Draft Plan Location	Original Text	Updated Plan Location	Revised Text	Rationale	Revision Need
CH. 1 -- Need for Changing the 1987 Forest Plan -- Riparian Ecosystems	However, human alterations to the landscape, such as diversion of waterways, introduction of invasive plants, unauthorized **use by cattle**, and heavy recreational impacts are altering these systems.	CH. 1 -- Need for Changing the 1987 Forest Plan -- Riparian Ecosystems	However, human alterations to the landscape, such as diversion of waterways, introduction of invasive plants, unauthorized **grazing**, and heavy recreational impacts are altering these systems.	modified to address external comments.	Public comment
CH. 1 -- Distinctive Roles and Contributions of the Santa Fe National Forest	Elk, along with other hunted species such as deer and turkey, provide cultural connections to the Santa Fe NF as well as outstanding recreational opportunities and employment opportunities for outfitters and guides.	CH. 1 -- Distinctive Roles and Contributions of the Santa Fe National Forest	Elk, along with other hunted species such as **bighorn sheep**, deer and turkey, provide cultural connections to the Santa Fe NF as well as outstanding recreational opportunities and employment opportunities for outfitters and guides.	modified based on comments received	Public comment
CH. 1 -- Santa Fe National Forest Vision	We will be a leader, both in the forest and partnering on lands across northern New Mexico, in achieving three goals: (1) restore fire resiliency to our forest landscapes, (2) provide clean and abundant water, and (3) **connect people to the land and their heritage.**	CH. 1 -- Santa Fe National Forest Vision	We will be a leader, both in the forest and partnering on lands across northern New Mexico, in achieving three goals: (1) restore fire resiliency to our forest landscapes, (2) provide clean and abundant water, and (3) **honoring and strengthening ties to the land.**	modified based on conversation at public meeting, where it was pointed out to us that people from traditional communities do not need our help to connect to the land and their heritage -- they are already connected.	Public comment (not during comment period)
CH. 1 -- Forest Plan Implementation	Transition in the Implementation of the Draft Forest Plan	CH. 1 -- Forest Plan Implementation	Transition in the Implementation of the Forest Plan	The Forest Plan will no longer be a draft, so all instances of "Draft Forest Plan" or "Draft Plan" have had the "Draft" removed.	editorial
N/A	N/A	FW-VEG-DC-1f	Seral state proportions (per the 'Seral State Proportions for the Southwestern Region' supplement) are applied at the landscape scale, where contributions from all seral stages and low overall departure from reference proportions are positive indicators of ecosystem condition.	Added regional desired conditions so vegetation section is strengthened to be more objective, consistent, comprehensive.	Regional Office and public comment
N/A	N/A	FW-VEG-DC-1g	At the scale of the plan unit, overall plant composition similarity to site potential (FSH 2090.11) averages greater than 66%, but can vary considerably at the mid- and fine- scales owing to a diversity of seral conditions.	Added regional desired conditions so vegetation section is strengthened to be more objective, consistent, comprehensive.	Regional Office and public comment
FW-VEG-DC-3	The ecological attributes and processes that provide habitat for native biota and/or historic and cultural values are maintained.	FW-VEG-DC-3	The ecological attributes and processes that provide habitat for native biota and/or historic and cultural values are maintained, **enhanced, and restored.**	Addition based on comments received.	Public comment
FW-VEG-DC-3a	A diversity of vegetation exists with a mosaic of cover types and stand structures forming a healthy, resilient landscape that provides for genetic exchange, daily and seasonal movements of animals, including inter-specific interaction at all trophic levels, (e.g., producer-consumer and predator-prey interactions) across multiple spatial scales, consistent with existing landforms and topography.	FW-VEG-DC-3a	A diversity of vegetation exists with a mosaic of cover types and stand structures forming a healthy, resilient landscape that provides for genetic exchange, **habitat connectivity for** daily and seasonal movements of animals, including inter-specific interaction at all trophic levels, (e.g., producer-consumer and predator-prey interactions) across multiple spatial scales, consistent with existing landforms and topography.	Addition based on comments received.	Public comment
FW-VEG-DC-3b	Vegetation provides a sustainable supply of timber and forest products, such as firewood, piñon nuts, vigas and latillas, and forage, consistent with desired conditions for other resources.	FW-VEG-DC-3b	Vegetation provides a sustainable supply of timber and forest products, such as firewood, piñon nuts, vigas and latillas**, herbs,** and forage, consistent with desired conditions for other resources.	Addition based on comments received.	Public comment

N/A	N/A	FW-VEG-DC-3c	Habitats and refugia for rare, endemic, and culturally important species, are resilient to stressors and support species' persistence or recovery.	Addition based on comments received.	public comment
CH. 2 -- Vegetation -- Spruce Fir -- Narrative	N/A	CH. 2 -- Vegetation -- Spruce Fir -- Narrative	On the Santa Fe NF, SFF currently falls into fire regime condition class (FRCC) 2 and has a historic fire return interval of 200 to 400 years (SFNF Assessment 2016).	Added based on RO comment.	RO comment
FW-SFF-DC-1c	Old growth generally occurs over large areas as stands or forests. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts on the landscape over time as a result of succession and disturbance **(tree growth and mortality).**	FW-SFF-DC-1c	Old growth generally occurs over large areas as stands or forests. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts on the landscape over time as a result of succession and disturbance.	Removal based on comments received.	Public comment
CH. 2 -- Vegetation -- Mixed Conifer with Aspen -- Narrative	The mixed conifer with aspen forest (wet mixed conifer, MCW) vegetation community generally occurs at elevations ranging from approximately **6,500 to 10,000** feet.	CH. 2 -- Vegetation -- Mixed Conifer with Aspen -- Narrative	The mixed conifer with aspen forest (wet mixed conifer, MCW) vegetation community generally occurs at elevations ranging from approximately **9,000 to 11,000** feet.	Changed to match TEUI instead of assessment numbers.	Internal consistency
CH. 2 -- Vegetation -- Mixed Conifer with Aspen -- Narrative	Disturbances typically occur at two temporal and spatial scales: large-scale infrequent disturbances (primarily fire), and small-scale frequent disturbances (fire, insect, disease, wind). *This forest has an understory of a wide variety of shrubs, grasses, and forbs depending on soil type, aspect, elevation, disturbance, and other factors.*	CH. 2 -- Vegetation -- Mixed Conifer with Aspen -- Narrative	*This forest has an understory of a wide variety of shrubs, grasses, and forbs depending on soil type, aspect, elevation, disturbance, and other factors.* Disturbances typically occur at two temporal and spatial scales: large-scale infrequent disturbances (primarily fire), and small-scale frequent disturbances (fire, insect, disease, wind). **On the Santa Fe NF, MCW currently falls into fire regime condition class (FRCC) 2 and has a fire return interval of 35 to over 200 years (SFNF Assessment 2016).** This forest has an understory of a wide variety of shrubs, grasses, and forbs depending on soil type, aspect, elevation, disturbance, and other factors.	Added based on RO comment.	Internal comment
FW-MCW-DC-1c	Old growth generally occurs over large areas as stands or forests where the location shifts on the landscape over time as a result of succession and disturbance **(tree growth and mortality)**. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity.	FW-MCW-DC-1c	Old growth generally occurs over large areas as stands or forests where the location shifts on the landscape over time as a result of succession and disturbance. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity.	Removal based on comments received.	Public comment
FW-MCW-DC-3	At the mid-scale, the size and number of tree groups and patches vary depending on disturbance, elevation, soil type, aspect, and site productivity.	FW-MCW-DC-3	At the mid-scale, the size and number of tree groups and patches vary depending on disturbance, elevation, soil type, aspect, and site productivity **(e.g., reference conditions indicate patches of 100-400 acres).**	Increased specificity based on internal comment	Internal comment
CH. 2 -- Vegetation -- Mixed Conifer Frequent Fire -- Narrative	The mixed conifer-frequent fire (dry mixed conifer, MCD) forest vegetation community is transitional with increasing elevation between ponderosa pine and wet mixed-conifer forests and generally occurs at elevations ranging from approximately **6,000 to 9,500 fee**t.	CH. 2 -- Vegetation -- Mixed Conifer Frequent Fire -- Narrative	The mixed conifer-frequent fire (dry mixed conifer, MCD) forest vegetation community is transitional with increasing elevation between ponderosa pine and wet mixed-conifer forests and generally occurs at elevations ranging from approximately **8,500 to 10,500 feet, but can be found up to 11,100 feet**	Changed to match TEUI instead of assessment numbers.	Internal comment
CH. 2 -- Vegetation -- Mixed Conifer Frequent Fire -- Narrative	N/A	CH. 2 -- Vegetation -- Mixed Conifer Frequent Fire -- Narrative	Fires within this forest type were historically frequent (FRI- 5 to 21 years) and predominately low to mixed severity (Fire Regime Group 1). On the Santa Fe, at the plan scale MCD currently falls into fire regime condition class (FRCC) 3 (SFNF Assessment 2016).	Addded based on RO comments	Internal comment

FW-MCD-DC-1b	Groups of MCD vary in size (although typically small groups), shape, number of trees per group, and number of groups per area across the landscape, creating a mosaic of patchiness. Where they naturally occur, groups of aspen and all structural stages of oak are present.	FW-MCD-DC-1b	Groups of MCD vary in size (although typically small groups), shape, number of trees per group, and number of groups per area across the landscape, creating a mosaic of patchiness. Where they naturally occur, groups of aspen and all structural stages of oak **(e.g., Gambel oak)** are present.	added based on public comments	Public comment
FW-MCD-DC-1d	Old growth occurs throughout the landscape, generally in small areas as individual old growth components or as clumps of old growth. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts across the landscape over time as a result of succession and disturbance **(tree growth and mortality).**	FW-MCD-DC-1d	Old growth occurs throughout the landscape, generally in small areas as individual old growth components or as clumps of old growth. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts across the landscape over time as a result of succession and disturbance.	Removal based on comments received.	Public comment
CH. 2 -- Vegetation -- Ponderosa Pine -- Narrative	The PPF vegetation community generally occurs at elevations ranging from approximately **5,000 to 9,000 feet.**	CH. 2 -- Vegetation -- Ponderosa Pine -- Narrative	The PPF vegetation community generally occurs at elevations ranging from approximately **6,000 to 9,000 feet, with ponderosa occurring predominantly in draws and on pumicious soils at lower elevations.**	Align with TEUI	Internal comment
CH. 2 -- Vegetation -- Ponderosa Pine -- Narrative	This forest vegetation community typically occurs with an understory of grasses and forbs, although it sometimes includes shrubs.	CH. 2 -- Vegetation -- Ponderosa Pine -- Narrative	This forest vegetation community typically occurs with an understory of grasses and forbs, although it sometimes includes shrubs **when associated with certain, often rocky, soil types**.	Internal comment	Internal comment
CH. 2 -- Vegetation -- Ponderosa Pine -- Narrative	Other **trees**, such as Douglas-fir, white fir, blue spruce, Gambel oak, piñon pine, one-seed juniper, and Rocky Mountain juniper may be present.	CH. 2 -- Vegetation -- Ponderosa Pine -- Narrative	Other **woody species**, such as Douglas-fir, white fir, blue spruce, Gambel oak, piñon pine, **New Mexico locust**, one-seed juniper, and Rocky Mountain juniper may be present.	Internal comment	Internal comment
CH. 2 -- Vegetation -- Ponderosa Pine -- Narrative	N/A	CH. 2 -- Vegetation -- Ponderosa Pine -- Narrative	Fires within this forest type were historically frequent (FRI- 4 to 30 years) and predominately low to mixed severity (Fire Regime Group 1). On the Santa Fe, at the plan scale PPF currently falls into fire regime condition class (FRCC) 3 (SFNF Assessment 2016).	Added based on RO comment.	Internal comment
FW-PPF-DC-1b	Groups of PPF vary in size (although typically small), shape, number of trees per group, and number of groups per area across the landscape, creating a mosaic of patchiness. Where they naturally occur, in the Gambel oak sub-type, all structural stages of oak trees are present.	FW-PPF-DC-1b	b Groups of PPF vary in size (although typically small **(0.1 to 0.5 acre)**), shape, number of trees per group, and number of groups per area across the landscape, creating a mosaic of patchiness. Where they naturally occur, in the Gambel oak sub-type, all structural stages of oak trees are present	Clarified based on internal comment.	Internal comment
FW-PPF-DC-1d	Old growth occurs throughout the landscape, generally in small areas as individual old growth components or as clumps of old growth. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts across the landscape over time as a result of succession and disturbance. **(tree growth and mortality**).	FW-PPF-DC-1d	Old growth occurs throughout the landscape, generally in small areas areas **(e.g., less than 1 acre)** as individual old growth components or as clumps of old growth. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts across the landscape over time as a result of succession and disturbance.	Clarified based on internal comment. Pulled information from Covington and Moore 1994 Southwestern ponderosa pine forest structure: Changes since Euro-American settlement. Journal of Forestry 92(1): 39-47. Removal based on comments received.	Internal and public comment

CH. 2 -- Vegetation -- Pinon-Juniper Grass and Juniper Grass -- Narrative	The PJG type is typically found on sites with well-developed, loamy soil characteristics, including gentle upland and transitional valley locations, where soil conditions favor grasses (or other grass-like plants) and other understory plants. **Some savannahs apparently have sparse tree cover because of climatic limitations on woody plant growth, though tree growth is generally more productive within this ERU than in juniper grass.**	CH. 2 -- Vegetation -- Pinon-Juniper Grass and Juniper Grass -- Narrative	The PJG type is typically found on sites with well-developed, loamy soil characteristics, including gentle upland and transitional valley locations, where soil conditions favor grasses (or other grass-like plants) and other understory plants, **but still support at least some tree cover**.	Edited information based on the Assessment	internal comment
FW-JUG-DC-1c	Old growth occurs throughout the landscape, generally in small areas as individual old growth components, or as clumps of old growth. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts across the landscape over time as a result of succession and disturbance. **(tree growth and mortality).**	FW-JUG-DC-1c	Old growth occurs throughout the landscape, generally in small areas as individual old growth components, or as clumps of old growth. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts across the landscape over time as a result of succession and disturbance.	Removal based on comments received.	Public comment
CH. 2 -- Vegetation -- Pinon-Juniper Sagebrush -- Narrative	The tree and shrub species composition varies throughout the Forest; piñon is **occasionally** absent, but one or more juniper species are always present.	CH. 2 -- Vegetation -- Pinon-Juniper Sagebrush -- Narrative	The tree and shrub species composition varies throughout the Forest; piñon is absent **at lower elevations**, but one or more juniper species are always present.	Change based on internal comments	internal comment
FW-PJS-DC-2b	Old growth occurs throughout the landscape, generally in small areas, as individual old growth components or small clumps. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts on the landscape over time as a result of succession and disturbance. **(tree growth and mortality).**	FW-PJS-DC-2b	Old growth occurs throughout the landscape, generally in small areas, as individual old growth components or small clumps. Old-growth components include old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity. The location of old growth shifts on the landscape over time as a result of succession and disturbance.	Removal based on comments received.	Public comment
CH. 2 -- Vegetation -- Pinon Juniper Woodlands -- Narrative	Piñon-juniper woodlands (PJO) are mostly found on lower slopes of mountains and in upland rolling hills at approximately 5,300 to 10,000 feet in elevation. They have broad grouping of different plant associations with trees occurring as individuals or in smaller groups and range from young to old, but more typically as large, even-aged structured patches. PJO characteristically has a moderate to dense tree canopy and a sparse understory of perennial grasses, annual and perennial forbs, and shrubs.	CH. 2 -- Vegetation -- Pinon Juniper Woodlands -- Narrative	**Persistent** piñon-juniper woodlands (PJO) are mostly found on lower slopes of mountains and in upland rolling hills at approximately 5,300 to 10,000 feet in elevation. They have broad grouping of different plant associations with trees occurring as individuals or in smaller groups and range from young to old, but more typically as large, even-aged structured patches. **Persistent** PJO characteristically has a moderate to dense tree canopy and a sparse understory of perennial grasses, annual and perennial forbs, and shrubs.	Addition based on comments received.	Public comment
CH. 2 -- Vegetation -- Pinon Juniper Woodlands -- Narrative	Persistent piñon-juniper woodlands (PJO) are mostly found on lower slopes of mountains and in upland rolling hills at approximately **5,300 to 10,000** feet in elevation.	CH. 2 -- Vegetation -- Pinon Juniper Woodlands -- Narrative	Persistent piñon-juniper woodlands (PJO) are mostly found on lower slopes of mountains and in upland rolling hills at approximately **5,500 to 8,500** feet in elevation.	Changed to match TEUI instead of assessment numbers.	Internal comment
CH. 2 -- Vegetation -- Pinon Juniper Woodlands -- Narrative	They have broad grouping of different plant associations with trees occurring as individuals or in smaller groups and range from young to old, but more typically as **large, even-aged structured patches.**	CH. 2 -- Vegetation -- Pinon Juniper Woodlands -- Narrative	They have broad grouping of different plant associations with trees occurring as individuals or in smaller groups and range from young to old, but more typically as **large, multi-aged structured patches**.	Changed based on internal comment	internal comment
CH. 2 -- Vegetation -- Pinon Juniper Woodlands -- Narrative	N/A	CH. 2 -- Vegetation -- Pinon Juniper Woodlands -- Narrative	PJO is a climax community and shifts to grasslands following fire events, which are historically infrequent (e.g., up to 400 years). Currently at the plan scale, PJO is included in fire regime condition class (FRCC) 2 (SFNF Assessment 2016).	Added based on RO comment.	internal comment

FW-PJO-DC-2	Old growth includes old trees, dead trees (snags), downed wood (coarse woody debris) and structural diversity, and is often concentrated in mid- and fine-scale units as patches of old growth. The location of old growth shifts on the landscape over time as a result of succession and disturbance **(tree growth and mortality)**. Very old trees (over 300 years old) are present, while snags and older trees with dead limbs and/or tops are scattered across the landscape.	FW-PJO-DC-2	Old growth includes old trees, dead trees (snags), downed wood (coarse woody debris) and structural diversity, and is often concentrated in mid- and fine-scale units as patches of old growth. The location of old growth shifts on the landscape over time as a result of succession and disturbance. Very old trees (over 300 years old) are present, while snags and older trees with dead limbs and/or tops are scattered across the landscape.	Removal based on comments received.	Public comment
CH. 2 -- Vegetation -- Sagebrush Shrubland -- Narrative	Most of the varieties found in the forest include: **Basin (A. t. ssp. tridentata), mountain (A. t. ssp. vaseyana), and Wyoming (A. t. ssp. wyomingensis) big sagebrush. These varieties are important as each provide thermal cover and protection, including nesting cover and escape cover for wildlife (e.g., upland birds).**	CH. 2 -- Vegetation -- Sagebrush Shrubland -- Narrative	Most of the varieties found in the forest include: **big sagebrush (A. t. ssp. tridentata), mountain sagebrush (A. t. ssp. vaseyana), and Wyoming sagebrush (A. t. ssp. wyomingensis). These sagebrush varieties each create different communities, where big sage occurs in drainages, Wyoming dominates lower elevations, and mountain dominates higher elevations in SAGE communities. All sagebrush types are important, as each provide thermal cover and protection, (including nesting cover and escape cover) for various species of wildlife (e.g., upland birds).**	Change based on internal comments: These varieties create different communities which are used differently by wildlife. Big sage is in drainages, Wyoming dominates lower elevation, and mountain dominates higher elevation.	internal comments
CH. 2 -- Vegetation -- Sagebrush Shrubland -- Narrative	Sagebrush can also make up a significant forage and protein source for wildlife. Other common species include broom snakeweed, **shadscale (Atriplex confertifolia)**, and blue grama (Bouteloua gracilis).	CH. 2 -- Vegetation -- Sagebrush Shrubland -- Narrative	Sagebrush can also make up a significant forage and protein source for wildlife. Other common species include broom snakeweed, **winterfat (Krascheninnikovia lanata)**, and blue grama (Bouteloua gracilis).	Change based on internal comments: Winter fat is much more common here than shadscale. Shadscale is found at lower elevations in Arizona and Utah	internal comments
	SAGE sites are usually found on deep well-drained valley bottom soils **between 4,800 and 5,800 feet, with precipitation ranging between 10 and 18 inches per year.**		SAGE sites are usually found on deep well-drained valley bottom soils **between 6,200 and 7,800 feet**.	Changed to match TEUI instead of assessment numbers.	internal comments
CH. 2 -- Vegetation -- Alpine and Tundra -- Narrative	The alpine and tundra (ALP) vegetation community is present on only 5,015 acres in the Santa Fe NF at the highest elevations within the northeastern zone.	CH. 2 -- Vegetation -- Alpine and Tundra -- Narrative	The alpine and tundra (ALP) vegetation community is present on only 5,015 acres in the Santa Fe NF at the highest elevations within the northeastern zone **from approximately 11,800 to 13,100 feet.**	Change based on internal comments	internal comments
FW-ALP-DC-3	3 Alpine ecosystems occupy harsh high-elevation sites, resulting in short stature and relatively slow growth for both shrubs and herbaceous species. Wetland communities are present in snowloaded depressions and are dominated by plane leaf willow, snow willow, and arctic willow. Alpine fellfields **are free of snow in the winter and dominated by alpine clover, tufted hairgrass, and Bellardi bog sedge, to allow for the persistence of white-tailed ptarmigan.**	FW-ALP-DC-3	Alpine ecosystems occupy harsh high-elevation sites, resulting in short stature and relatively slow growth for both shrubs and herbaceous species. Wetland communities are present in snowloaded depressions and are dominated by plane leaf willow, snow willow, and arctic willow. Alpine fellfields **are dominated by alpine clover, alpine avens, Bellardi bog sedge, and a variety of other forbs, graminoids, and dwarf willows. Conservation of this ERU allows for the persistence of alpine-obligate wildlife such as white -tailed ptarmigan**	Changed according to comment received using their wording.	Public comment
CH. 2 -- Wildand Urban Interface -- Narrative	The wildland-urban interface (WUI) is the wildland area surrounding resident populations, and other human developments of special significance that are at imminent risk from wildfire.	CH. 2 -- Wildand Urban Interface -- Narrative	The wildland-urban interface (WUI) is **where homes and wildlands meet or intermingle (Stein et al. 2013)**; the wildland area surrounding resident populations, and other human developments of special significance that are at imminent risk from wildfire.	Added from IDT discussion	Internal comment, public comment

