formulations of the salt are labeled for aquatic applications. None of the ester formulations is registered for aquatic use. All of the ester formulations contain varying amounts of petroleum derivatives, including kerosene and ethanol. Dow AgroSciences has indicated that kerosene will be phased out of triclopyr formulations sold under the trade name Garlon 4 and replaced with a de-aromatized hydrocarbon distillate; however as of the date of the most current risk assessment, no new batches had been manufactured and no new Material Safety Data Sheets had been released. Therefore, the risk assessment considers the toxicity of kerosene. Triclopyr has a metabolite of concern, which is 3,4,6-trichloro-2-pyridinol, also known as TCP. While there is little indication that TCP is a substantial risk to humans, it is more toxic than triclopyr itself to some aquatic organisms (SERA 2011d).

The toxicity of triclopyr acid is informed by numerous standard acute, subchronic and chronic toxicity studies, as well as developmental and reproductive studies. In mammals, the signs of toxicity that occur at the lowest doses involve developmental and reproductive effects. At high doses, triclopyr acid may damage the liver and kidneys, which at sufficiently high doses, may lead to death. Also at sufficiently high doses, birth defects can occur but only at doses that have toxic effects on the mother. No information suggests direct adverse effect on the nervous, endocrine or immune systems. Studies related to carcinogenicity were reviewed by the EPA, which determined the evidence that triclopyr acid is carcinogenic is marginal and did not recommend further assessment. With regard to petroleum derivatives, ethanol is not toxicologically significant. At sufficiently high doses, kerosene can cause many gastrointestinal, nervous system and liver effects. However, some of the same effects are observed in mammals given large doses of triclopyr formulations that do not contain kerosene; therefore kerosene is not likely to be toxicologically significant. (SERA 2011d).

In contrast to the other herbicides proposed for use, the risk assessment for triclopyr includes exposure scenarios supported by three studies of actual Forest Service application scenarios, including personal protective equipment. As a result, the upper bound estimates of exposures are greater by 2.7 for backpack applicators and 30 for boom spray applicators than they would be using standard protocol (SERA 2011d).

None of the exposure scenarios for aquatic applications of triclopyr present identifiable risks to humans. Exposures during terrestrial applications and the resultant risks are complex. At the typical application rate, the central estimates of the hazard quotients indicate applicators will not be subject to hazardous levels of triclopyr if using a salt formulation. Central estimates for ester applications indicate exposures approaching or slightly exceeding the threshold of concern. At the upper bounds of estimated exposures for both the salt and ester forms, the threshold of concern is exceeded but not substantially. For members of the general public, the only non-accidental exposure scenarios of concern involve the consumption of contaminated fruit or vegetation (SERA 2011d). Nevertheless, because triclopyr has been shown to cause adverse developmental effects in mammals, it is prudent for females of reproductive age to avoid exposure.

In terms of toxicity to animals, clear and consistent patterns indicate larger mammals and daphnids are the most sensitive. The EPA classifies triclopyr as *practically non-toxic to slightly toxic* to birds, with passerines potentially being the most sensitive. It is classified as *practically non-toxic* to bees, but some studies suggest the ester formulations may be moderately toxic to earthworms but at concentrations far higher than would occur in the environment. Based on the exposure scenarios, the ecological risk characterization parallels the human health risk assessment in many respects (2011d).

The level of concern is exceeded for exposures involving the consumption of contaminated vegetation, with large mammals being at greatest risk. This is consistent with the EPA risk assessment, but field studies neither support nor substantially refute these concerns, which introduces some uncertainty. With the exception of aquatic plants, risks associated with contamination of surface water are low. Acute risks to sensitive fish and aquatic phase amphibians could occur with ester formulations, depending on the application rate. The risk is least in areas with low rates of rainfall and highest with high rates of rainfall (2011d).

As previously described, triclopyr is effective in the control of dicots and relatively ineffective in controlling monocots, at least in terms of foliar application. Pine, an important group of non-target plant species, tends to be tolerant to triclopyr exposures after fall dormancy, but more sensitive during spring and summer (Radosevich et al. 1977 IN SERA 2011d). A 1999 publication by Newmaster and others (as cited in SERA 2011d) provides a plausible basis for concern that triclopyr exposure may have long-term impacts on bryophyte and lichen communities. Anecdotal reports from the Forest Service suggest that volatilization of triclopyr may damage non-target plants if ester formulations are applied under a poorly ventilated canopy and high temperatures. For those formulations registered for aquatic use, damage to aquatic vegetation could be substantial and result in temporary but possibly severe oxygen depletion (SERA 2011d). Oxygen depletion can suffocate fish. This can be mitigated by taking the dissolved oxygen content of the water, the density of the target vegetation and the amount of the waterbody requiring treatment into consideration. Treating smaller areas several days apart may be necessary.