CH. 2 -- Wildand Urban Interface -- Narrative	WUI areas encompass not only the sites themselves, but also the continuous slopes and fuels that lie adjacent to and surround the sites, **generally within a 0.5-mile buffer, depending on topography and fuel conditions.**	CH. 2 -- Wildand Urban Interface -- Narrative	WUI areas encompass not only the sites themselves, but also the continuous slopes and fuels that lie adjacent to and surround the sites.	Determined during IDT discussion of comments received that placing any sort of distance to WUI was unnecessary and potentially binding, as there were commenters asking for maps of WUI areas. While we could make those maps, maintaining them as things change would be challenging and not overly helpful. And we weren't certain where 0.5 mi came from.	Internal comment, public comment
FW-WUI-DC-2	Wildland fires in the WUI are **low-intensity** surface fires. Firefighters are able to safely and efficiently suppress wildfires in the WUI using direct attack.	FW-WUI-DC-2	Wildland fires in the WUI are **low to moderate intensity** surface fires. Firefighters are able to safely and efficiently suppress wildfires in the WUI using direct attack.	FIRE-DC-5 which has been removed included "low to moderate intensity" commenter wanted that language included here.	Public comment
FW-FIRE-DC-5	Wildland fires in the WUI are predominantly low- to moderate-intensity fires.	DELETED	DELETED	DC determined to be redundant (and slightly conflicting) with WUI-DC-2 and has conflicting information. Determined during IDT meeting and based on comments received.	Internal comment, public comment
FW-FIRE-G-10	Burn pile composition should contain a mixture of fuel sizes. Large woody fuels, over 8.9 inches in diameter, should be limited to less than 40 percent of the composition of the pile to prevent adverse impacts to the soil	FW-FIRE-G-10	Burn pile composition should contain a mixture of fuel sizes. Large woody fuels, **9 inches** in diameter **or greater**, should be limited to less than 40 percent of the composition of the pile to prevent adverse impacts to the soil	RO comment -- Make numbers easier to interpret for specialists	internal comment
FW-FIRE-MA-1	Consider collaborating with stakeholders and partnering agencies early and often to successfully meet resource objectives through the use of fire. Educate internally and externally the potential challenges and tradeoffs of wildland fire.	FW-FIRE-MA-1	Consider collaborating with stakeholders and partnering agencies early and often to successfully meet resource objectives through the use of fire **while minimizing adverse impacts**. Educate internally and externally the potential **benefits**, challenges and tradeoffs of wildland fire.	Changes based on public comments	Public comment
FW-FIRE-MA-14	Consider collaborating with scientists (e.g., from universities, Forest Service Research and Development, U.S. Geological Survey, or Ecological Restoration Institute) to conduct research on areas impacted by uncharacteristic wildfire to understand how fire has altered the ecological conditions outside the natural range of variation and develop strategies to better manage these areas	FW-FIRE-MA-14	Consider collaborating with scientists (e.g.,frome.g., from universities, Forest Service Research and Development, U.S. Geological Survey, or Ecological Restoration Institute) **and other land management agencies or organizations** to conduct research on areas impacted by uncharacteristic wildfire to understand how fire has altered the ecological conditions outside the natural range of variation and develop strategies to better manage these areas	added based on public comments	Public comment
Ch. 2 -- Water Resources -- Narrative	Ephemeral streams flow for short duration in response to storm events.	Ch. 2 -- Water Resources -- Narrative	Ephemeral streams **(including arroyos)** flow for short duration in response to storm events.	modified to address external comments.	Public comment

Ch. 2 -- Water Resources -- Narrative	**Past management activities and resource use caused degradation of water resources in many parts of the forest.** Demand for the waters of the Santa Fe NF will continue to increase in the coming decades, challenging the forest to protect existing high-quality water resources and restore degraded areas. Metrics of impairment used to evaluate current condition and trends of water resources vary, but in general, we assess impacts to water resources in three categories: water quality, water yield, and watershed condition.	Ch. 2 -- Water Resources -- Narrative	**Because of human demand for water resources and other human land uses, watersheds, and aquatic ecosystems have been altered from their reference condition. While the location of stream channels is generally unchanged, diversion into acequias has changed the hydrologic, riparian, and agroecosystem function of stream systems**. Demand for the waters of the Santa Fe NF will continue to increase in the coming decades, challenging the forest to protect existing high-quality water resources and restore degraded areas. Metrics of impairment used to evaluate current condition and trends of water resources vary, but in general, we assess impacts to water resources in three categories: water quality, water yield, and watershed condition.	Modified based on public comment; consistent with CNF	Public comment
Ch. 2 -- Water Resources -- Narrative	Collectively, surface waters contribute to connectivity for fish and wildlife across the landscape, local and urban potable water supplies, agricultural uses such as livestock watering and irrigation, and recreation providing support services, provisions, and cultural benefits. Water in arid northern New Mexico has important traditional cultural significance, which will only become more vital in the future with additional pressures from predicted climate change and continually increasing demands from growing urban populations	Ch. 2 -- Water Resources -- Narrative	Collectively, surface waters contribute to connectivity for fish and wildlife across the landscape, local and urban potable water supplies, agricultural uses such as livestock watering and irrigation **(which all support local economies)**, and recreation providing support services, provisions, and cultural benefits. Water in arid northern New Mexico has important traditional, cultural, **and socio-economic significance**, which will only become more vital in the future with additional pressures from predicted climate change and continually increasing demands from growing urban populations	Modified based on public comment	Public comment
Ch. 2 -- Water Resources -- Narrative	Water from the Santa Fe NF supports many uses throughout New Mexico and locations farther downstream, and provides numerous ecosystem services to the people and animals that inhabit and use these lands. Areas with water are centers of high biological diversity in arid landscapes, and their ecological health is important for forest ecosystem sustainability. Collectively, surface waters contribute to connectivity for fish and wildlife across the landscape, local and urban potable water supplies, agricultural uses such as livestock watering and irrigation (which all support local economies), and recreation providing support services, provisions, and cultural benefits. Water in arid northern New Mexico has important traditional, cultural, and socio-economic significance, which will only become more vital in the future with additional pressures from predicted climate change and continually increasing demands from growing urban populations. Plan and management direction for water resources is integrated throughout	Ch. 2 -- Water Resources -- Narrative	Water from the Santa Fe NF supports many uses throughout New Mexico and locations farther downstream, and provides numerous ecosystem services to the people and animals that inhabit and use these lands. Areas with water are centers of high biological diversity in arid landscapes, and their ecological health is important for forest ecosystem sustainability. Collectively, surface waters contribute to connectivity for fish and wildlife across the landscape, local and urban potable water supplies, agricultural uses such as **acequias**, livestock watering and irrigation (which all support local economies), and recreation providing support services, provisions, and cultural benefits. **Acequias provide cultural and provisioning ecosystem services. They feed water to communal agricultural lands, bring families and traditional communities together through the shared work of maintaining them, and contribute to a way of life that spans generations.** Water in arid northern New Mexico has important traditional, cultural, and socio-economic significance, which will only become more vital in the future with additional pressures from predicted climate change and continually increasing demands from growing urban populations. Plan and management direction	Modified based on public comment; consistent with CNF	Public comment
FW-WATER-DC-2	Most watersheds support multiple uses (e.g., timber, recreation, and grazing) with no long-term decline in ecological conditions, although some watersheds are reserved to preserve ecological function and may support more limited uses (e.g., municipal watersheds).	FW-WATER-DC-2	Most watersheds support multiple uses (e.g., timber, recreation, **traditional and cultural uses**, and grazing) with no long-term decline in ecological conditions, although some watersheds are reserved to preserve ecological function and may support more limited uses (e.g., municipal watersheds).	modified to address external comments.	Public comment

Ch. 2 -- Riparian and Wetland Ecosystems -- Narrative	N/A	Ch. 2 -- Riparian and Wetland Ecosystems -- Narrative	While most riparian management zones (RMZ) include riparian obligate or facultative-obligate vegetation[5], not all do. [5] Obligate riparian species are found almost exclusively in riparian areas. Facultative species are commonly found in the upland and riparian areas.	modified to address internal concerns about the definition of RMZs; consistent with CNF. Additionally modified to address internal concerns about comprehension.	Internal comment
Ch. 2 -- Riparian and Wetland Ecosystems -- Narrative	Riparian vegetation characteristics are a critical component in maintaining the unique **characteristics** of riparian ecosystems.	Ch. 2 -- Riparian and Wetland Ecosystems -- Narrative	Riparian vegetation characteristics are a critical component in maintaining the unique **qualities** of riparian ecosystems.	Internal review -- Word choice	editorial
Ch. 2 -- Riparian and Wetland Ecosystems -- Narrative	FSR vegetation communities provide important habitat, including breeding and migration, for many riparian wildlife and bird species (e.g., masked shrew, water shrew, beaver, southwestern willow flycatcher, Wilson's warbler, and yellow-billed cuckoo). Riparian areas have historic and contemporary significance to tribes and traditional communities, due to the cultural value of water and because they contain traditionally used resources that are rare on the landscape (cultural ecosystem services). The forest plan's desired conditions, objectives, and guidelines for the vegetation characteristics of FSRs focus on restoring and maintaining vegetation structure and composition to ensure that these areas continue providing ecosystem services.	Ch. 2 -- Riparian and Wetland Ecosystems -- Narrative	FSR vegetation communities provide important habitat, including breeding and migration, for many riparian wildlife and bird species (e.g., masked shrew, water shrew, beaver, southwestern willow flycatcher, Wilson's warbler, and yellow-billed cuckoo). Riparian areas have historic and contemporary significance to tribes and traditional communities, due to the cultural value of water and because they contain traditionally used resources that are rare on the landscape (cultural ecosystem services). **Restoration on headwater wetlands and first order streams has benefits that cascade throughout the watershed and can facilitate future restoration downstream. Fixing watershed problems at their source assists natural recovery and increases the potential for future restoration lower in the watershed**. The forest plan's desired conditions, objectives, and guidelines for the vegetation characteristics of FSRs focus on restoring and maintaining vegetation structure and composition to ensure that these areas continue providing ecosystem services.	Addition based on comments received; consistent with CNF	Public comment
FW-RWE-DC-4	Riparian areas and wetland ecosystems meet the standards defined by proper functioning condition metrics (e.g., Prichard et al. 1998). RE and WE are supported by surface and subsurface flow regimes that contribute to stream-channel and floodplain development, maintenance, and function; which maintain soil moisture necessary for the regeneration of native plants that depend on flooding or high water tables.	FW-RWE-DC-4	Riparian areas and wetland ecosystems meet the standards defined by proper functioning condition metrics (e.g., Prichard et al. 1998). RE and WE are supported by surface and subsurface flow regimes that contribute to stream-channel and floodplain development, maintenance, and function; which maintain soil moisture necessary for **riparian connectivity and** for the regeneration of native plants that depend on flooding or high water tables.	modified to address public concerns about habitat connectivity	Public comment
FW-RWE-O-1	Riparian ecosystems move toward desired conditions (less than a 33 percent departure from DC) for vegetation functional diversity, vegetation seral state, riparian corridor connectivity, and flood regime (frequency, duration, and magnitude) by implementing 15 miles of stream every 10 years.	FW-RWE-O-1	1 Riparian ecosystems move toward desired conditions (less than a 33 percent departure from DC) for vegetation functional diversity, vegetation seral state, riparian corridor connectivity, and flood regime (frequency, duration, and magnitude) by implementing 15 miles of stream **restoration** every 10 years.	Missing word	editorial

FW-RWE-G-1	Riparian management zones (RMZ) should be defined **by** either a site-appropriate delineation of the riparian area **(including one site potential tree height)** or a buffer of 100 feet from the edges (e.g., **each bank**) of all perennial and intermittent streams, lakes, seeps, springs, and other wetlands or 15 feet from the edges of the ephemeral channels. The exact width of RMZs may vary based on ecological or geomorphic factors or by waterbody type, but includes those areas that provide riparian and aquatic ecosystem functions and connectivity. **The waterbody itself is considered part of the RMZ.**	FW-RWE-G-1	Riparian management zones (RMZ) should be defined **to include** either a site-appropriate delineation of the riparian area or a buffer of 100 feet from the edges (e.g., **each stream bank at bankfull or edge of the water body**) of all perennial and intermittent streams, lakes, seeps, springs, and other wetlands or 15 feet from the edges of the ephemeral channels. **The waterbody itself is considered part of the RMZ**. The exact width of RMZs may vary based on ecological or geomorphic factors or by waterbody type, but includes those areas that provide riparian and aquatic ecosystem functions and connectivity	RMZ definition was considered unclear from the point of view of those working at the project level.	Internal comment
FW-RWE-G-2	Within RMZs, management activities (e.g., recreation, permitted uses, structural developments such as livestock water gaps, pipelines, or other infrastructure) should occur at levels or scales that move toward desired conditions for water, soils, aquatic species habitat, and vegetation within the sub-watershed in which the management activity is taking place. Activities and facilities with a small footprint (e.g., access points, intermittent livestock crossing locations, water gaps, or other infrastructure) may be necessary to manage larger scale impacts within the RMZ, recognizing there may be trade-offs between activities and resources.		Within RMZs, management activities (e.g., recreation, permitted uses, structural developments such as livestock water gaps, pipelines, or other infrastructure) should occur at levels or scales that move toward desired conditions for water, soils, aquatic species habitat, and vegetation within the sub-watershed in which the management activity is taking place, **and align with the most current regional riparian strategy [6]**. Activities and facilities with a small footprint (e.g., access points, intermittent livestock crossing locations, water gaps, or other infrastructure) may be necessary to manage larger scale impacts within the RMZ, recognizing there may be trade-offs between activities and resources. **[6]: The current regional strategy is the Riparian and Aquatic Ecosystem Strategy Southwestern Region of the Forest Service and its supplement, Existing and Desired Conditions for Riparian and Aquatic Ecosystems (USDA FS 2019a and USDA FS 2019b)**	Change based on internal concern that the regional strategy was not mentioned in the Plan.	internal comment
N/A	N/A	FW-RWE-MA-5	Consider working with partners to develop wetland action plans for headwater wetland restoration projects to addresses wetland stressors by identifying and prioritizing mitigation and restoration actions	Added based on public comment concerned that we did not include the Wetland Jewels Management Area in the Draft Plan.	Public comment
CH. 2 -- Wildlife, Fish, and Plants -- Narrative	The most important direct drivers of change in plant and animal populations are habitat change (e.g., land use changes, disruption of natural processes, physical modification of rivers or water withdrawal from rivers, lack of connectivity),	CH. 2 -- Wildlife, Fish, and Plants -- Narrative	The most important direct drivers of change in plant and animal populations are habitat change (e.g., land use changes, disruption of natural processes, **or** physical modification of rivers or water withdrawal from rivers, lack of connectivity, **or disease**),	Change based on public comment	Public comment
CH. 2 -- Aquatic Species and Habitats -- Narrative	These animals are native to the Santa Fe NF and are not considered invasive, **nor is their persistence in the forest of concern**.	CH. 2 -- Aquatic Species and Habitats -- Narrative	These animals are **both** native and **non-native** to the Santa Fe NF, **and their persistence on the forest is desirable**.	modified based on public comment -- concern with introduced sport fish being singled out as a negative	Public comment
FW-AQUASH-MA-1	Work collaboratively with the New Mexico Department of Game and Fish and other organizations, individuals, and groups to plan and implement projects for the management and research of fish and other aquatic species and their habitats.	FW-AQUASH-MA-1	Work collaboratively with the New Mexico Department of Game and Fish, **government institutions (local, state, tribal and federal)**, and other organizations, individuals, and groups to plan and implement projects for the management and research of fish and other aquatic species and their habitats.	modified based on public comment	Public comment
FW-AQUASH-MA-2	Work with partners to develop and implement conservation strategies beneficial to aquatic habitats (e.g., Rio Grande Cutthroat Conservation Strategy).	FW-AQUASH-MA-2	Work with partners to develop and implement conservation strategies beneficial to aquatic habitats (e.g., Rio Grande Cutthroat Conservation Strategy, **the State Wildlife Action Plan**, etc.).	modified based on public comment concerned that we include the SWAP in our Plan	Public comment

FW-AQUASH-MA-4	Prioritize restoration projects based on factors such as watershed conditions, at-risk species, restoration after disturbances (e.g., fire or flood), partner interest, and other immediate needs.	FW-AQUASH-MA-4	Prioritize restoration projects based on factors such as watershed conditions, at-risk species, **restoring aquatic habitat connectivity**, restoration after disturbances (e.g., fire or flood), partner interest, and other immediate needs.	modified based on public comment concerned with habitat connectivity	Public comment
FW-AQUASH-MA-5	Work with partners to promote public education and valuing of the **terrestrial** wildlife in the forest	FW-AQUASH-MA-5	Work with partners to promote public education and valuing of the **aquatic** wildlife in the forest	modified to correct typo	editorial
N/A	N/A	FW-AQUASH-MA-6	Consider constructing beaver dam analogues to create similar beneficial conditions for aquatic and riparian habitats as reintroducing beavers while avoiding potential conflicts with adjacent land management.	new management approach from public comment concerned with conflict over instroduced beavers	Public comment
FW-TERRASH-DC-3	Wildlife are free from harassment and human disturbance at a scale that does not impact vital functions of populations (e.g., breeding, feeding, and rearing young) resulting in a negative impact to the persistence of the species in the forest.	FW-TERRASH-DC-3	3 Wildlife are free from harassment and human disturbance at a scale that does not impact vital functions of populations (e.g., breeding, feeding, rearing young, **migration and dispersal**) resulting in a negative impact to the persistence of the species in the forest.	Change based on public comment	Public comment
FW-TERRASH-G-2	Infrastructure (e.g., fences and roads) should be designed, modified, or removed to minimize impacts on wildlife movement and improve habitat connectivity.	FW-TERRASH-G-2	Infrastructure (e.g., fences and roads) should be designed, modified, or removed to minimize impacts on wildlife movement and improve habitat connectivity.	Change based on public comment	Public comment
FW-TERRASH-G-4	Management activities that inhibit the reproduction of an individual raptor (disturbing the same nest site) should be avoided in successive years.	FW-TERRASH-G-4	Management activities that inhibit the reproduction of an individual raptor (disturbing the same nest site) should be avoided in successive years **(e.g., via the development of species specific distance buffers focusing around known nest sites).**	modified based on public comment to provide example of how to avoid raptor disruptions.	Public comment
FW-TERRASH-MA-1	Work collaboratively with the New Mexico Department of Game and Fish and other organizations, individuals, and groups to plan and implement projects for the management and research of wildlife and their habitats.	FW-TERRASH-MA-1	Work collaboratively with the New Mexico Department of Game and Fish and other organizations, **government institutions (local, state, Tribal, federal)**, individuals, and groups to plan and implement projects for the management and research of wildlife and their habitats, **including Rocky Mountain big horn sheep**.	modified based on multiple public comments	Public comment
N/A	N/A	FW-TERRASH-MA-8	Work with partners to develop and implement conservation strategies beneficial to terrestrial habitats (e.g., the State Wildlife Action Plan, etc.).	new management approach based on public comment concerned about calling out the SWAP	public comment
FW-INVASIVE-S-1a	Decontamination procedures on vehicles and equipment	FW-INVASIVE-S-1a	Decontamination procedures on vehicles and equipment **used in terrestrial and aquatic environments**.	modified based on public comment	public comment
FW-INVASIVE-G-4	Management activities should implement procedures to prevent the spread of insects and diseases that impact ecosystem function.	FW-INVASIVE-G-4	Management activities should implement procedures to prevent the spread of insects and diseases that impact ecosystem function (**e.g., the New Mexico Department of Game and Fish's Aquatic Invasive Species Program and Clean, Drain, and Dry guidelines**).	modified based on public comment to provide examples of procedures that could prevent the spread of insects and disease.	public comment
FW-INVASIVE-MA-1	Coordinate with other agencies and pursue partnerships to manage terrestrial and aquatic invasive species.	FW-INVASIVE-MA-1	Coordinate with **the NMDGF and** other agencies and pursue partnerships to manage terrestrial and aquatic invasive species.	modified based on public comments to specifiy the NMDGF	Public comment
CH. 2 -- At-Risk Species -- Narrative	A total of 36 at-risk species were identified—4 federally recognized and 32 SCC.	DELETED	DELETED	Number of species identified deleted as the number may change throughout the life of the Plan	Internal and public comment
FW-ATRISK-DC-3	At-risk species, including rare and endemic, populations and habitats are known (locations), intact, functioning, and sufficient for species' persistence.	FW-ATRISK-DC-3	At-risk species, including rare and endemic, populations and habitats are known (locations), intact, functioning, **well-connected**, and sufficient for species' persistence.	modified based on public comment concerned about habitat connectivity	public comment

FW-ATRISK-DC-3	At-risk species, including rare and endemic, populations **and habitats** are known (locations), intact, functioning, well-connected, and sufficient for species' persistence.	FW-ATRISK-DC-3	**Habitats** for at-risk species, including rare and endemic populations, are known **to be** resilient to stressors, well-connected, and sufficient for species' persistence.	Modified based on public comment -- re-ordered sentence because it was confusing to commenters. Tried to clarify	Public comment
FW-ATRISK-G-1b	Prevention of introduction of invasive, competing, or predatory species (these are species directly and negatively impacting at-risk species populations);	FW-ATRISK-G-1b	Prevention of introduction of **non-game** invasive, competing, or predatory species (these are species directly and negatively impacting at-risk species populations), **and prevention of introduction of nonnative game species to novel locations.**	modified based on public comment concerned about being able to stock sport fish	public comment
FW-ATRISK-G-5c	In goshawk foraging areas and post-fledging family areas, groups of three to five reserve trees should be retained within management-created openings greater than 1 acre in ponderosa pine-evergreen oak and dry mixed-conifer communities, and six reserve trees should be retained within management-created openings greater than 0.5 acre in wet mixed-conifer and spruce-fir communities.	FW-ATRISK-G-5c	In goshawk foraging areas and post-fledging family areas, groups of three to five reserve trees should be retained within management-created openings greater than 1 acre in ponderosa pine-evergreen oak and dry mixed-conifer communities, and six reserve trees **(VSS class 5 or 6)** should be retained within management-created openings greater than 0.5 acre in wet mixed-conifer and spruce-fir communities	modification based on public comment to clarify guideline	Public comment
FW-ATRISK-MA-6	In coordination with New Mexico Department of Game and Fish, consider "dusting" prairie dog colonies with flea-controlling powder to reduce the spread of sylvatic plague. When possible, identify and potentially avoid burrows occupied with at-risk species prior to application.	FW-ATRISK-MA-6	In coordination with New Mexico Department of Game and Fish, consider "dusting" prairie dog colonies with flea-controlling powder to reduce the spread of sylvatic plague, **or distributing sylvatic plague vaccine**. When possible, identify and potentially avoid burrows occupied with at-risk species prior to application.	Modification based on public comment	Public comment
CH. 2 -- Soils Resources -- Narrative	Soils are also among the largest pools for carbon **sequestration**, another regulating ecosystem service.	CH. 2 -- Soils Resources -- Narrative	Soils are also among the largest pools for carbon **storage**, another regulating ecosystem service.	Modified to more accurate terminology based on public comment	Public comment
CH. 2 -- Air -- Narrative	Air resources on national forests are an important resource to be protected. **Not only does the public value the fresh air and sweeping views that** national forests **can** provide, **but** forest health, water quality, and fisheries can also be affected by poor air quality.	CH. 2 -- Air -- Narrative	Air resources on national forests are an important resource to be protected. **The** national forests **provide** fresh air, sweeping views, forest health, water quality, and fisheries, **all of which can be affected by poor air quality**.	modified based on public comment to remove subjective value language	Public comment
CH. 2 -- Air -- Narrative	Human health and environmental standards are defined in the National Ambient Air Quality Standards (NAAQS) set by the Environmental Protection Agency (EPA) fo**r seven pollutants** considered harmful to public health and the environment: carbon monoxide, lead, nitrogen dioxide, **particulate matter 10 microns in size or smaller (PM10), particulate matter 2.5 microns in size or smaller (PM2.5)**, ozone, and sulfur dioxide.	CH. 2 -- Air -- Narrative	Human health and environmental standards are defined in the National Ambient Air Quality Standards (NAAQS) set by the Environmental Protection Agency (EPA) for **six commons pollutants that are** harmful to public health and the environment: carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, **and particulate matter (PM10 and PM2.5). PM10 is particulate matter with a diameter of 10 micrometers or less and PM2.5 is particulate matter with a diameter of 2.5 micrometers or less.**	Modified based on internal review to clarify the subject matter	Internal comment
FW-AIR-G-2	During wildfire incidents, techniques to minimize smoke impacts (e.g., public notification, timing of ignitions, mass ignitions, limiting fire spread, etc.) should be **considered**, including the identification of smoke management objectives in the wildfire decision document.	FW-AIR-G-2	During wildfire incidents, techniques to minimize smoke impacts (e.g., public notification, timing of ignitions, mass ignitions, limiting fire spread, etc.) should be **used**, including the identification of smoke management objectives in the wildfire decision document.	Modified as "considered" is language only used in management approaches.	Internal and public comment
FW-AIR-MA-2	Consider deploying smoke monitors when there is potential for significant impacts to the public	FW-AIR-MA-2	Consider deploying instrument smoke monitors when there is potential for significant impacts to the public.	Modified management approach based on public comment	Public comment
N/A	N/A	FW-AIR-MA-3	Consider design features, best management practices, or mitigation measures to reduce fugitive dust where needed.	Added management approach based on public comment	Public comment

N/A	N/A	FW-AIR-MA-4	When possible, consider using non-potable water for dust abatement strategies.	Added management approach based on public comment concerned about water conservation	Public comment
FW-PARTNER-DC-1	Partners and volunteers are a collaborative network that increases capacity for managing forest resources, assists in communicating with and educating the public, and is a crucial component to achieving short- and long-term mutually shared goals (e.g., restoration and sustainable recreation).	FW-PARTNER-DC-1	Partners and volunteers are a collaborative network that increases capacity for managing forest resources, assists in communicating with and educating the public, and is a crucial component to achieving short- and long-term mutually shared goals (e.g., restoration, **traditional and cultural uses,** and sustainable recreation).	Modified DC based on public comment	Public comment
CH. 2 -- Northern New Mexico Traditional Communities and Uses -- Narrative	Religious and ceremonial uses, including for cemeteries, pilgrimages, calvarios, and shrines.	CH. 2 -- Northern New Mexico Traditional Communities and Uses -- Narrative	Religious and ceremonial uses **of lands and waters**, including for cemeteries, pilgrimages, calvarios, and shrines	Modified narrative based on public comment cocnerned that the traditional importance of water resources is recognized	Public comment
CH. 2 -- Northern New Mexico Traditional Communities and Uses -- Narrative	This forest plan seeks to build upon past initiatives and continues to recognize and support the traditional uses associated with the forest.	CH. 2 -- Northern New Mexico Traditional Communities and Uses -- Narrative	This forest plan **recognizes the intent behind this previous guidance**, seeks to **build or improve** upon past initiatives and continues to recognize and support the traditional uses associated with the forest.	Modified based on CNF public comment concerned that work from the Northern New Mexico Policy be recognized; consistent with CNF	Public comment
CH. 2 -- Northern New Mexico Traditional Communities and Uses -- Narrative	Forest management **needs to balance** this traditional way of life, which defines the cultural identity of these traditional communities, **and** the changes brought about by **increasing** public demand from development, tourism, recreation, and extractive use.	CH. 2 -- Northern New Mexico Traditional Communities and Uses -- Narrative	Forest management **supports** this traditional way of life, which defines the cultural identity of these traditional communities, **in light of** the changes brought about by public demand from development, tourism, recreation, and extractive use. **Successful management of the Santa Fe NF depends on the sustained success of northern New Mexico's traditional communities.**	Changes based on public comments that disliked the idea of "balancing" traditional uses with other forest uses; consistent with CNF	Public comment
CH. 2 -- Recreation -- Narrative	These are not only cultural ecosystem services, but also provisioning ecosystem services in that they provide necessary goods and services for subsistence such as food, medicine, and the means to heat rural homes in winter. In addition, these acitivities can provide regulating ecosystem services through controlling wildlife populations and removing fuels to improve forest health.	CH. 2 -- Northern New Mexico Traditional Communities and Uses -- Narrative	People continue to benefit directly and indirectly from a variety of ecosystem services obtained from the land. **These includeare not only cultural ecosystem services, such as hunting; fishing; and gathering of forest products, especially fuelwood; and provisioning ecosystem services, which provide necessary goods and services for subsistence such as food, medicine, and the means to heat rural homes in winter.** In addition, these activities can provide regulating ecosystem services through controlling wildlife populations and removing fuels to improve forest health. As well as providing the necessary resources to sustain life, these landscapes also form an anchor for those communities, providing people a sense of identity and their place in the world. Generations of families formed communities, adapted to their environment, and developed a way of life dependent upon and complementary of the mountain, upland and lowland resources at hand. **In addition, these activities can provide regulating ecosystem services through controlling wildlife populations and removing fuels to improve forest health.**	Discussion on subsistence use of resources was decided to be more appropriate for the Traditional Communities section than the Recreation section. This move was triggered by public comment asking about the placement of ecosystem services in the recreation narrative. The comment is addressed in full in the Response to Comments (Appendix A).	Public comment
FW-TRIBES-G-2	Consultation with federally recognized tribes should occur at the early stages of project planning and design, and tribal perspectives, needs, and concerns, as well as traditional knowledge, should be incorporated into project design and decisions.	FW-TRIBES-G-2	Consultation with federally recognized tribes should occur at the early stages of project planning and design, to incorporate tribal perspectives, needs, and concerns, as well as traditional knowledge into project design and decisions.	Reworded to be consistent with other NNM forests	Consistency

FW-TRIBES-G-3	Management activities and uses should be planned and administered to prevent or minimize impacts to the physical and scenic integrity of places that the tribes regard as sacred sites or traditional cultural properties	FW-TRIBES-G-3	Management activities and uses should be planned and administered to prevent or minimize impacts to the physical and scenic integrity of places that the **federally recognized** tribes regard as sacred sites, traditional cultural properties, **or part of an important cultural landscape**.	Changes based on public comment; reworded to be consistent with other NNM forests	Public comment; Consistency
FW-TRIBES-G-4	Requests for reburial of American Indian human remains and cultural items by Tribes should be accommodated.	FW-TRIBES-G-4	**Human remains and cultural items disinterred from National Forest System lands or adjacent sites should be reburied in accordance with the requests of affiliated tribes.**	Rewritten to be consistent with other NNM forests	Consistency
CH. 2 -- Nothern New Mexico Traditional Communities and Uses -- Rural Historic Communities	Occupational, subsistence, and cultural-based activities associated with rural historic communities may include livestock grazing, fuelwood gathering, logging, Christmas tree harvesting, medicinal plant collection, agriculture, and mining.	CH. 2 -- Nothern New Mexico Traditional Communities and Uses -- Rural Historic Communities	Occupational, subsistence, and cultural-based activities associated with rural historic communities may include livestock grazing, fuelwood gathering, logging, Christmas tree harvesting, **piñon picking,** medicinal plant collection, **hunting, fishing, a**griculture, and mining.	Modified based on public comments that wanted more recognition of different traditional uses and for the SFNF to be consistent with the CNF; consistent with CNF	Public comment; Consistency
CH. 2 -- Nothern New Mexico Traditional Communities and Uses -- Rural Historic Communities -- Land Grants-Mercedes -- Narrative	From the **late-1600s to the mid-1800s**1, Spain and later Mexico made land grants or 'mercedes' to individuals, groups, and towns to promote development in the frontier lands that today constitute the American Southwest. The two most common types of Spanish and Mexican land grants-mercedes made in New Mexico were "community land grants" and "individual land grants." Community land grants were typically organized around a central plaza, whereby each settler received an individual allotment for a household and a tract of land to farm, and "common land" was set aside as part of the grant for use by the entire community. Individual land grants, as its name suggests, were made in the name of specific individuals. **Between 1689 and 1846, Spain and Mexico granted community and individual land grants-mercedes in what is now New Mexico and southern Colorado.**	CH. 2 -- Nothern New Mexico Traditional Communities and Uses -- Rural Historic Communities -- Land Grants-Mercedes -- Narrative	From the **1689 to 1846**, Spain and later Mexico made land grants or 'mercedes' to individuals, groups, and towns to promote development in the frontier lands that today constitute the American Southwest. The two most common types of Spanish and Mexican land grants-mercedes made in New Mexico were "community land grants" and "individual land grants." Community land grants were typically organized around a central plaza, whereby each settler received an individual allotment for a household and a tract of land to farm, and "common land" was set aside as part of the grant for use by the entire community. Individual land grants, as its name suggests, were made in the name of specific individuals. **Today many land grants-mercedes are organized as political subdivisions of the State of New Mexico (New Mexico Statutes Annotated 1978 §§49-1-1 to 49-1-23). Those that are not political subdivisions participate through the New Mexico Land Grant Council, which is a State agency that represents the interest of all New Mexican land grants-mercedes.**	Modified for consistency among the three NNM forests	Consistency
CH. 2 -- Nothern New Mexico Traditional Communities and Uses -- Rural Historic Communities -- Land Grants-Mercedes -- Narrative	Many traditional Hispanic communities have ties to lands in the Santa Fe NF that were once common lands of community land grants-mercedes. The national forest maintains relationships with several Spanish- and Mexican-era land grant-merced communities including former common lands now administered by the Forest Service. Common lands provided land grant-merced communities access to grazing land, stone and clay, wood, game, fish, medicinal plants, and other forest products—**uses that continue today**. Many land grants-mercedes are actively involved in managing and preserving adjacent NFS lands for traditional and cultural use. Some have boards of trustees to fulfill this mission through a variety of activities, including managing, protecting, and regulating uses of common lands; preserving cultural and historic resources; and partnering with the Forest Service to plan and propose forest restoration projects on NFS lands.	CH. 2 -- Nothern New Mexico Traditional Communities and Uses -- Rural Historic Communities -- Land Grants-Mercedes -- Narrative	Many traditional Hispanic communities have ties to lands in the Santa Fe NF that were once common lands of community land grants-mercedes. The national forest maintains relationships with several Spanish- and Mexican-era land grant-merced communities including former common lands now administered by the Forest Service. Common lands provided land grant-merced communities access to grazing land, **water for agriculture and consumption**, stone and clay, wood, game, fish, medicinal plants, and other forest products (**uses that continue today), and with areas which were made sacred (e.g. cemeteries, moradas, churches, and pilgrimage sites)**. Many land grants-mercedes are actively involved in managing and preserving adjacent NFS lands for traditional and cultural use. Some have boards of trustees to fulfill this mission through a variety of activities, including managing, protecting, and regulating uses of common lands; preserving cultural and historic resources; and partnering with the Forest Service to plan and propose forest restoration projects on NFS lands.	Modified based on public comment; consistent with CNF	Public comment; Consistency

CH. 2 -- Nothern New Mexico Traditional Communities and Use--Rural Historic Communities -- Acequias -- Narrative	Acequias are community operated and organized water irrigation systems. Many of the State's acequia associations have been in existence since the Spanish Colonial period in the 17th and 18th centuries and were historically associated with land grants-mercedes. Acequia and community ditch associations are political subdivisions of the State of New Mexico and occupy a unique place in forest management (New Mexico Statutes Annotated 1978 §73-2-28). Acequias that existed on unreserved public lands for use in connection with a valid water right, prior to the withdrawal of public lands to create the national forests, are afforded valid rights and status under NFS management.	CH. 2 -- Nothern New Mexico Traditional Communities and Use--Rural Historic Communities -- Acequias -- Narrative	Acequias are community operated and organized water irrigation systems. Many of the State's acequia associations have been in existence since the Spanish Colonial period in the 17th and 18th centuries and were historically associated with land grants-mercedes. Acequia and community ditch associations are political subdivisions of the State of New Mexico and occupy a unique place in forest management (New Mexico Statutes Annotated 1978 §73-2-28). Acequias that existed on unreserved public lands for use in connection with a valid water right, prior to the withdrawal of public lands to create the national forests, are afforded valid rights and status under NFS management, **including the right codified in federal law (R.S. 2339).**	Modified based on public comment that we recognize R.S 2339 rights; consistent with NNM forests	Public comment; Consistency
CH. 2 -- Nothern New Mexico Traditional Communities and Use--Rural Historic Communities -- Acequias -- Narrative	Much of the water diverted by acequias comes off of NFS lands and can be affected by forest management activities upstream. Acequias are still relevant and vital to water delivery and community organizing systems today. They serve as important water infrastructure for communities, and their associations are important community organizations throughout New Mexico.	CH. 2 -- Nothern New Mexico Traditional Communities and Use--Rural Historic Communities -- Acequias -- Narrative	Much of the water diverted by acequias comes off of NFS lands and can be affected by forest management activities upstream. **On July 2, 2019, the U.S. Forest Service Southwest Region issued an Acequia Guidance Document acknowledging these rights and providing a "clear framework for efficient and effective administrative determinations concerning proposals for the maintenance, operation, access to, construction and reconstruction of acequia infrastructure on NFS lands."** Acequias are still relevant and vital to water delivery and community organizing systems today. **They modify the hydrology and riparian distribution across irrigated floodplain valleys, recharging groundwater and delaying return flow to streams.** They serve as important water infrastructure for communities, and their associations are important community organizations throughout New Mexico.	Added based on public comments that wanted the Acequia Guidance Document included in the Forest Plan and wanted the ecosystem benefits of acequias recognized; consistent with CNF	Public comment; Consistency
FW-RURALH-DC-3	3 Forest resources important for cultural and traditional needs (e.g., osha, piñon nuts, okote (pitch wood), and micaceous clay) as well as for subsistence practices and economic support (e.g., livestock grazing, acequias, and forest products) of rural historic communities are available and sustainable.	FW-RURALH-DC-3	3 Forest resources important for cultural and traditional needs (e.g., osha, piñon nuts, okote (pitch wood), and micaceous clay) as well as for subsistence practices and economic support (e.g., livestock grazing, acequias, **firewood, vigas, latillas, gravel, soils,** and forest products) of rural historic communities are available and sustainable.	Modified for consistency among the three NNM forests	Consistency
FW-RURALH-G-2	Management activities should be analyzed and mitigated to prevent or minimize the impacts to the physical and scenic integrity of places that rural historic communities regard as spiritually or culturally important.	FW-RURALH-G-2	Management activities should be analyzed and mitigated to prevent or minimize the **negative** impacts to the physical and scenic integrity of places that rural historic communities regard as spiritually or culturally important.	Modified based on public comment wanting clearer language	Public comment
FW-RURALH-MA-3	Consider identifying forest locations that can provide a setting for educating youth in culture, history, land stewardship, and the health benefits of outdoor activities	FW-RURALH-MA-3	Consider identifying forest locations that can provide a setting for educating youth in culture, history, land stewardship, and the health benefits of outdoor activities **(e.g., through cooperation with cultural youth programs such as the YCC or others).**	Modified based on public comment	public comment
FW-ARCH-DC-2	2 The public has opportunities for learning about, appreciating, and understanding cultural and historic resources as well as resources significant to traditional communities. Public understanding about the past occupation and use of landscapes and cultural resources contributes to their protection	FW-ARCH-DC-2	2 The public has opportunities for learning about, appreciating, and understanding cultural and historic resources as well as resources significant to traditional communities. Public understanding about the past occupation, **historical and current uses,** and use of landscapes and cultural resources contributes to their protection	Modified based on public comment	Public comment

FW-ARCH-MA-4	Work with partners such as New Mexico Historic Preservation Division SiteWatch program, Archaeological Society of New Mexico, the National Park Service, and local museums to identify, study, protect, and monitor sites and artifact collections	FW-ARCH-MA-4	Work with partners such as **the American Indian Tribes, Youth Conservation/Preservation Corps, land grants, acequias, American Indian Tribes**, New Mexico Historic Preservation Division SiteWatch program, Archaeological Society of New Mexico, the National Park Service, and local museums to identify, study, protect, and monitor sites and artifact collections	Added based on public comments	Public comment
FW-ARCH-MA-8	Consider using programs (e.g., site stewards, volunteers, and Passport in Timesite stewards, volunteers, and Passport in Time) that engage the public to assist in protecting, managing, and documenting cultural resources.	FW-ARCH-MA-8	Consider using programs (e.g., **Youth Conservation/Preservation Corps,** site stewards, volunteers, and Passport in Timesite stewards, volunteers, and Passport in Time) that engage the public to assist in protecting, managing, and documenting cultural resources.	Added based on public comments	Public comment
CH. 2 -- Forest Products -- Narrative	The most obvious ecosystem service of forest products include provisioning ecosystem services from timber. This commonly included sawlogs in the 1970s and 1980s, a practice that continues today by extracting sawtimber from the forest for lumber production. Extracted timber is also commonly used for fuelwood and miscellaneous products such as posts and poles, vigas and latillas; Christmas trees; and transplant stock. These products are also cultural ecosystem services as discussed above. Ponderosa pine and mixed conifer forests where fire has been absent commonly have dense thickets of small-diameter woody growth. Timber harvest is an important step in restoring these areas to their desired conditions, which improves regulating ecosystem services. Thinning timber to create more space between trees allows grasses to grow, improves water retention and nutrient cycling, and mitigates the risk of uncharacteristic wildfire. **Ultimately, trees grow larger and sequester more carbon than dense stands of**	CH. 2 -- Forest Products -- Narrative	The most obvious ecosystem service of forest products include provisioning ecosystem services from timber. This commonly included sawlogs in the 1970s and 1980s, a practice that continues today by extracting sawtimber from the forest for lumber production. Extracted timber is also commonly used for fuelwood and miscellaneous products such as posts and poles, vigas and latillas; Christmas trees; and transplant stock. These products are also cultural ecosystem services as discussed above. Ponderosa pine and mixed conifer forests where fire has been absent commonly have dense thickets of small-diameter woody growth. Timber harvest is an important step in restoring these areas to their desired conditions, which improves regulating ecosystem services. Thinning timber to create more space between trees allows grasses to grow, improves water retention and nutrient cycling, and mitigates the risk of uncharacteristic wildfire. **When frequent-fire forests are managed to mitigate the chance of uncharacteristic wildfire, carbon stability increase (Hurteau 2017, Krofcheck et al. 2019).** By staging different vegetation treatments across the landscape, there are a greater variety of habitats for wildlife, which is a supporting ecosystem service.	Modified based on public comment	public comment
CH. 2 -- Forest Products -- Timber Suitability	In the Santa Fe NF, SYL is 70.6 MMCF (303.4 MMBF), PTSQ is 43.6 MMCF (145.8 MMBF), and PWSQ is 52.7 MMCF (163.4 MMBF) for the first decade of the forest plan.	CH. 2 -- Forest Products -- Timber Suitability	The following measures are estimated values for the first decade of the forest plan inIn the Santa Fe NF: [A table was added to illustrate the numbers in the original text, but the numbers themselves remain unchanged]	IDT suggested a table would be more easily readable than words	Internal comment
FW-FORESTRY-DC-4	**Private** and commercial timber harvest supplement restoration and maintenance treatments at a scale that achieves landscape desired conditions and contribute to watershed restoration function and resilience, wildlife habitat enhancement, small and large business and employment opportunities, and provide wood products.	FW-FORESTRY-DC-4	**Non-commercial** and commercial timber harvest supplement restoration and maintenance treatments at a scale that achieves landscape desired conditions and contribute to watershed restoration function and resilience, wildlife habitat enhancement, small and large business and employment opportunities, and provide wood products.	Forestry specialist comments that we do not have private timber harvest.	internal comment
FW-FORESTRY-DC-6	Unauthorized collection (e.g., **theft** or collection outside permitted areas) of permitted forest products is rare.	FW-FORESTRY-DC-6	Unauthorized collection (e.g. **unpermitted removal** or collection outside of permitted areas) of permitted forest products is uncommon	Public comment disagreed with the use of the word, "theft," as it cast traditional collection of forest products in a negative light.	Public comment
FW-FORESTRY-S-1d	Timber harvest would be carried out consistent with the protection of soil, watershed, fish, wildlife, recreation, and aesthetic resources.	FW-FORESTRY-S-1d	Timber harvest will be carried out consistent with the protection of soil, watershed, fish, wildlife, **traditional use resources, cultural and historic resources**, recreation, and aesthetic resources	Modified based on public comment.	Public comment

FW-RANGE-G-1	Forage use should be based on current and desired ecological conditions as determined by temporally and spatially scientific data during planning cycles (e.g., Annual Operating Instructions or permit renewal), to sustain livestock grazing and maintain ecological function and processes.	FW-RANGE-G-1	Forage use should be based on current and desired ecological conditions as determined by temporally and spatially **appropriate** scientific data during planning cycles (e.g., Annual Operating Instructions or permit renewal), to sustain livestock grazing and maintain ecological function and processes.	Missing word	editorial
FW-RANGE-MA-2	Develop partnerships with livestock grazing permit holders, agencies, and other groups and individuals to develop collaborative proposals and implement projects that benefit multiple use on the forest.	FW-RANGE-MA-2	Develop partnerships with livestock grazing permit holders, agencies **(e.g. the NMDGF)**, and other groups and individuals to develop collaborative proposals and implement projects that benefit multiple use on the forest.	Modified based on public comment	Public comment
FW-RANGE-MA-12	In wetland or riparian areas, consider avoiding livestock grazing in the same area during the same vegetative growth and reproduction periods (e.g., leafing, flowering, or seeding) in consecutive years to ensure that riparian pastures have vegetative recovery.	FW-RANGE-MA-12	In wetland or riparian areas **that are functional-at-risk or non-functional**, consider avoiding livestock grazing in the same area during the same vegetative growth and reproduction periods (e.g., leafing, flowering, or seeding) in consecutive years to ensure that riparian pastures have vegetative recovery	Modified based on public comment.	Public comment
N/A	N/A	FW-RANGE-MA-13	Consider grazing aspen groves early in the season and resting in the fall, and doing a rest rotation every 2 consecutive years out of every 5 years.	Added based on public comment	Public comment
CH. 2 -- Recreation -- Narrative	We use the desired recreation opportunity spectrum (ROS) to identify various development levels of recreation activities available to visitors. The ROS is a continuum used for managing recreation opportunities, based on a combination of physical, biological, social, and managerial settings, ranging from primeval to paved. The ROS uses the following descriptors for recreation settings ranging from least to most developed: primitive, semiprimitive-nonmotorized, semiprimitive motorized, roaded natural, rural, and urban. These ROS classifications are used in project planning to measure the degree of variation from the existing classification to a new classification.	CH. 2 -- Recreation -- Narrative	We use the desired recreation opportunity spectrum (ROS) to identify various development levels of recreation activities available to visitors. The ROS is a continuum used for managing recreation opportunities, based on a combination of physical, biological, social, and managerial settings, ranging from primeval to paved. The ROS uses the following descriptors for recreation settings ranging from least to most developed: primitive, semiprimitive-nonmotorized, semiprimitive motorized, roaded natural, rural, and urban **(see the Glossary for definitions of each setting).** These ROS classifications are used in project planning to measure the degree of variation from the existing classification to a new classification.	Added based on public comment asking for more information on ROS settings.	Public comment
CH. 2 -- Recreation -- Narrative	N/A	CH. 2 -- Recreation -- Narrative	As with all desired conditions, projects implemented under the Forest Plan are designed to maintain or move toward desired conditions (see Contents of a Forest Plan in Chapter 1). Due to the forest-wide scale of mapping for ROS, some inconsistencies may be present. Examples of this are existing features with long-term impacts that will not achieve the desired ROS in the life of the Forest Plan (e.g., roads or trails, power lines, recreation facilities, pipelines, utility corridors, etc.), or geospatial data inconsistencies, especially along ROS boundaries. Updates to improve map accuracy by resolving these inconsistencies would be administrative changes to the map.	Added based on public comment and regulation that we need to indicate that desired ROS is a desired condition. Also based on discussions among the three NNM forests and the R3 RO to ensure it is clear that desired ROS maps are not plan components and can be changed administratively.	Public comment; internal review
FW-REC-DC-2	Recreation opportunities are commensurate with the ROS setting and enhance the economic, cultural, and social vitality and well-being of surrounding communities.	FW-REC-DC-2	Recreation opportunities are commensurate with the **desired** ROS setting and enhance the economic, cultural, and social vitality and well-being of surrounding communities.	Added based on public comment to clarify that ROS settings refer to desired ROS settings as seen on the desired ROS map. This change was made throughout the Plan whenever ROS was discussed in plan components	Public comment

N/A	N/A	FW-REC-DC-7	Desired ROS settings serve as the desired conditions for recreation (see Appendix A, Fig. 9-west and Fig. 9-east).	Added based on public comment and regulation that we need to indicate that desired ROS is a desired condition. Also based on discussions among the three NNM forests and the R3 RO to ensure it is clear that desired ROS maps are not plan components and can be changed administratively.	Public comment; internal review
FW-REC-MA-11	Develop conservation education, visitor information, and interpretation materials to inform and engage visitors and local communities. These resources are readily available and encourage increased forest stewardship, ecological awareness, visitor orientation, and knowledge of recreation opportunities.	FW-REC-MA-11	Develop conservation education, visitor information, and interpretation materials to inform and engage visitors and local communities. These resources are readily available and encourage increased forest stewardship, ecological awareness, visitor orientation, and knowledge of recreation opportunities. **Consider developing materials in Spanish and native language (e.g., Tanoan, Keres, and Athabaskan).**	Modified based on public comment.	Public comment
FW-DEVREC-DC-2	Recreation facilities are safe, well maintained, and function as intended. New facilities are appropriate within the ROS setting.	FW-DEVREC-DC-2	Recreation facilities are safe, well maintained, and function as intended. New facilities are appropriate within the **desired** ROS setting.	Added to clarify that ROS settings refer to desired ROS settings as seen on the desired ROS map.	Public comment
FW-DEVREC-G-4	Recreation facilities and improvements should be designed to prevent human and wildlife conflicts. For example, use animal-resistant trash cans and cap or screen pipes on gates, vault toilet vents, and interpretive sign bases.	FW-DEVREC-G-4	Recreation facilities and improvements should be designed to prevent human and wildlife conflicts. For example, use animal-resistant trash cans and cap or screen pipes on gates, vault toilet vents, interpretive sign bases, **and reroute multi-use trails to avoid seeps and springs used by wildlife**.	Modified based on public comment concerning impacts of recreation on wildlife	Public comment
FW-DISREC-S-2	Motorized uses are prohibited in semiprimitive-nonmotorized ROS settings, except for necessary administrative activities, permitted activities, and emergency access.	FW-DISREC-S-2	Motorized uses are prohibited in semiprimitive-nonmotorized **desired** ROS settings, except for necessary administrative activities, permitted activities, and emergency access.	Added to clarify that ROS settings refer to desired ROS settings as seen on the desired ROS map.	Public comment
FW-DISREC-S-3	In semiprimitive-nonmotorized ROS settings, no new permanent motorized routes or areas shall be constructed or designated. Temporary motorized routes or road construction in semiprimitive-nonmotorized settings must be rehabilitated within 2 years of project completion.	FW-DISREC-S-3	In semiprimitive-nonmotorized **desired** ROS settings, no new permanent motorized routes or areas shall be constructed or designated. Temporary motorized routes or road construction in semiprimitive-nonmotorized settings must be rehabilitated within 2 years of project completion	Added to clarify that ROS settings refer to desired ROS settings as seen on the desired ROS map.	Public comment
CH. 2 -- Recreation -- Recreation Special Uses -- Narrative	Recreation special-use authorizations allow the use and occupancy of NFS lands when the proposed activity supports the Forest Service mission, meets demonstrated public needs, and aligns with the desired conditions for the use area. Tourism, nature-based outdoor recreation, and other special recreational uses encourage responsible use by visitors and local communities. Recreation special uses may include ski areas, outfitter and guides (e.g., hunting, rafting, and backpacking), and recreation events. Many recreational special uses provide economic opportunities and sustainability to local communities. Recreation residences and isolated cabins are dealt with in the Lands Special Uses section of the plan.	CH. 2 -- Recreation -- Recreation Special Uses -- Narrative	Recreation special-use authorizations allow the use and occupancy of NFS lands when the proposed activity supports the Forest Service mission, meets demonstrated public needs, and aligns with the desired conditions for the use area. Tourism, nature-based outdoor recreation, and other special recreational uses encourage responsible use by visitors and local communities. Recreation special uses may include ski areas, outfitter and guides (e.g., hunting, rafting, and backpacking), recreation events, **recreation residences (e.g., the Holy Ghost recreation residences), and the Cowles Lease Area.** Many recreational special uses provide economic opportunities and sustainability to local communities. Recreation residences and isolated cabins are dealt with in the Lands Special Uses section of the plan.	Added based on public comment concerned that we did not mention recreation residences as a recreation special use or the Cowles Lease Area.	Public comment

FW-RECSU-S-1	Commercial use of domestic sheep and goats (e.g., for filming, as pack animals, etc.) must not be authorized in areas occupied by bighorn sheep or in areas where bighorn sheep travel, to prevent the spread of disease between domestic and wild populations	FW-RECSU-S-1	Commercial use of domestic sheep and goats (e.g., for filming, as pack animals, etc.) must not be authorized in areas occupied by **or adjacent to** bighorn sheep or in areas where bighorn sheep travel, to prevent the spread of disease between domestic and wild populations	Modified based on public comment	Public comment
FW-ROADS-DC-4	Forest roads, bridges, and trails provide safe , **legal,** and reasonable access for traditional and cultural uses.	FW-ROADS-DC-4	Forest roads, bridges, and trails provide safe and reasonable access for traditional and cultural uses.	Deleted based on public comment	Public comment [double check this against R2C]
FW-ROADS-S-1	Motor vehicle use must be managed to occur as depicted on the most recently updated motor vehicle use map (MVUM), except as authorized (e.g., by law, permit, **agreemen**t, etc.).	FW-ROADS-S-1	Motor vehicle use must be managed to occur as depicted on the most recently updated motor vehicle use map (MVUM), except as authorized (e.g., by law, permit, etc.).	Removed based on public comment concerned that the word "agreement" was too unspecific and left the door open for handshake agreements.	Public comment
FW-ROADS-S-2	New motorized routes or areas must not be constructed in areas designated as primitive in the ROS.	FW-ROADS-S-2	New motorized routes or areas must not be constructed in areas designated as primitive **or semi-primitive non-motorized** in the **desired** ROS.	modified based on public comment to clarify road construction in ROS settings; added to clarify that ROS settings refer to desired ROS settings as seen on the desired ROS map.	Public comment
FW-ROADS-G-1	Road construction, and maintenance should incorporate best management practices (e.g., FSH 2509.22 - Soil and Water Conservation Practices Handbook).	FW-ROADS-G-1	Road **decommissioning**, construction, and maintenance should incorporate best management practices (e.g., FSH 2509.22 - Soil and Water Conservation Practices Handbook).	Modified based on public comment	Public comment
FW-ROADS-G-8	Temporary roads **that support ecosystem restoration activities, fuels management, or other short-term projects** should be closed and rehabilitated (restored to more natural vegetative conditions) upon project completion to protect watershed condition, minimize wildlife disturbance, and prevent illegal motorized use.	FW-ROADS-G-8	Temporary roads **(e.g., that support ecosystem restoration activities, fuels management, or other short-term projects)** should be closed and rehabilitated (restored to more natural vegetative conditions) upon project completion to protect watershed condition, minimize wildlife disturbance, and prevent illegal motorized use.	Change based on public comment	Public comment
FW-ROADS-G-10	If at-risk species are present and will be impacted by road maintenance activities, work should be conducted to avoid or minimize noise and habitat disturbance and outside of critical life-cycle periods (e.g., breeding or nesting for birds) or when animals may not be present (e.g., during migration).	FW-ROADS-G-10	If at-risk species are present and will be impacted by road **construction or** maintenance activities, work should be conducted to avoid or minimize noise and habitat disturbance and outside of critical life-cycle periods (e.g., breeding or nesting for birds) or when animals may not be present (e.g., during migration).	Change based on public comment	Public comment
FW-ROADS-MA-2	Within project areas, prioritize decommissioning of roads and routes that are redundant, adversely impact flow regimes, or cause resource damage	FW-ROADS-MA-2	Within project areas, prioritize decommissioning of roads and routes that are redundant, **that** adversely impact flow regimes, **that are not used by the public**, or **that** cause resource damage	Modified to clarify that road decommissioning priorities will not be targeting publically-used roads on the MVUM	Public comment

CH. 2 -- Lands and Realty -- Narrative	This section includes three subsections related to landownership management: (1) “all-lands,” which is the concept of cross-boundary management with adjacent land managers; (2) land status, which is the administration of the NFS land along with associated property rights and boundaries; and (3) lands special uses, which are authorizations for communication sites, utilities (e.g., electrical, communication, and internet lines), pipelines (e.g., natural gas, water), road access, sanitation, **recreation residences**, and commercial filming.	CH. 2 -- Lands and Realty -- Narrative	This section includes three subsections related to landownership management: (1) “all-lands,” which is the concept of cross-boundary management with adjacent land managers; (2) land status, which is the administration of the NFS land along with associated property rights and boundaries; and (3) lands special uses, which are authorizations for communication sites, utilities (e.g., electrical, communication, and internet lines), pipelines (e.g., natural gas, water), road access, sanitation, and commercial filming.	Moved all discussion of recreation residences to the Recreation Special Uses section	Internal comment
FW-XBOUND-MA-1	Collaborative relationships with adjacent landowners, users, and public land managers **(e.g., counties, states, tribes, and other federal agencies)** are actively encouraged to develop contiguous road and trail systems across multiple ownerships.	FW-XBOUND-MA-1	Collaborative relationships with adjacent landowners, users, and public land managers **(e.g., counties, states, tribes, and other federal agencies)** are actively encouraged to develop contiguous road and trail systems across multiple ownerships.	Modified based on public comment	Public comment
CH. 2 -- Lands and Realty -- Realty and Access	Desired Conditions for **Land Status** (FW-REALTY-DC) Standards for **Land Status** (FW-REALTY-S) Guidelines for **Land Status** (FW-REALTY-G) Management Approaches for **Land Status** (FW-REALTY-MA)	CH. 2 -- Realty and Access	Desired Conditions for **Realty and Access** (FW-REALTY-DC) Standards for **Realty and Access** (FW-REALTY-S) Guidelines for **Realty and Access** (FW-REALTY-G) Management Approaches for **Realty and Access** (FW-REALTY-MA)	Corrected typo	editorial
FW-REALTY-S-3	Infrastructure serving private property must be located on private **property**, existing easement, or right-of-way.	FW-REALTY-S-3	**New** infrastructure **(e.g., septic tanks, wells, utility lines)** serving private **inholdings** must be located on private property, existing easement, or right-of-way.	Clarified standard	Internal comment
FW-REALTY-MA-1	Consider encouraging the protection of existing public access **rights** and the acquisition of new **public** access oportunities to NFS lands.	FW-REALTY-MA-1	Consider encouraging the protection of existing public access and the acquisition of new access oportunities to NFS lands.	Clarified management approach	Internal comment
FW-REALTY-MA-4d	To help prevent boundary disputes **and/or** loss of **valued** NFS land and its resources.	FW-REALTY-MA-4d	To help prevent boundary disputes **or** loss of NFS land and its resources.	modified based on public comment to remove subjective value language	Public comment
CH. 2 -- Lands and Realty -- Lands Special Uses -- Narrative	Occupancy and use of NFS lands for public and private purposes, where the use is consistent with natural resource management goals, occur through the issuance of special-use authorizations and easements. A wide range of uses may be permitted including, but not limited to, water storage and transmission, electric transmission and distribution lines, communications sites, alternative and renewable energy generating facilities, research permits, **resorts, organization camps, outfitters and guides, recreational events, and large group gatherings**. Authorizations also facilitate partnerships between the Forest Service and private businesses, academia, non-governmental organizations, and individuals.	CH. 2 -- Lands and Realty -- Lands Special Uses -- Narrative	Occupancy and use of NFS lands for public and private purposes, where the use is consistent with natural resource management goals, occur through the issuance of special-use authorizations and easements. A wide range of uses may be permitted including, but not limited to, **community water systems**, water storage and transmission, electric transmission and distribution lines, communications sites, alternative and renewable energy generating facilities, research permits. Authorizations also facilitate partnerships between the Forest Service and private businesses, academia, non-governmental organizations, and individuals.	Added based on public comment concerned about communities surrounded on all sides by FS land getting the essential resources they need. Removed references to recreation special uses.	Public and internal comment
FW-LANDSU-DC-4	Vegetation within energy **rights-of-way (e.g., powerline corridors**) allows for effective maintenance and operation of associated infrastructure, while retaining enough natural ecological characteristics to sustain wildlife and their habitats.	FW-LANDSU-DC-4	Vegetation within energy **corridors** allows for effective maintenance and operation of associated infrastructure, while retaining enough natural ecological characteristics to sustain wildlife and their habitats.	Modified based on internal review to clarify the subject matter	internal comment

N/A	N/A	FW-MINERALS-MA-2	Collaborate with the New Mexico Department of Game and Fish on pre-closure inspections of underground mines to determine if cave-dependent species are present, and if so, to determine how to design and implement a closure that addresses the needs of resident or historically occurring wildlife within the constraints of meeting public safety concerns.	Added based on public comment	Public comment
FW-CAVES-MA-8	Consider limiting public access to prevent damage to cave resources or when there are unusual safety hazards.	FW-CAVES-MA-8	Consider limiting public access to prevent damage to cave resources, when there are unusual safety hazards, **or when it is necessary to prevent the spread of diseases such as white-nose syndrome**	Added based on public comment	Public comment
N/A	N/A	CH. 2 -- Scenic Resources -- Narrative	As with all desired conditions, projects implemented under the Forest Plan are designed to maintain or move toward desired conditions (see Contents of a Forest Plan in Chapter 1). Due to the forest-wide scale of mapping for SIOs, some inconsistencies may be present. Examples of this are existing features with long-term impacts that will not achieve the desired SIO in the life of the Forest Plan (e.g., roads or trails, power lines, recreation facilities, pipelines, utility corridors, etc.), or geospatial data inconsistencies, especially along SIO boundaries. Updates to improve map accuracy by resolving these inconsistencies would be administrative changes to the map.	Added based on public comment and regulation that we need to indicate that SIO is a desired condition. Also based on discussions among the three NNM forests and the R3 RO to ensure it is clear that desired SIO maps are not plan components and can be changed administratively.	Internal and public comment
CH. 2 -- Scenic Resources -- Table 3	Table row 4, both columns	N/A	DELETED	the latest handbook says Forest's shouldn't have desired SIO of very low	Internal review
N/A	N/A	FW-SCENIC-DC-6	Scenic Integrity Objectives serve as the Desired Conditions for scenery (see Appendix A, Fig. 8-west and Fig. 8-east).	Added based on public comment and regulation that we need to indicate that SIO is a desired condition. Also based on discussions among the three NNM forests and the R3 RO to ensure it is clear that desired SIO maps are not plan components and can be changed administratively.	Internal and public comment
N/A	N/A	CH. 3 -- Designated Areas -- Wilderness Areas -- San Pedro Parks Wilderness	The culturally important Nacimiento Ditch (acequia) and San Gregorio Reservoir can be found at the southern edge of the Wilderness and pre-date its establishment by Congress.	modified based on public comment	Public comment
DA-WILD-DC-2	**The public values** wilderness **for the variety of ecosystem services and values it** provides, including clean air and water, enhancing wildlife habitat, primitive recreation opportunities, and other qualities of wilderness character.	DA-WILD-DC-2	**Designated** wilderness provides **ecosystem services such as,** including clean air and water, enhancing wildlife habitat, primitive recreation opportunities, and other qualities of wilderness character.	modified based on public comment to remove subjective value language	Public comment
DA-WILD-S-3	Nonnative species must not be introduced into any wilderness area unless for fire recovery purposes.	DA-WILD-S-3	Nonnative **or invasive** species must not be introduced into any wilderness area unless for fire recovery purposes, **or to maintain pre-existing sport fish populations in San Gregorio Reservoir.**	modified based on comments from cooperating agencies concerning traditional fish stocking in the San Pedro Parks Wilderness	Public comment
DA-WILD-S-5	A Minimum Requirements Analysis must be utilized when considering prohibited uses in designated wilderness	DA-WILD-S-5	A Minimum Requirements Analysis must be utilized when considering **nonconforming or** prohibited uses in designated wilderness	Modified based on internal review and consistency	Internal review; consistency

DA-WILD-G-3	Intervention in natural processes through management actions should only occur where this would move the area toward desired conditions, preserve wilderness character, protect public health and safety within and adjacent to wilderness, or uphold other Federal laws and regulations.	DA-WILD-G-3	Intervention in natural processes through management actions should only occur where this would move the area toward desired conditions, preserve wilderness character, protect public health and safety within and adjacent to wilderness, or uphold other Federal laws and regulations, **or conform with a valid existing right.**	modified based on public comment	Public comment
CH. 3 -- Inventoried Roadless Areas -- Narrative	Inventoried roadless areas (IRAs) were identified in the 2001 Roadless Area Conservation Rule **(36 CFR Part 294).**	CH. 3 -- Inventoried Roadless Areas -- Narrative	Inventoried roadless areas (IRAs) were identified in the 2001 Roadless Area Conservation Rule **(Special Areas; Roadless Area Conservation; Final Rule, 66 Fed. Reg. 3243 (January 12, 2001).**	Modified based on internal review and consistency. This CFR does not exist in this form any longer.	Internal review
CH. 3 -- Inventoried Roadless Areas -- Narrative	Road construction, reconstruction, and timber harvest activities are limited in these areas to sustain their social and ecological roadless characteristics. These activities were selected because they commonly occur on forests and grasslands across the Nation, have the greatest likelihood of altering landscapes, cause significant landscape fragmentation, and result in immediate and long-term loss of roadless characteristics (USDA Forest Service 2000). Additional review processes at regional or national levels are required for projects involving any of these activities.	CH. 3 -- Inventoried Roadless Areas -- Narrative	Road construction, reconstruction, and timber harvest activities are limited in these areas to sustain their social and ecological roadless characteristics. These activities were selected because they commonly occur on forests and grasslands across the Nation, have the greatest likelihood of altering landscapes, cause significant landscape fragmentation, and result in immediate and long-term loss of roadless characteristics (USDA Forest Service 2000). **Activities proposed in IRAs must comply with the 2001 Roadless Area Conservation Rule, and a**dditional review processes at regional or national levels are required for projects involving any of these activities.	Modified based on internal review and consistency.	Internal review
CH. 3 -- Inventoried Roadless Areas -- Narrative	The Santa Fe NF manages 55 IRAs (see figure 4-west and figure 4-east).	CH. 3 -- Inventoried Roadless Areas -- Narrative	The Santa Fe NF manages 5**4** IRAs (see figure 4-west and figure 4-east) **totaling about 241,400 acres.**	modified based on public comment and internal review for technical corrections	Public and internal comment
DA-IRA-DC-1	Inventoried roadless areas (IRAs) encompass large, relatively undisturbed and unfragmented landscapes that **are important to biological diversity and the long-term survival of at-risk species.** They serve as safeguards against the spread of invasive plant species and provide reference areas for study and research.	DA-IRA-DC-1	Inventoried roadless areas (IRAs) encompass large, relatively undisturbed and unfragmented landscapes that **function as biological strongholds for populations of threatened and endangered species.** They serve as safeguards against the spread of invasive plant species and provide reference areas for study and research.	Modified to match the regulation language and to be consistent with other NNM forests	Internal review; consistency
FW-RNA-S-4	Special-use permits must not be **permitted**, except for research that would not lead to long term effects on the characteristics specific to the RNA.	FW-RNA-S-4	Special-use permits must not be **issued**, except for research that would not lead to long term effects on the characteristics specific to the RNA.	Word choice	editorial
CH. 3 -- Wild and Scenic Rivers -- Narrative	• Rio Chama: wild 21.5 miles; recreational 9.5 miles • Pecos River: wild 13.5 miles; recreational 7.0 miles • East Fork of the Jemez: wild 4.0 miles; scenic 5.0 miles	CH. 3 -- Wild and Scenic Rivers -- Narrative	• Rio Chama: wild 21.**6** miles; s**cenic 3.0 miles**; **4.0 miles of study river** • Pecos River: wild 13.5 miles; recreational 7.0 miles • East Fork of the Jemez: wild 4.0 miles; **recreational 4.0 miles**; scenic 5.0 miles	Corrected typo	editorial
CH. 3 -- Wild and Scenic Rivers -- Narrative	Most of the river is classified as wild (21.6 miles total: 11.2 Bureau of Land Management, and 10.4 Forest Service),) and 3.0 miles are classified as scenic.	CH. 3 -- Wild and Scenic Rivers -- Narrative	Most of the river is classified as wild (21.6 miles total: 11.2 Bureau of Land Management, and 10.4 Forest Service), 3.0 miles are classified as scenic, **and 4.0 miles are classified as a study river. The Rio Chama WSR has ORVs for scenery, recreation, fisheries, and wildlife.**	Missing information	Interal comment
DA-WSR-DC-1	Designated wild and scenic rivers are free-flowing, and possess the ORVs for which they were designated.	DA-WSR-DC-1	Designated wild and scenic rivers are free-flowing, possess the ORVs for which they were designated, **and .classifications of wild and scenic river corridors are preserved.**	Modified for consistency among three NNM forests	Consistency

DA-WSR-DC-2	The public **enjoys** water-based recreation **opportunitie**s, yet the majority of the riparian zones remain largely undisturbed from long-term recreational impacts (e.g., camping and access points).	DA-WSR-DC-2	The public has **the opportunity for** water-based recreation, yet the majority of the riparian zones remain largely undisturbed from long-term recreational impacts (e.g., camping and access points).	modified based on public comment to remove subjective value language	Public comment
DA-WSR-S-4	Road and motorized trail access to rivers must be consistent with river classification, travel management direction, and the ROS classification.	DA-WSR-S-4	Road and motorized trail access to rivers must be consistent with river classification, travel management direction, and the **desired** ROS classification.	Added to clarify that ROS settings refer to desired ROS settings as seen on the desired ROS map.	Public comment
DA-WSR-G-5	Expansion of structural improvements in recreational and scenic segments (outside designated wilderness) should be allowed as long as they meet scenic integrity objectives, and provide user access..	DA-WSR-G-5	Expansion of structural improvements, **outside of the bed and banks and above the ordinary high water mark of the river,** in recreational and scenic segments (outside designated wilderness) should be allowed as long as they meet scenic integrity objectives, and provide user access, **or facilitate resource protection.**	Clarfied guideline intent	Internal review
DA-WSR-G-6	Management activities should be consistent with the scenic integrity objectives of: a Very high in designated wild rivers, b High in designated scenic rivers, and c Moderate to high in designated recreational rivers.	DA-WSR-G-6	**Unless otherwise specific in the CRMP,** management activities should be consistent with the scenic integrity objectives of: a Very high in designated wild rivers, b High in designated scenic rivers, and c Moderate to high in designated recreational rivers.	Added based on internal comment that we needed to ensure our direction did not conflict with the CRMPs of our three designated WSRs	Internal review
DA-WSR-G-7	Management activities should be consistent with the ROS classes of: a Semi-primitive-nonmotorized to semi-primitive motorized in designated scenic rivers, and b Semi-primitive to roaded natural in designated recreational rivers.	DA-WSR-G-7a	Management activities should be consistent with the **desired** ROS classes of: **a Primitive to semi-primitive non-motorized in designated wild rivers,** b Semi-primitive-nonmotorized to semi-primitive motorized in designated scenic rivers, and c Semi-primitive to roaded natural in designated recreational rivers.	Added to clarify that ROS settings refer to desired ROS settings as seen on the desired ROS map; added based on public comment	Public comment
DA-WSR-MA-1	Coordinate planning and management of the boating aspects of the Rio Chama with the Bureau of Land Management (BLM), in consultation with the New Mexico Energy, Minerals, and Natural Resources Department; New Mexico Department of Game and Fish; and U.S. Fish and Wildlife Service.	DA-WSR-MA-1	Coordinate planning and management of the boating aspects of the Rio Chama with the Bureau of Land Management (BLM), in consultation **with interested stakeholders, such as the Bureau of Reclamation; the Army Corps of Engineers**, the New Mexico Energy, Minerals, and Natural Resources Department; New Mexico Department of Game and Fish; and U.S. Fish and Wildlife Service.	Modified based on internal comment	internal comments
DA-JNRA-DC-1	The recreational, ecological, cultural, **traditional**, and wildlife resource values for which the Jemez National Recreation Area (JNRA) was designated are maintained along with visitor access and use.	DA-JNRA-DC-1	The recreational, ecological, cultural, **religious**, and wildlife resource values for which the Jemez National Recreation Area (JNRA) was designated are maintained along with visitor access and use.	Modified to match the language in the JNRA management plan	Internal review
DA-JNRA-G-1	Management practices should not threaten the recreational, ecological, cultural, **traditional**, and wildlife resource values for which the JNRA was designated.	DA-JNRA-DC-1	Management practices should not threaten the recreational, ecological, cultural, **religious**, and wildlife resource values for which the JNRA was designated.	Modified to match the language in the JNRA management plan	Internal review
CH. 3 -- Continental Divide National Scenic Trail -- Narrative	**According to the original 1976 Study Report, "the basic goal of the trail is to provide the hiker and rider an entree to the diverse country along the Continental Divide in a manner, which will assure a high quality recreation experience while maintaining a constant respect for the natural environment."**	CH. 3 -- Continental Divide National Scenic Trail -- Narrative	**The trail was established to provide high-quality scenic, primitive hiking, and horseback riding opportunities, and to conserve natural, historic, and cultural resources along the Continental Divide National Scenic Trail corridor.**	Modified based on public comment; consistent with CNF	Public comment

DA-CDNST-MA-1	Work with volunteer groups, partners, local governments, and adjacent landowners to maintain CDNST corridors, the condition and character of the surrounding landscape, and to facilitate CDNST user support that promotes 'Leave No Trace' principles and reduces user conflict.	DA-CDNST-MA-1	Work with volunteer groups, partners, **federal, state, tribal, and** local governments, and adjacent landowners to maintain CDNST corridors, the condition and character of the surrounding landscape, and to facilitate CDNST user support that promotes 'Leave No Trace' principles and reduces user conflict.	Modified based on public comment	Public comment
DA-CDNST-MA-7	Consider evaluating proposed trail relocations or new trail segments for the CDNST, including to locate the CDNST as close as possible to the geographic Continental Divide.	DA-CDNST-MA-7	Consider evaluating proposed trail relocations or new trail segments **(e.g., using methods such as the Optimal Location Review process for substantial trail locations)** for the CDNST, including to locate the CDNST as close as possible to the geographic Continental Divide	modified based on public comment	Public comment
CH. 3 -- National Historic Trails -- Narrative	The Santa Fe NHT comprehensive management plan identified 194 high-potential sites, and 30 high-potential route segments consisting of intact wagon ruts, along the length of the trail. The 1990 Santa Fe comprehensive management plan focuses on the protection, historical interpretation, recreation use, and management of the trail corridor.	CH. 3 -- National Historic Trails -- Narrative	**The Santa Fe Trail is administered by the National Park Service (NPS), in cooperation with state and local jurisdictions, interested groups, and private landowners.** The **1990** Santa Fe NHT comprehensive management plan identified 194 high-potential sites, and 30 high-potential route segments consisting of intact wagon ruts, along the length of the trail. The 1990 Santa Fe comprehensive management plan focuses on the protection, historical interpretation, recreation use, and management of the trail corridor	Clarified narrative content	editorial
DA-NHT-MA-2	Consider inventory and identification of intact trail segments (including reroutes and alternative alignments) in coordination with the National Park Service and Bureau of Land Management, as appropriate. **These agencies are the administrative agencies for the Santa Fe Trail and El Camino Real de Tierra Adentro, and the Old Spanish Trail, respectively.** Consider working collaboratively to ensure that signs installed along the route follow the sign plan indicated in each trail's comprehensive plan.	DA-NHT-MA-2	Consider inventory and identification of intact trail segments (including reroutes and alternative alignments) in coordination with the National Park Service and Bureau of Land Management, as appropriate. Consider working collaboratively to ensure that signs installed along the route follow the sign plan indicated in each trail's comprehensive plan.	Removed confusing language.	editorial
MA-CAJA-DC-1	The natural character of the Caja del Rio supports wildlife diversity and connectivity, and maintains the cultural and archeological integrity found there, while providing interpretive opportunities for the public to learn and **value** these resources, in an area easily accessible to metropolitan Santa Fe	MA-CAJA-DC-1	The natural character of the Caja del Rio supports wildlife diversity and connectivity, and maintains the cultural and archeological integrity found there, while providing interpretive opportunities for the public to learn and **about** these resources, in an area easily accessible to metropolitan Santa Fe	modified based on public comment concerned about subjective value language	Public comment
MA-CAJA-G-1	The designation of motorized cross-country areas and the construction of permanent or temporary roads should be avoided unless required by a valid permitted activity or for management actions that would help meet desired conditions (e.g., wildlife, ecological health, or managing cultural resources). Roads should be constructed and maintained at the lowest maintenance level needed for their intended purpose. Maintenance and reconstruction should be allowed on existing roads	MA-CAJA-G-1	**Outside of the IRA, the** designation of motorized cross-country areas and the construction of permanent or temporary roads should be avoided unless required by a valid permitted activity or for management actions that would help meet desired conditions (e.g., wildlife, ecological health, or managing cultural resources). Roads should be constructed and maintained at the lowest maintenance level needed for their intended purpose. Maintenance and reconstruction should be allowed on existing roads	Modified based on internal comment	internal comment
MA-RECWILD-DC-3	Recommended wilderness management **areas are valued by the public for the** ecosystem services **they provide including** contributing to clean air and water, enhancing wildlife habitat, primitive recreation and solitude, and other wilderness characteristics.	MA-RECWILD-DC-3	Recommended wilderness management areas **provide** ecosystem services **such as** contributing to clean air and water, enhancing wildlife habitat, primitive recreation and solitude, and other wilderness characteristics.	modified based on public comment concerned about subjective value language	Public comment

CH. 3 -- Management Areas -- Canada Bonita Recommended Research Natural Area	Canada Bonito	CH. 3 -- Management Areas -- Canada Bonita Recommended Research Natural Area	Cañada Bonita	There are multiple typos in this section where Cañada Bonita is spelled Canada Bonito.	editorial
MA-CANBON-MA-3	Consider marking the boundary of the Cañada Bonito **MA** and using kiosks to educate the public about the **MA** purpose, and permitted and prohibited activities	MA-CANBON-MA-3	Consider marking the boundary of the Cañada Bonito **RNA** and using kiosks to educate the public about the **area's** purpose, and permitted and prohibited activities	MA was changed to RNA for clarification purposes.	editorial
MA-OGLEASE-G-1c	**Designated** areas encompassing and surrounding Nogales Cliff House (110 acres) and Rattlesnake Ridge (90 acres). An exception, modification, or waiver may be granted if a site-specific surface use plan of operations demonstrates that adverse impacts to the cultural resources can be completely avoided, and clearance is obtained from the forest archeologist and State Historic Preservation Officer. A public notice and comment period is required prior to waiver, exception, or modification waiver of this stipulation.	MA-OGLEASE-G-1c	**Management** areas encompassing and surrounding Nogales Cliff House (110 acres) and Rattlesnake Ridge (90 acres). An exception, modification, or waiver may be granted if a site-specific surface use plan of operations demonstrates that adverse impacts to the cultural resources can be completely avoided, and clearance is obtained from the forest archeologist and State Historic Preservation Officer. A public notice and comment period is required prior to waiver, exception, or modification waiver of this stipulation.	Modification made to correct typo	editorial
N/A	N/A	MA-OGLEASE-MA-1	Consider working with the New Mexico Department of Game and Fish to identify where and when timing limitations are implemented pertaining to deer and elk winter range and deer and elk fawning and calving habitat.	Added based on public comment	Public comment
MA-RECWILD-DC-1b	Natural processes (e.g., insects and disease, blowdown, or fires) function within their natural ecological role or are mimicked (e.g., prescribed fire). Human caused fires, which are an unnatural occurrence, are suppressed.	MA-RECWILD-DC-1b	b Natural processes (e.g., insects and disease, blowdown, or fires) function within their natural ecological role or are mimicked (e.g., prescribed fire). Human caused fires other than prescribed fire, which are an unnatural occurrence, are suppressed.	Modified based on internal review	internal review
MA-RECWILD-DC-1c	Recommended wilderness management areas provide recreation opportunities where social encounters are infrequent and occur only with individuals or small groups, so there are opportunities for solitude. Visitors experience self-reliance, challenge, and risk while enjoying freedom to pursue non-motorized or mechanized activities with only the regulation necessary to protect wilderness characteristics.	MA-RECWILD-DC-1c	Recommended wilderness management areas provide recreation opportunities where social encounters are infrequent and occur only with individuals or small groups, so there are opportunities for solitude. Visitors experience self-reliance, challenge, and risk while enjoying freedom to pursue non-motorized or **non-**mechanized activities with only the regulation necessary to protect wilderness characteristics.	Modified based on public comment	Public comment
MA-RECWILD-DC-3	Recommended wilderness management areas **are valued by the public for the** ecosystem services they provide including contributing to clean air and water, enhancing wildlife habitat, primitive recreation and solitude, and other wilderness characteristics	MA-RECWILD-DC-3	Recommended wilderness management areas **provide** ecosystem services such as contributing to clean air and water, enhancing wildlife habitat, primitive recreation and solitude, and other wilderness characteristics	modified based on public comment concerned about subjective value language	Public comment
MA-RECWILD-S-2c	New energy developments or leases shall not be permitted	MA-RECWILD-S-2c	Infrastructure related to special use permits for energy developments (e.g., wind, solar, electrical lines).	Modified based on internal comment	internal comment
MA-RECWILD-S-2d	Development of existing mining claims (e.g., hard rock mining) within a recommended wilderness area shall be subject to valid existing rights	DELETED	DELETED	Modified based on internal comment	internal comment

MA-RECWILD-S-2f	Motorized travel and uses shall not be allowed, unless specifically authorized for emergency use or the limited needs required for management of a grazing allotment.	MA-RECWILD-S-2f	**Motor vehicles, motorized equipment (e.g., chainsaws or wheelbarrows), and mechanical transport shall not be authorized with the following exceptions**: i. unless specifically authorized for emergency use, ii. **for management activities that move the area toward desired conditions while protecting existing wilderness** characteristics over the long-term, or iii. **for** the limited needs required for **authorized** management of a grazing allotment **or acequia access, which will not result in long-term degradation to wilderness characteristicst.**	modified based on public comment to clarify uses in recommended wilderness areas, and internal comment concerning recommended wilderness management	Internal and public comment
MA-RECWILD-G-2b	Mechanized uses for management activities (e.g., chainsaws or wheelbarrows) should be allowed in recommended wilderness areas if they do not permanently degrade wilderness characteristics of the area.	DELETED	DELETED	Removed as it was considered redundant with the modified MA-RECWILD-S-2f	Internal review
MA-ELIGWSR-G-3	Management activities should be consistent with the ROS classes of:	MA-ELIGWSR-G-3	Management activities should be consistent with the **desired** ROS classes of:	Added to clarify that ROS settings refer to desired ROS settings as seen on the desired ROS map	Public comment
MA-ELIGWSR-G-3a	Semi-primitive non-motorized in eligible wild rivers,	MA-ELIGWSR-G-3a	**Primitive to** Semi-primitive non-motorized in eligible wild rivers,	modified based on public comment	Public comment
Ch. 5 --Monitoring Plan	N/A	Ch. 5 --Monitoring Plan -- Monitoring Frequency	Monitoring Frequency added for all monitoring plan sections	modified based on internal and public comment	Internal and public comment
CH. 5 -- Monitoring Plan -- Watersheds -- Indicators	Number of acres treated that improve watershed condition and ecological function	CH. 5 -- Monitoring Plan -- Watersheds -- Indicators	Number of acres treated that improve watershed condition and ecological function **(e.g., watershed health in WCC Framework)**	modified based on public comment	Public comment
CH. 5 -- Monitoring Plan -- Watersheds -- Indicators	N/A	CH. 5 -- Monitoring Plan -- Watersheds -- Indicators	**Miles of decommissioned or improved roads.**	modified based on public comment	Public comment
CH. 5 -- Monitoring Plan -- Soils -- Indicators	Ground cover percent and composition	CH. 5 -- Monitoring Plan -- Soils -- Indicators	Ground cover percent and **plant species** composition	modified for clarification	internal comment
CH. 5 -- Monitoring Plan -- Riparian Areas -- Indicators	N/A	CH. 5 -- Monitoring Plan -- Riparian Areas -- Indicators	Residual vegetation	Added indicator as it can be used to determine trends over time and assess to see condition in short term	Interal comment
N/A	N/A	CH. 5 -- Monitoring Plan -- Aquatic Habitats -- Indicators	Presence of endemic, at-risk, or appropriate indicator species	Based on internal comments wanting to monitor benthic macroinvertebrates. Indicator is broader than that but still gets at the idea of monitoring species presence	internacl comment
N/A	N/A	CH. 5 -- Monitoring Plan -- Terrestrial Habitats -- Indicators	Presence of endemic, at-risk, or appropriate indicator species	Based on internal comments wanting to monitor benthic macroinvertebrates. Indicator is broader than that but still gets at the idea of monitoring species presence	internacl comment

CH. 5 -- Monitoring Plan -- Terrestrial Habitats -- Indicators	Seral state proportions and species compositions of Terrestrial ERUs	CH. 5 -- Monitoring Plan -- Terrestrial Habitats -- Indicators	Vegetation species structure, density, and composition	Removed "Seral state proportions and species compositions of Terrestrial ERUs" as it is not currently tracked on the forest and may be hard to determine at the Forest level; replacement language is more general and could be gotten from stand exam data or FIA on a larger scale.	internal comment
CH. 5 -- Monitoring Plan -- Terrestrial Habitats -- Indicators	Acres of terrestrial habitat restored or enhanced	CH. 5 -- Monitoring Plan -- Terrestrial Habitats -- Indicators	Acres of terrestrial habitat restored or enhanced; **range vegetation improved**	Added based on internal comment	internal comment
CH. 5 -- Monitoring Plan -- Grassland Ecosystems -- Title	Grassland Ecosystems	CH. 5 -- Monitoring Plan -- Woodland and Grassland Ecosystems -- Indicators	**Woodland and Grassland Ecosystems**	modifed based on internal comment	internal comment
CH. 5 -- Monitoring Plan -- Woodland and Grassland Ecosystems -- Monitoring Questions	Are management practices moving grassland **ERUs** with plan objectives toward desired conditions and increasing their resilience to future disturbances?	CH. 5 -- Monitoring Plan -- Woodland and Grassland Ecosystems -- Indicators	Are management practices moving woodland and grassland **vegetation systems** with plan objectives **(JUG, PJG, CPGB, SAGE, and MSG)** toward desired conditions and increasing their resilience to future disturbances?	modified based on public comment	Public comment
CH. 5 -- Monitoring Plan -- Woodland and Grassland Ecosystems -- Indicators	N/A	CH. 5 -- Monitoring Plan -- Woodland and Grassland Ecosystems -- Indicators	Acres of restoration treatments implemented	Added based on public comment	Public comment
CH. 5 -- Monitoring Plan -- Forested Ecosystems -- Monitoring Questions	Are management practices moving **forested ERUs** with plan objectives (MCD and PPF) toward desired conditions and increasing their resilience to future disturbances?	CH. 5 -- Monitoring Plan -- Forested Ecosystems -- Monitoring Questions	Are management practices moving **ponderosa pine (PPF) and dry mixed-conifer (MCD) forests** toward desired conditions and increasing their resilience to future disturbances?	modified based on public comment	Public comment
CH. 5 -- Monitoring Plan -- Forested Ecosystems -- Indicators	Acres of fuel and restoration treatments **returning conditions to within the natural range of variability.**	CH. 5 -- Monitoring Plan -- Forested Ecosystems -- Indicators	Acres of fuel and restoration treatments	Removed based on internal comment	internal comment
CH. 5 -- Monitoring Plan -- Pinon juniper woodlands -- Focal Species	Gray Vireo	CH. 5 -- Monitoring Plan -- Pinon juniper woodlands -- Focal Species	Juniper Titmouse	focal species changed based on public comment and consultation with USFWS	Internal and public comment
CH. 5 -- Monitoring Plan -- Invasive Species -- Plan Components	Eradicate or suppress invasive plant species on at least 300 acres annually.	CH. 5 -- Monitoring Plan -- Invasive Species -- Plan Components	Eradicate or suppress invasive plant species on at least 600 acres annually.	Corrected typo	editorial

CH. 5 -- Monitoring Plan -- Invasive Species -- Indicators	N/A	CH. 5 -- Monitoring Plan -- Invasive Species -- Indicators	BAER report findings	Modified based on internal comment	internal comment
CH. 5 -- Monitoring Plan -- Fire and Fuels -- Indicators	Number and acres of fires managed for multiple objectives by **ERU** and severity	CH. 5 -- Monitoring Plan -- Fire and Fuels -- Indicators	Number and acres of fires managed for multiple objectives by **vegetation community** and severity		
CH. 5 -- Monitoring Plan -- Fire and Fuels -- Indicators	Number and acres of high risk fires suppressed	DELETED	DELETED	Removed based on public comment	Public comment
CH. 5 -- Monitoring Plan -- Develop Sites -- Indicators	Visitor satisfaction survey	CH. 5 -- Monitoring Plan -- Develop Sites -- Indicators	NRM database surveys	Clarified what survey would be used	internal comment
CH. 5 -- Monitoring Plan -- Sustainable Livestock Grazing -- Plan Components	N/A	CH. 5 -- Monitoring Plan -- Sustainable Livestock Grazing -- Plan Components	Objective: Annually remove, improve, or reconstruct at least 5 percent of the forest's range infrastructure that is no longer necessary or in poor or non-functional condition. Guideline: Vacant or understocked allotments should be made available to permitted livestock for pasture during times or events when other active allotments are unavailable and require ecosystem recovery as a result of natural disturbances (e.g., wildfire) or management activities (e.g., vegetation restoration treatments).	Added plan components from CH. 2	editorial
CH. 5 -- Monitoring Plan -- Sustainable Livestock Grazing -- Indicators	Level of permitted livestock grazing Number of closed and vacant allotments Number of acres of rangeland **restoration** **Pastures** administered to standard **Number of permits in non-compliance**	CH. 5 -- Monitoring Plan -- Sustainable Livestock Grazing -- Indicators	Level of permitted livestock grazing **(AUM)** Number of closed and vacant allotments Number of acres of rangeland **vegetation improved** **Allotments** administered to standard **Percent of range infrastructure improved.**	Modified based on internal comments	internal comment
Glossary	N/A	Glossary	Canopy Cover. The proportion of the forest floor covered by the vertical projection of the tree crowns (Jennings et al. 1999). Canopy cover is measured using a variety of methods including spherical densiometers, funnels, moose horns, aerial photographs, and hemispherical images. Canopy cover is also known as forest canopy cover; crown cover.	Added based on public comments	Public comment
Glossary	N/A	Glossary	Catastrophic fire. Catastrophic fire can be defined from three different perspectives: economic (the cost of damage), social (how it is viewed by the public), and ecological (biological effects of the fire) (Carey and Schumann 2003). Covington and Moore (1994) defined catastrophic fire as a fire that kills a majority of the trees in the canopy in the ponderosa pine type or in any dry forest that was, in presettlement times, subject to frequent surface fires.	Added based on public comments	Public comment
Glossary	N/A	Glossary	National Trail. . One among a network of national scenic, historic, and recreation trails designated by the National Trails System Act of 1968, as amended. These trails provide for outdoor recreation needs, promote the enjoyment, appreciation, and preservation of open-air, outdoor areas and historic resources, and encourage public access and citizen involvement.	Added based on public comment; consistent with CNF	Public comment

Glossary	Recreation opportunity spectrum (ROS): A system, by which existing and desired recreation settings are defined, classified, inventoried, and monitored. Recreation settings are divided into six distinct classes (primitive, semiprimitive-nonmotorized, semiprimitive motorized, roaded natural, rural, and urban). Classifications are based on physical, social, and managerial setting characteristics. The ROS framework integrates individual recreation setting characteristics (including access and scenic character) to function collectively in providing distinct recreation opportunities.	Glossary	Recreation opportunity spectrum (ROS): A system, by which existing and desired recreation settings are defined, classified, inventoried, and monitored. Recreation settings are divided into six distinct classes (primitive, semiprimitive-nonmotorized, semiprimitive motorized, roaded natural, rural, and urban) defined below:. Classifications are based on physical, social, and managerial setting characteristics. The ROS framework integrates individual recreation setting characteristics (including access and scenic character) to function collectively in providing distinct recreation opportunities. Primitive areas are characterized by essentially unmodified natural environments of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use and mechanized equipment within primitive areas is not permitted. Primitive areas in the Santa Fe NF are found within the Pecos, San Pedro Parks, Dome, and Chama River Canyon wilderness areas. Semi-Primitive Non-Motorized (SPNM) areas are characterized by a predominantly natural or natural-appearing environment of moderate-to-	Modified based on public comment	Public comment
Glossary	Riparian management zone. The interface between land and a river or stream. Plant habitats and communities along the river margins and banks are called riparian vegetation, characterized by hydrophilic plants	Glossary	Riparian management zone. The interface between land and a river or stream. Plant habitats and communities along the river margins and banks are called riparian vegetation, characterized by hydrophilic plants. Riparian management zones (RMZ) should be defined to include either a site-appropriate delineation of the riparian area or a buffer of 100 feet from the edges (e.g., each stream bank at bankfull or edge of the water body) of all perennial and intermittent streams, lakes, seeps, springs, and other wetlands or 15 feet from the edges of the ephemeral channels. The waterbody itself is considered part of the RMZ. The exact width of RMZs may vary based on ecological or geomorphic factors or by waterbody type, but includes those areas that provide riparian and aquatic ecosystem functions and connectivity.	Modified based on public comment and to match FW-RWE-G-1	Public comment, internal consistency
Glossary	N/A	Glossary	Soil and Water Conservation Districts. Independent subdivisions of the New Mexico state government that are authorized by the Soil and Water Conservation District Act (73-20-25 through 73-20-48 NMSA 1978) to perform functions such as conserving and developing natural resource, flood control, and wildlife preservation.	Added based on public comment	public comment

Glossary	N/A	Glossary	Traditional knowledge. A way of knowing or understanding the world, including traditional ecological and social knowledge of the environment derived from multiple generations of indigenous peoples' interactions, observations, and experiences with their ecological systems. Traditional knowledge is place-based and culture-based knowledge in which people learn to live in and adapt to their own environment through interactions, observations, and experiences with their ecological system. This knowledge is generally not solely gained, developed by, or retained by individuals, but is rather accumulated over successive generations and is expressed through oral traditions, ceremonies, stories, dances, songs, art, and other means within a cultural context. It is traditional in the sense that it has been accumulated through traditions but remains relevant today. Traditional knowledge is synonymous with native knowledge (36 CFR 219.19).	Added based on public comment; consistent with CNF	public comment
Glossary	N/A	Glossary	User conflict. User conflict arises when people who are using the forest are interrupted in their activities by the activities of other forest users.	Added based on public comment	
Appendix D	N/A	Appendix D	Updated to match updated objectives and management approaches	Internal consistency	editorial
AT-RISK MA	MAs 2 and 9 need to be combined. They state basically the same thing	AT-RISK MA			
FW-TERRASH-MA-8	Work with partners to develop and implement conservation strategies beneficial to terrestrial habitats (e.g., the State Wildlife Action Plan, etc.).	FW-TERRASH-MA-8	Work with partners to develop and implement conservation strategies beneficial to terrestrial habitats and species (e.g., the State Wildlife Action Plan, NM Rare Plant Conservation Strategy, etc.).	public comment wanting us to acknowledge the NM RPCS	comment
FW-AT-RISK-G7	As part of project implementation, new populations of at-risk, as well as rare and endemic species, found within the project area should be reported and recorded.	FW-AT-RISK-G7	Prior to project implementation, surveys for new populations of at-risk, rare, or endemic species should be conducted and findings reported and recorded.	added Prior to (to encompass pre-implementation plant surveys)	comment

DEIS Location	Original Text	Updated DEIS Location	Revised Text	Rationale	Revision Need
Ch. 1 -- Purpose and Needs for Change -- 1.3.1 Restore Ecosystem Resilience	Grassland, woodland, and shrubland have significantly less grass cover and productivity as a result of the exclusion of wildfire, legacy (historical) grazing from livestock, **current livestock** and wildlife grazing, and roads.	Ch. 1 -- 1.3.1 Restore Ecosystem Resilience	Grassland, woodland, and shrubland have significantly less grass cover and productivity as a result of the exclusion of wildfire, legacy (historical) grazing from livestock, wildlife grazing, and roads.	modified based on public comments	Public comment -- C/R Edit009
Ch. 1 -- Proposed Action	The plan is strategic in nature and does not specifically authorize any projects or activities. Site specific decisions are made following project-specific proposals and analyses that comply with the forest plan, with additional opportunities for public involvement. Specific details about the proposed plan are provided in chapter 2.	Ch. 1 -- Proposed Action	The plan is strategic in nature and does not specifically authorize any projects or activities. Site specific decisions are made following project-specific proposals and analyses that comply with the forest plan, with additional opportunities for public involvement. Specific details about the proposed plan are provided in chapter 2. **Comments received during the 90-day comment period were analyzed and informed changes made to the proposed action (the Forest Plan) and EIS. Modifications made did not significantly change the proposed action, and consisted largely of editorial and technical corrections and wording clarifications. Some management approaches were added as suggested by commenters, and two plan components were removed – one due to redundancy with another plan component and one to ensure compliance with law, regulation, and policy. Because of the minor nature of modifications, a re-analysis.** **A summary of changes can be found in Appendix A (EIS, Volume 2) and a full accounting of all modifications is available in the project record.**	Update document to reflect it is the final document.	Internal review
Ch. 1 -- Decision Framework	The Forest Supervisor of the Santa Fe NF is the responsible official for this project and will make the final decision on the selected alternative for the draft forest plan. The Forest Supervisor will review the proposed action (draft forest plan), the other alternatives, and their environmental consequences, then decide which forest plan alternative best addresses the identified needs for change and issues raised during the scoping process, the requirements of the National Forest Management Act (P.L 94-588) and the Multiple Use-Sustained Yield Act (P.L. 86-517) of 1960, and the diverse needs of forest users and sustainable resource management. Based on the analysis in this DEISFEIS and subsequent public comments, the responsible official will prepare a final environmental impact statement and identify a selected alternative in a draft record of decision that will be subject to an objection process guided by direction in 36 CFR Subpart B (219.50 to 219.62). A final record of decision and accompanying forest plan will set a course of action for managing the Santa Fe NF for the next 10 to 15 years. Project-level environmental analysis will still need to be completed for specific proposals to implement the forest plan's direction.	Ch. 1 -- Decision Framework	**This environmental analysis was conducted according to the Council on Environmental Quality's (CEQ) 1978 regulations for implementing the procedural provisions of the NEPA (40 CFR §§1500-1508, as amended). The CEQ issued revised regulations for implementing the procedural provisions of the NEPA, effective September 14, 2020. The revised regulations provide the responsible official the option of conducting an environmental analysis under the 1978 regulations if the process was initiated prior to September 14, 2020 (40 CFR §1506.13, 85 FR 137, p. 43373, July 16, 2020). This EIS was initiated under the 1987 regulations, starting with the Assessment and Scoping processes and up to the beginning of the 90-day comment period on the draft Plan and draft EIS.** The Forest Supervisor of the Santa Fe NF is the responsible official for this project and will make the final decision on the selected alternative for the draft forest plan. The Forest Supervisor will review the proposed action (draft forest plan), the other alternatives, and their environmental consequences, then decide which forest plan alternative best addresses the identified needs for change and issues raised during the scoping process, the requirements of the National Forest Management Act (P.L 94-588) and the Multiple Use-Sustained Yield Act (P.L. 86-517) of 1960, and the diverse needs of forest users and sustainable resource management. Based on the analysis in this DEISFEIS and subsequent public comments, the responsible official will prepare a final environmental impact statement and identify a selected alternative in a draft record of decision that will be subject to an objection process guided by direction in 36 CFR Subpart B (219.50 to 219.62). A final record of decision and accompanying forest plan will set a course of action for managing the	Update document to reflect it is the final document.	Internal review
Ch. 1 -- Public Involvement and Collaborative Planning	Our partners and the public have valuable ideas, knowledge, opinions, and needs that can inform and improve management of the Santa Fe NF. To provide meaningful dialogue and collaboration, we have offered a variety of public engagement opportunities throughout the plan revision process. We raised awareness for plan revision by contacting over 2,000 members of the public through outreach since 2014, by setting up booths at the New Mexico capitol, 12 county fairs, 13 farmers' markets, the Balloon Fiesta, the New Mexico State Fair, the Espanola Health and Family Day, the Santa Fe High School Volunteer Expo, the Tesuque Pueblo Health and Safety Fair, and the El Camino Real National Historic Trail Grand Opening. While revising the forest plan, we hosted or participated in 232 different meetings with a wide variety of styles and focus groups with over 3,100 participants since December 2013 including: • In 2014, 16 listening sessions, two public participation workshops, and 15 assessment meetings (including one meeting targeting land grants) • From 2014 to 2015, 16 additional meetings with various organizations, including the Girl Scouts, on forest plan revision • In 2015, 13 need-for-change meetings (including two tribal meetings) • In 2016, 16 wilderness inventory and evaluation meetings, 7 field trips, and 3 open houses. The field trips gave members of the public the opportunity to see resources on the ground and have conversations with Santa Fe NF resource specialists. The open houses are informal	Ch. 1 -- Public Involvement and Collaborative Planning	Our partners and the public have valuable ideas, knowledge, opinions, and needs that can inform and improve management of the Santa Fe NF. To provide meaningful dialogue and collaboration, we have offered a variety of public engagement opportunities throughout the plan revision process. We raised awareness for plan revision by contacting over 2,000 members of the public through outreach since 2014, by setting up booths at the New Mexico capitol, 12 county fairs, 13 farmers' markets, the Balloon Fiesta, the New Mexico State Fair, the Espanola Health and Family Day, the Santa Fe High School Volunteer Expo, the Tesuque Pueblo Health and Safety Fair, and the El Camino Real National Historic Trail Grand Opening. **Legal notices were posted to the newspaper of record (The Albuquerque Journal) announcing official comment periods and the posting of official documents to the Federal Register.** **• Public Notice of Assessment -- March 6, 2014** **• Notice of Intent (NOI) – June 30, 2016** **o Correction published on July 12, 2016** **• Notice of Availability (NOA) – August 9, 2019** **Announcements for public meetings were also posted in local newspapers, local libraries, and announced on local news stations serving the communities in and around the Forest.** While revising the forest plan, we hosted or participated in 232 different meetings with a wide variety of styles and focus groups with over 3,100 participants since December 2013 including:	Update document to reflect it is the final document.	Internal review
Ch. 1 -- Issues	Issues serve to highlight effects, both anticipated and unanticipated, that may occur from the proposed action or alternatives. Addressing the variety of issues identified during the analysis provides opportunities to reduce adverse effects and compare trade-offs for the decision maker and public to understand. Issues were identified from public comments, specifically comments on the (NOI, published in the Federal Register on June 30, 2016, but additional public comments received since then as well. The public, other agencies, and tribes submitted 40 comments in response to the NOI and initial plan components. Scoping comments were analyzed and divided into 32 initial categories that were then grouped into the 5 categories presented here. We developed alternatives around those issues that involved unresolved conflicts during the iterative development of the proposed plan (see chapter 2 for more information on alternative development).	Ch. 1 -- Issues	Issues serve to highlight effects, both anticipated and unanticipated, that may occur from the proposed action or alternatives. Addressing the variety of issues identified during the analysis provides opportunities to reduce adverse effects and compare trade-offs for the decision maker and public to understand. Issues were identified from public comments, specifically comments on the (NOI, published in the Federal Register on June 30, 2016, but additional public comments received since then as well. The public, other agencies, and tribes submitted 40 comments in response to the NOI and initial plan components. Scoping comments were analyzed and divided into 32 initial categories that were then grouped into the 5 categories presented here. We developed alternatives around those issues that involved unresolved conflicts during the iterative development of the proposed plan (see chapter 2 for more information on alternative development). **Comments on the draft Plan and DEIS have continued to reflect these issues.**	Update document to reflect it is the final document.	Internal review

Ch. 2 -- Alternative Development	In June 2015, the NOI was published in the Federal Register. This included the needs for change identified from the Assessment and public comments in fall 2014. These scoping comments were used to identify an initial set of significant issues that helped drive the development of the initial plan components, alternative themes, and management areas. These preliminary **materials related to the draft forest plan (alternative 2) and DEIS** were released to the public, cooperating agencies, and forest employees for review and feedback in January and March 2017 as part of an unofficial comment period. Under direction from the forest supervisor, the interdisciplinary team took into account all feedback and used it to refine the draft forest plan (alternative 2, the proposed action) and alternatives 3 and 4. We continued modifying the alternatives as we received other comments during open houses held throughout 2017 and 2018.	Ch. 1 -- Alternative Development	In June 2015, the NOI was published in the Federal Register. This included the needs for change identified from the Assessment and public comments in fall 2014. These scoping comments **received during this period** were used to identify an initial set of significant issues that helped drive the development of the initial plan components, alternative themes, and management areas. These preliminary **materials** were released to the public, cooperating agencies, and forest employees for review and feedback in January and March 2017 **as part of an unofficial comment period**. Under direction from the forest supervisor, the interdisciplinary team took into account all feedback and used it to refine the draft forest plan (alternative 2, the proposed action) and alternatives 3 and 4. We continued modifying the alternatives as we received other comments during open houses held throughout 2017 and 2018. **In August 2019, the NOA for the draft Plan and DEIS was published in the Federal Register, initiating a 90-day comment period. The comments we received during this period were analyzed and informed the final version of the Forest Plan .**	Clarify meaning of text	Internal review
Ch. 2 -- Alternatives Considered in Detail -- 2.2.1 Elements Common to All Alternatives	• Incorporate amendments with plan direction that includes restrictions within the oil and gas leasing area as per the 2008 Oil and Gas Leasing EIS and 2012 supplement and restricts geothermal leasing as per the 2018 Geothermal EIS;	Ch. 1 -- Alternatives Considered in Detail -- 2.2.1 Elements Common to All Alternatives	• Restrict geothermal leasing and include the Oil and Gas Leasing Management Area, with plan direction that includes restrictions for oil and gas leasing2. 2 The 1987 Forest Plan was amended by the 2008 Oil and Gas Leasing EIS and 2012 supplement, and by the 2018 Geothermal EIS.	Clarify meaning of text	Internal review
Ch. 2 -- Alternatives Considered in Detail -- 2.2.1 Elements Common to All Alternatives	• **Include limited** numbers and acres of management areas **that are included to provide** specific **focus**	Ch. 1 -- Alternatives Considered in Detail -- 2.2.1 Elements Common to All Alternatives	• **Limit the** numbers and acres of management areas to **those areas of the forest that require** specific **management direction beyond that provided by forestwide plan components**	Clarify meaning of text	Internal review
N/A	N/A	Ch. 1 -- Alternatives Considered in Detail -- 2.2.1 Elements Common to All Alternatives	A crosswalk comparison between alternative 1 (the 1987 Forest Plan) and alternative 2 (the draft Plan) can be found in Appendix M (located in volume three of the FEIS).	Provide consistency between documents and clarify where information is located.	Internal review
Ch. 2 -- Alternatives Considered in Detail -- 2.2.3 Alternative 1 - 1987 Forest Plan -- 2.2.3.3 Issue C: Support Traditional and Cultural Ways of Life	Alternative 1 includes no standards or guidelines that address traditional and cultural uses of the Santa Fe NF. The 2012 Travel Management EIS amended the 1987 Forest Plan, limiting motorized access across the forest to designated routes. Road decommissioning objectives discussed in issue B are substantial, but countered by objectives for additional road construction and reconstruction. In this plan, motorized access would be constantly in flux with roads being added and removed every year.	Ch. 2 -- Alternatives Considered in Detail -- 2.2.3 Alternative 1 - 1987 Forest Plan -- 2.2.3.3 Issue C: Support Traditional and Cultural Ways of Life	Alternative 1 includes no standards or guidelines that address traditional and cultural uses of the Santa Fe NF. The 2012 Travel Management EIS amended the 1987 Forest Plan, limiting motorized access across the forest to designated routes. Road decommissioning objectives discussed in issue B are substantial, but countered by objectives for additional road construction and reconstruction. In this plan, motorized access **for traditional and cultural uses (which could include non-public access roads)** would be constantly in flux with roads being added and removed every year.	Clarify meaning of text	Internal review
Ch. 2 -- Alternatives Considered in Detail -- 2.2.4 Alternative 2 - The Proposed Action	Alternative 2 is the proposed action outlined in the draft forest plan, which focuses on healthy ecological function that supports multiple uses. The interdisciplinary team developed this alternative iteratively with the public to address the needs for change and issues identified in chapter 1. It is designed to address needs for restored forested and non-forested vegetation, incorporating natural wildfires, wildlife terrestrial and aquatic habitat, improved riparian management zones, watershed health, improved rangeland forage and infrastructure, sustainable recreation, and desires for recommended wilderness and other special areas. This alternative maintains current levels of use while improving infrastructure and increasing the level of restoring ecological health. There are many plan components in alternatives 2, 3, and 4 where the majority of the language is similar across two or all three alternatives. Therefore, parts of plan components that change between alternatives are in bold, to better highlight the differences.	Ch. 2 -- Alternatives Considered in Detail -- 2.2.3 Alternative 2 - The Proposed Action	Alternative 2 is the proposed action outlined in the draft forest plan, which focuses on healthy ecological function that supports multiple uses. The interdisciplinary team developed this alternative iteratively with the public to address the needs for change and issues identified in chapter 1. It is designed to address needs for restored forested and non-forested vegetation, incorporating natural wildfires, wildlife terrestrial and aquatic habitat, improved riparian management zones, watershed health, improved rangeland forage and infrastructure, sustainable recreation, and desires for recommended wilderness and other special areas. This alternative maintains current levels of use while improving infrastructure and increasing the level of restoring ecological health. **It is considered the environmentally preferred alternative due to expected long-term improvement of ecological conditions it will support across the forest.** There are many plan components in alternatives 2, 3, and 4 where the majority of the language is similar across two or all three alternatives. Therefore, parts of plan components that change between **the three action alternatives** are in bold, to better highlight the differences.	Clarify meaning of text	Internal review
Ch. 2 -- Alternatives Considered in Detail -- 2.2.4 Alternative 2 - The Proposed Action -- Figure 8	The map was not fully labeled in the original version.	Ch. 2 -- Alternatives Considered in Detail -- 2.2.3 Alternative 2 - The Proposed Action -- Figure 8	The map was updated to have labels for all the management areas.	Improve readability of map	Internal review
Ch. 2 -- Alternatives Considered in Detail -- 2.2.5 Alternative 3 -- 2.2.5.1 Issue A: Watershed and Vegetation Restorations	Similar to alternative 2, this alternative includes the guideline promoting allowing naturally ignited wildfires to burn. However, the guideline that directs suppressing naturally ignited fire in certain situations is removed as it does not meet the alternative theme of promoting natural processes.	Ch. 2 -- Alternatives Considered in Detail -- 2.2.5 Alternative 3 -- 2.2.5.1 Issue A: Watershed and Vegetation Restorations	Similar to alternative 2, this alternative includes the guideline promoting allowing naturally ignited wildfires to burn. However, the guideline that directs suppressing naturally ignited fire in certain situations **(when outside the natural range of variability or where necessary to protect life, investments, and valuable resources)** is removed as it does not meet the alternative theme of promoting natural processes.	Clarify meaning of text	Internal review
Ch. 2 -- Alternatives Considered but Eliminated from Detailed Study -- 2.3.8 A climate change focused alternative	Although none of the alternatives is specifically designated as a climate change alternative, all alternatives incorporated climate change into the resource analyses, and pinpointed desired conditions and management objectives that increase the ecological resiliency of the Santa Fe NF to predicted changes in climate. For example, the vegetation management practices outlined under all alternatives are capable of reducing drought stress and the risk of uncharacteristic fire, both of which are consequences of changing temperature and precipitation regimes combined with uncharacteristically dense and fuel-laden forests. Management practices outlined in the draft forest plan are also designed to allow for the flexibility to address changing conditions over time.	Ch. 2 -- Alternatives Considered but Eliminated from Detailed Study -- 2.3.8 A climate change **and carbon sequestration** focused alternative	Although none of the alternatives is specifically designated as a climate change alternative, all alternatives incorporated climate change into the resource analyses, and pinpointed desired conditions and management objectives that increase the ecological resiliency of the Santa Fe NF to predicted changes in climate. For example, the vegetation management practices outlined under all alternatives are capable of reducing drought stress and the risk of uncharacteristic fire, both of which are consequences of changing temperature and precipitation regimes combined with uncharacteristically dense and fuel-laden forests. **Management to maximize carbon sequestration over other ecosystem services is not a goal of the Plan. As with climate change in general, the Plan manages for overall ecosystem function and resiliency, which implies inherent levels of carbon sequestration. The Forest Service is required to design new facilities that reduce energy usage to reduce greenhouse gas emissions.** Management practices outlined in the Forest Plan are also designed to allow for the flexibility to address changing conditions over time.	modified based on public comments	Public comment -- Clim002/003

N/A	N/A	Ch. 2 -- Alternatives Considered but Eliminated from Detailed Study -- 2.3.11 An alternative focused on road decommissioning and restoration	During the 90-day public comment period on the draft Plan and DEIS, commenters expressed support for a fifth alternative that includes direction for higher rates and scales of road decommissioning and restoration than is detailed in any of the alternatives that were presented in the DEIS. Road impacts and mitigations are analyzed under all alternatives. The alternatives examine reasonable direction given the issues raised during scoping and existing resources for the Santa Fe NF. The Forest's management is constrained by the Multiple Use Sustained Yield Act (MUSYA), which requires that we support the both the ecological and the socioeconomic uses of the forest. Access to the forest is an important aspect of such uses as recreation and traditional community uses (e.g., gathering fuelwood). In addition, the 2012 Planning Rule provides direction that the planning process, plan components, and other plan content should be within the Agency's authority and the fiscal capability of the unit (§ 219.1(g)). Forest budgets (that affect expenditures and salaries) are distributed by an act of Congress and may fluctuate over the life of the management plan, but are not dictated by the management plan or alternatives. Road restoration, decommissioning, and maintenance are some of the most expensive work on the forest. This budgetary strain, in addition to limits on personnel, time, and access would make it unreasonable to increase road management objectives beyond those analyzed under alternative 3.	modified based on public comments	Public comment -- RD047
Ch. 2 -- Comparison of Effects of Alternatives -- Table 2 -- Non-Forested ERUs-Juniper Grasslands (JUG), Piñon-Juniper Grasslands (PJG), Sagebrush Shrublands (SAGE), Colorado Plateau/Great Basin Grassland (CPGB), Montane Subalpine Grassland (MSG) -- Seral State (JUG & PJG) -- Related Effects	Related Effects--Without improvement toward historic disturbances, natural seral state shifts often lead to tree encroachment on grasslands, which alters species compositions, increases canopy **closure**, and changes grass and forb productivity.	Ch. 2 -- Comparison of Effects of Alternatives -- Table 2 -- Non-Forested ERUs-Juniper Grasslands (JUG), Piñon-Juniper Grasslands (PJG), Sagebrush Shrublands (SAGE), Colorado Plateau/Great Basin Grassland (CPGB), Montane Subalpine Grassland (MSG) -- Seral State (JUG & PJG)	Related Effects--Without improvement toward historic disturbances, natural seral state shifts often lead to tree encroachment on grasslands, which alters species compositions, increases canopy **cover**, and changes grass and forb productivity.	From Ken Reese comments on posters used in public meetings: For alt 1/3: How can we say that "sustainable quantities, may fail to provide beneficial effects" if our objective is to provide .177000 CCF/decade (17.7MMCF and this alt will proved 20.2 MMCF/decade. From Devin Black: Will need to clarify within the DEIS analysis. That the benefits are there across the board, its just that the magnitude changes.	Internal review
Ch. 2 -- Comparison of Effects of Alternatives -- Table 4 -- Forest Products -- Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- Alternative 1	Sustainable quantities, **may fail to provide** beneficial effects	Ch. 2 -- Comparison of Effects of Alternatives -- Table 4 -- Forest Products -- Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- Alternative 1	Sustainable quantities provides beneficial effects**, but not to the scale of alt.2**	modified based on internal comment	Internal review
Ch. 2 -- Comparison of Effects of Alternatives -- Table 4 -- Forest Products -- Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- Alternative 3	Sustainable quantities, **may fail to provide** beneficial effects	Ch. 2 -- Comparison of Effects of Alternatives -- Table 4 -- Forest Products -- Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- Alternative 3	Sustainable quantities provides beneficial effects**, but not to the scale of alt.2**	modified based on internal comment	Internal review
Ch. 2 -- Comparison of Effects of Alternatives -- Table 6	Table 6. Comparison of the forest management areas among the four alternatives by acres (unless otherwise noted).	Ch. 2 -- Comparison of Effects of Alternatives -- Table 6	Table 6. Comparison of the forest management areas among the four alternatives by acres **(unless otherwise noted). This table excludes the forest wide management areas from Alternative 1, which are not present in any of the action alternatives and can be viewed in Table 1.**	Clarify why the forestwide management areas from the 1987 Plan are not listed	Internal review
Ch. 2 -- Comparison of Effects of Alternatives -- Table 6	Oil and Gas Leasing area listed as 0 acres under alternative 1	Ch. 2 -- Comparison of Effects of Alternatives -- Table 6	Oil and Gas Leasing area listed as 208,831 acres under alternative 1, with added footnote: **Plan components for this management area are present in Alternative 1, but it is not termed a management area.**	Technical correction of acreage	Internal review
Ch. 2 -- Comparison of Effects of Alternatives -- Table 6	N/A	Ch. 2 -- Comparison of Effects of Alternatives -- Table 6	Added Canada Bonita Proposed Research Natural Area, Recommended Wildnerness Management Areas, and Eligible Wild and Scenic Rivers to the table, with acreage (or miles) by alternative.	Technical correction to ensure all management areas listed	Internal review
Ch. 2 -- Comparison of Effects of Alternatives -- Table 6	Management areas are represented in each alternative by presence/absence	Ch. 2 -- Comparison of Effects of Alternatives -- Table 6	Management areas are represented in each alternative by acreage.	modified based on internal comment	Internal review

Ch. 3 -- Analysis Methodology -- 3.1.1 Assumptions Common to All Resources	The following assumptions were common to all resources in this analyses: • No direct environmental effects will result from the administrative action of developing or revising the forest plan. Proposed actions will not be approved or otherwise authorized based on the content of the forest plan; however, they must be consistent with plan components, which include desired conditions, objectives, standards, guidelines, designation of management areas, suitability determinations, and monitoring requirements. • Components of the forest plan reflect current Federal, State, and local laws and regulations, and USDA and Forest Service policy. • Effects analyses are applicable for the expected life of the forest plan, which is estimated to be from 10 to 15 years, unless otherwise noted in chapter 3. • Individual proposed actions are not evaluated in this draft environmental impact statement nor are they defined by specific location, design, and extent. Rather, the effects described are generic and are used to compare the relative effects of alternatives on a forestwide basis. • Monitoring during the life of the plan will be used to measure the continued applicability of plan components and the need for future amendments. • There may be minor, but acceptable discrepancies between the surveyed acres from the Santa Fe NF administrative boundary and the GIS layer used to delineate ERU boundaries. For additional resource-specific assumptions, please see the individual resource of interest within this document.	Ch. 3 -- Analysis Methodology -- 3.1.1 Assumptions Common to All Resources	The following assumptions were common to all resources in this analyses: • No direct environmental effects will result from the administrative action of developing or revising the forest plan. Proposed actions will not be approved or otherwise authorized based on the content of the forest plan; however, they must be consistent with plan components, which include desired conditions, objectives, standards, guidelines, designation of management areas, suitability determinations, and monitoring requirements. • Components of the forest plan reflect current Federal, State, and local laws and regulations, and USDA and Forest Service policy. • Effects analyses are applicable for the expected life of the forest plan, which is estimated to be from 10 to 15 years, unless otherwise noted in chapter 3. • Individual proposed actions are not evaluated in this draft environmental impact statement nor are they defined by specific location, design, and extent. Rather, the effects described are generic and are used to compare the relative effects of alternatives on a forestwide basis. • Monitoring during the life of the plan will be used to measure the continued applicability of plan components and the need for future amendments. • There may be minor, but acceptable discrepancies between the surveyed acres from the Santa Fe NF administrative boundary and the GIS layer used to delineate ERU boundaries. **• Models have inherent shortcomings, but provide a relevant basis to compare alternatives and examine potential future trends based on curated inputs.** **• Funding levels would be similar to the past 5 years.**		
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.1 Ecological Response Units -- Table 7	Piñon-juniper woodland	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.1 Ecological Response Units -- Table 7	Piñon-juniper woodland **(persistent)**	modified based on public comments	Public comment
N/A	N/A	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions	VDDT modeling was also used to compare the percentage of closed-canopy states of certain vegetation types in the Forest as a proxy for canopy cover by alternative using vegetation treatment objectives (acres) as inputs (EIS, Appendix B). VDDT is not spatially explicit and does not model opening size, but it does contain three descriptive density classes: openings, open forest states, and closed forest states. In VDDT modeling, openings have canopy cover less than 10 percent, "open" states have canopy cover between 10 and 30 percent, and "closed" states have canopy cover greater than 30 percent.	Inserted this short paragraph to lend some context for the canopy cover indicator. There were several comments based on our definition of closed canopy (30%) which was derived from the use of these models. Hopefully adding this will help clarify that for the reader.	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions	Forest vegetation specialists used LANDFIRE (2010) and TNC (2007) models based off of a historic reference period to determine the degree of departure of fire regimes, including fire frequency and severity.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions	Forest vegetation specialists used LANDFIRE (2010) and TNC (2007) models based off of a historic reference period to determine the degree of departure of fire regimes, including fire frequency and severity **and calibrated the models using local data where possible**.	modified based on public comments	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- Table 9	Piñon-juniper woodland	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- Table 9	Piñon-juniper woodland **(persistent)**	modified based on public comments	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.2 Assumptions	There is no surrogate for the application of fire in frequent fire ecosystems. It is critical to ecological restoration. Low-severity fire **replaces** less than 25 percent of dominant overstory, moderate severity fire **replaces** 25 to 75 percent, and high-severity fire **replaces** over 75 percent of the dominant overstory.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.2 Assumptions	There is no surrogate for the application of fire in frequent fire ecosystems. It is critical to ecological restoration. Low-severity fire **causes mortality in** less than 25 percent of dominant overstory, moderate severity fire **causes mortality in** 25 to 75 percent, and high-severity fire **causes mortality in** over 75 percent of the dominant overstory.	IDT review determined replaces is not the best word to use.	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- Table 10	Canopy **closure**, fire return intervals, fire severity	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- Table 10	Canopy **cover**, fire return intervals, fire severity	modified based on public comments	public comments
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- 3.2.2.3.1 Seral State Diversity	Forested ERUs typically have a greater stem density and higher canopy **closure** than was characteristic of historic forests.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- 3.2.2.3.1 Seral State Diversity	Forested ERUs typically have a greater stem density and higher canopy **cover** than was characteristic of historic forests.	modified based on public comments	public comments
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- 3.2.2.3.2 Canopy Cover	Canopy cover indicates the degree of space available between dominant vegetation canopies.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- 3.2.2.3.2 Canopy Cover	Canopy cover indicates the degree of space available between dominant vegetation canopies **or the proportion of the forest floor covered by the vertical projection of the tree crowns (Jennings et al. 1999)**.	modified based on public comments	public comment

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- 3.2.2.3.6 Fire and Fuels -- 3.2.2.3.6.2 Fire Severity	Fire severity is broadly defined as the degree of ecosystem change induced by fire (Ryan and Noste 1985). Fire severity has been described by the degree of tree mortality (Agee 1993); or the degree to which fires consume organic biomass on and within the soil (Neary et al. 2005), change in color of ash and soil (Ryan and Noste 1985), or a combination of these fire effects. Three broad categories of fire severity have been identified based on the physical characteristics of fire and the fire adaptations of vegetation: low, moderate (mixed), and high severity (Agee 1993). For describing fire regimes, severity is typically defined based upon degree of mortality in overstory vegetation even where the dominant overstory is shrubs (shrublands) or grasses (grasslands). Low-severity fires typically remove less than 25 percent of overstory vegetation, moderate-severity fires remove between 25 and 75 percent of overstory vegetation, and high-severity fires remove over 75 percent of the overstory vegetation, often leading to "stand replacement."	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- 3.2.2.3.6 Fire and Fuels -- 3.2.2.3.6.2 Fire Severity	Fire severity is broadly defined as the degree of ecosystem change induced by fire (Ryan and Noste 1985). Fire severity has been described by the degree of tree mortality (Agee 1993); or the degree to which fires consume organic biomass on and within the soil (Neary et al. 2005), change in color of ash and soil (Ryan and Noste 1985), or a combination of these fire effects. Three broad categories of fire severity have been identified based on the physical characteristics of fire and the fire adaptations of vegetation: low, moderate (mixed), and high severity (Agee 1993). For describing fire regimes, severity is typically defined based upon degree of mortality in overstory vegetation even where the dominant overstory is shrubs (shrublands) or grasses (grasslands). Low-severity fires typically remove less than 25 percent of overstory vegetation, moderate-severity fires remove between 25 and 75 percent of overstory vegetation, and high-severity fires remove over 75 percent of the overstory vegetation, often leading to "stand replacement." **A combination of fire severities is typical of most fire regimes.**	modified based on public comments	public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- 3.2.2.3.6 Fire and Fuels -- 3.2.2.3.6.4 Fire Regime Condition Class -- Table 11 (Table footnotes)	3 Forest and woodland ERUs from Reynolds et al. 2013; grassland and shrubland ERUs from Wright and Bailey 1982, Dick-Peddie 1993).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Analysis, Methods and Assumptions -- 3.2.2.3 Vegetation Resource Indicators -- 3.2.2.3.6 Fire and Fuels -- 3.2.2.3.6.4 Fire Regime Condition Class -- Table 11 (Table footnotes)	3 Forest and woodland ERUs from Reynolds et al. 2013; grassland and shrubland ERUs from Wright and Bailey 1982, Dick-Peddie 1993). **Multiple other relevant fire literature sources were also used to determine reference fire regimes of vegetation types in the SFNF and are included in Table 9 on page 32 of USDA FS 2016a.**	Added to clarify where regimes came from.	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.2 Fire Severity	Many of our frequent-fire ecosystems are currently departed from historic conditions, placing them in a high-risk state with increased susceptibility to **catastrophic** disturbance (see Vegetation-ERUs below).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.2 Fire Severity	Many of our frequent-fire ecosystems are currently departed from historic conditions, placing them in a high-risk state with increased susceptibility to **large-scale, uncharacteristically severe** disturbance (see Vegetation-ERUs below).	The word catastrophic should be used more deliberately	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.2 Fire Severity	Fire history and fire modeling in the Santa Fe NF shows fires occurring across the range of severities. The absence of fire across much of the forest for decades to centuries has had mixed effects on vegetative communities. Some areas have responded to fire's absence with increased fuel loads and dense canopy structures that are flammable and highly susceptible to burning with stand-replacing severity, especially under extreme drought conditions (e.g., ponderosa pine, dry mixed conifer). Other areas have also incurred changes in species compositions, ground cover, or fuels, which have lowered their natural capacity to carry fire (e.g., Colorado Plateau Great Basin grasslands, montane subalpine grasslands). Typically, fire severity is a product of fuel loading and moisture, vegetative structure and composition, and climatic variables including relative humidity, wind, and temperature. Areas with high fuel loads and dense vegetative structure are more likely to experience high-severity fire if fuel moisture is sufficiently low. Many of our frequent-fire ecosystems are currently departed from historic conditions, placing them in a high-risk state with increased susceptibility to large-scale, detrimental disturbance (see Vegetation-ERUs below).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.2 Fire Severity	Fire history and fire modeling in the Santa Fe NF shows fires occurring across the range of severities. The absence of fire across much of the forest for decades to centuries has had mixed effects on vegetative communities. Some areas have responded to fire's absence with increased fuel loads and dense canopy structures that are flammable and highly susceptible to burning with stand-replacing severity, especially under extreme drought conditions (e.g., ponderosa pine, dry mixed conifer). Other areas have also incurred changes in species compositions, ground cover, or fuels, which have lowered their natural capacity to carry fire (e.g., Colorado Plateau Great Basin grasslands, montane subalpine grasslands). Typically, fire severity is a product of fuel loading and moisture, vegetative structure and composition, and climatic variables including relative humidity, wind, and temperature. Areas with high fuel loads and dense vegetative structure are more likely to experience high-severity fire if fuel moisture is sufficiently low. Many of our frequent-fire ecosystems are currently departed from historic conditions, placing them in a high-risk state with increased susceptibility to large-scale, detrimental disturbance (see Vegetation-ERUs below). **A range of fire severities is typical of many of the fire regimes associated with the vegetation communities comprising the Santa Fe NF (discussed in greater detail by ERU). While large-scale high severity patches of fire can have substantial detrimental effects (discussed in Environmental Consequences section) in forest types where that extent and severity is not a part of the natural fire regime (e.g., MCD, PPF), over small, localized areas, mixed to high severity patches can be beneficial. Small patches of mixed- high severity fire create greater heterogeneity in the landscape by**	Add a short paragraph (2-3 sentences) more fully explaining mixed severity fire on SFNF. Added based on comments that we failed to recognize the importance of high-severity fire.	Public comment
N/A	N/A	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.2 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.2 Fire Severity	(Hutto et al. 2016)	Added to lit cited	public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.3 Fire Regimes	Each ERU in the Santa Fe NF has a natural fire regime that is integral to its ecological functions and processes (table 11; Affected Environment-Vegetation)	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.3 Fire Regimes	Each ERU in the Santa Fe NF has a natural fire regime that is integral to its ecological functions and processes (table 11; Affected Environment-Vegetation), **which have been determined through historical accounts, tree ring studies, and other documented empirical evidence (see: Table 9 on page 32 of USDA FS 2016a).**	modified to address concerns about BASI in regards to our vegetation analysis.	public comment

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.3 Fire Regimes	Each ERU in the Santa Fe NF has a natural fire regime that is integral to its ecological functions and processes (table 11; Affected Environment-Vegetation), which have been determined through historical accounts, tree ring studies, and other documented empirical evidence (see: Table 9 on page 32 of USDA FS 2016a). Information about past fire regimes can help guide and inform land managers about current and future fire regime characteristics and patterns. This information can also identify historical forest structure characteristics that drive the strategic planning of fire and natural resource management, and aid in assessing risk and ecological conditions (Morgan et al. 2001). Through fire regime and vegetation history research we can illustrate change in disturbance regimes through time, identify knowledge gaps, and learn how climate, topography, vegetation, and land use influence fire regimes.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.1 Fire and Fuels -- 3.2.3.1.3 Fire Regimes	Each ERU in the Santa Fe NF has a natural fire regime that is integral to its ecological functions and processes (table 11; Affected Environment-Vegetation), which have been determined through historical accounts, tree ring studies, and other documented empirical evidence (see: Table 9 on page 32 of USDA FS 2016a). Information about past fire regimes can help guide and inform land managers about current and future fire regime characteristics and patterns. This information can also identify historical forest structure characteristics that drive the strategic planning of fire and natural resource management, and aid in assessing risk and ecological conditions (Morgan et al. 2001). Through fire regime and vegetation history research we can illustrate change in disturbance regimes through time, identify knowledge gaps, and learn how climate, topography, vegetation, and land use influence fire regimes. **For instance, recent research compiled from data collected within the Santa Fe Watershed, has shown that historically fire occurred every 1 to 10 years in dry conifer forests, typically burning in early summer (Margolis et al. 2020, currently unpublished). Further, fire events were observed during years of drought that were preceded by wet years (Margolis et al. 2020, currently unpublished), which allow for an increase in fine fuels (e.g., grasses) that dry and senesce during drought conditions.**	modified based on public comments	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.5 Uncharacteristic Fire	These trees create dense canopy **closure**, as they are not self-pruning like many fire-adapted species, and form a continuous ladder of fuels from ground to crown.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.1 Fire and Fuels -- 3.2.3.1.5 Uncharacteristic Fire	These trees create dense canopy **cover**, as they are not self-pruning like many fire-adapted species, and form a continuous ladder of fuels from ground to crown.	**This change was made throughout the EIS**	public comment, internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.1 Fire and Fuels -- 3.2.3.1.5 Uncharacteristic Fire	After years of fire suppression, the understory and midstory of frequent fire forests have been colonized by fire sensitive species such as white fir. These trees create dense canopy cover, as they are not self-pruning like many fire-adapted species, and form a continuous ladder of fuels from ground to crown. With over-stocked, dense forest stands and excessive forest floor fuel loadings characterizing many areas within the Santa Fe NF, the current risk of uncharacteristic, **potentially catastrophic**, fire is elevated. The Santa Fe NF, and surrounding areas, have experienced extreme fires in recent decades, most notably the Cerro Grande (2000) and the Los Conchas (2011) Fires. Uncharacteristic wildfires can be described as extreme fires that burn with stand-replacing severity **and create** negative impacts both within the burned area and beyond. A stand-replacing fire kills all, or nearly all, of the vegetation present on site through the combination of crown fires consuming all photosynthetic material and live buds, and surface fires penetrating the soil with extreme heat.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.1 Fire and Fuels -- 3.2.3.1.5 Uncharacteristic Fire	After years of fire suppression, the understory and midstory of frequent-fire forests have been colonized by fire sensitive species such as white fir. These trees create dense canopy cover, as they are not self-pruning like many fire-adapted species and form a continuous ladder of fuels from ground to crown. With over-stocked, dense forest stands and excessive forest floor fuel loadings characterizing many areas within the Santa Fe NF, the current risk of uncharacteristically high-severity fire is elevated **where these conditions are not within the natural range of variation (NRV) for the ERU. Uncharacteristic wildfires can be described as high-severity fires that burn over large areas or over long durations within vegetation types where this fire behavior or size is divergent from the natural fire regime and can cause resource damage. For example, the occurrence of high-severity fire outside of small or localized areas is uncharacteristic of frequent-fire, low- to mixed-severity regimes (e.g., PPF, MCD); large-scale, stand-replacing fire may also be uncharacteristic within infrequent-fire regimes that include variably sized patches of stand-replacing fire as part of the natural disturbance cycle (e.g., SFF, MCW) based on the patch size of high-severity fire exceeding the NRV.** A stand-replacing fire kills all, or nearly all, of the vegetation present on site through the combination of crown fires consuming all photosynthetic material and live buds, and surface fires penetrating the soil with extreme heat. **When wildland fire causes extensive ecological damage (and often also negative socio-economic impacts) they are referred to as catastrophic fires. The Santa Fe NF, and surrounding areas, have experienced some instances of catastrophic fire in recent decades, most notably the Cerro Grande (2000) and the Los Conchas (2011) Fires.**	Consciously removing several instances of catastrophic throughout the analysis based on comments received. Where used it is intentional and a defintion is added to the glossary.	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2 Vegetation	Vegetative communities within the Santa Fe NF have been shaped over time by natural and human-caused disturbances, management practices, climatic factors, land uses, insects, diseases, and introduced species. Some of these plant communities have maintained a degree of similarity to their historic conditions, while others have changed significantly over time. Across the forest, departure from reference conditions continues to trend further away from reference conditions. Because of this, forest managers assessed the vegetative communities (ERUs) and determined desired conditions to guide plan objectives, guidelines, and standards within each **ERU.** The remainder of this section describes the current condition of the predominant terrestrial ERUs in the Santa Fe NF and relates the degree of departure from historic reference conditions based on data in LANDFIRE 2010. A more detailed description of each ERU can be found in the Ecological Response Units of the Southwestern United States document (Wahlberg et al. 2014) and the Santa Fe NF Forest Plan Assessment Report (USDA Forest Service 2016a).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2 Vegetation	Vegetative communities within the Santa Fe NF have been shaped over time by natural and human-caused disturbances, management practices, climatic factors, land uses, insects, diseases, and introduced species. Some of these plant communities have maintained a degree of similarity to their historic conditions, while others have changed significantly over time. Across the forest, departure from reference conditions continues to trend further away from reference conditions. Because of this, forest managers assessed the vegetative communities (ERUs) and determined desired conditions to guide plan objectives, guidelines, and standards within each **unique forest, woodland, or grassland system comprising the Santa Fe NF.** The remainder of this section describes the current condition of the predominant terrestrial ERUs in the Santa Fe NF and relates the degree of departure from historic reference conditions based on data in LANDFIRE 2010 **calibrated with local data and relevant scientific information.** A more detailed description of each ERU can be found in the Ecological Response Units of the Southwestern United States document (Wahlberg et al. 2014) and the Santa Fe NF Forest Plan Assessment Report (USDA Forest Service 2016a).	By expanding here on how we used LANDFIRE, we may avoid future contention or at least add a bit of clarification.	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	This ERU spans a variety of semi-mesic environments at elevations between **6,000 and 9,500 feet**, situated between ponderosa pine, piñon-oak, or piñon-juniper woodlands at lower elevations and spruce-fir forests above.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	This ERU spans a variety of semi-mesic environments at elevations between **approximately 8,500 and 11,000 feet,** situated between ponderosa pine, piñon-oak, or piñon-juniper woodlands at lower elevations and spruce-fir forests above.	Edited based on TEUI	Internal review

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	Frequent-fire mixed conifer (dry mixed conifer) is the most extensive and prevalent ecological vegetation type found in the forest, accounting for 429,967 acres (25.6 percent) of the lands the Santa Fe NF administers. This **ERU** spans a variety of semi-mesic environments at elevations between approximately 8,500 and 11,000 feet, situated between ponderosa pine, piñon-oak, or piñon-juniper woodlands at lower elevations and spruce-fir forests above. This type was historically dominated by ponderosa pine in an uneven-aged open forest structure (less than 30 percent tree cover), with minor occurrence of aspen, Douglas-fir, and southwestern white pine. Aspen in this **ERU** occurs within dissimilar inclusions and not as a seral stage forest type as with the mixed conifer with aspen (MCW) **ERU**. More shade-tolerant conifers, such as Douglas fir, white fir, and blue spruce tend to increase in cover during late succession, and would not typically achieve dominance under the characteristic historic fire regime (0–35 year return interval; low-mixed severity; LANDFIRE 2010). These species could, however, achieve dominance in localized settings where aspect, soils, and other factors limited the spread of surface fire. Understory vegetation is typically composed of forbs, grasses, and shrubs.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	Frequent-fire mixed conifer (dry mixed conifer) is the most extensive and prevalent ecological vegetation type found in the forest, accounting for 429,967 acres (25.6 percent) of the lands the Santa Fe NF administers. **The mixed conifer frequent fire vegetation type *(the MCW ERU)*** spans a variety of semi-mesic environments at elevations between approximately 8,500 and 11,000 feet, situated between ponderosa pine, piñon-oak, or piñon-juniper woodlands at lower elevations and spruce-fir forests above. This type was historically dominated by ponderosa pine in an uneven-aged open forest structure (less than 30 percent tree cover), with minor occurrence of aspen, Douglas-fir, and southwestern white pine. Aspen in **this forest type** occurs within dissimilar inclusions and not as a seral stage forest type as with the mixed conifer with aspen (MCW) **forest type.** More shade-tolerant conifers, such as Douglas fir, white fir, and blue spruce tend to increase in cover during late succession, and would not typically achieve dominance under the characteristic historic fire regime (0–35 year return interval; low-mixed severity; LANDFIRE 2010). These species could, however, achieve dominance in localized settings where aspect, soils, and other factors limited the spread of surface fire. Understory vegetation is typically composed of forbs, grasses, and shrubs.	Utilize less “ERU” wordage and more veg type, veg community, etc language within type descriptions based on lengthy comments against ERU usage. Maybe put "ERU" in parantheses after "mixed conifer frequent fire vegetation type" and in the rest of the places where we replace ERU.	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	Fire exclusion and past management activities including selective logging (“high-grade”), fragmentation (e.g., construction of roads), fire suppression, and intensive historical grazing in dry mixed-conifer forests have contributed to higher stand densities, and altered species composition from mature, large ponderosa pine and Douglas-fir trees to more shade-tolerant, less fire-resistant species such as white fir (Moore et al. 2004, Romme et al. 2009a, Reynolds et al. 2013). Disturbance was more frequent (every 5 to 21 years) before fire exclusion, where adjacent dry forest and woodland types provided ignition sources (Floyd et al. 2009, Romme et al. 2009b). Despite fire management practices shifting focus in the late 20th century to include the use of naturally ignited wildfires and prescribed fires to achieve resource objectives, the area affected by prescribed fire has been relatively small (approximately 2,000 acres per year over the last 15 years, Forest Activity Tracking System database). This represents only 0.33 percent of all MCD and PPF acres found in the forest; allowing tree densities, fuel loadings, and fuel continuity to result in landscape-scale crown fires in many areas. Current fire return intervals are highly departed from reference conditions (86 percent), as is fire severity. Nearly 40 percent of the MCD landscape now results in high severity fire, and 30 percent occurs at moderate or mixed-severity. Historically, these two severity categories only accounted for roughly 25 percent of all acres burned in this vegetation type (table 13).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	Fire exclusion and past management activities including selective logging (“high-grade”), fragmentation (e.g., construction of roads), fire suppression, and intensive historical grazing in dry mixed-conifer forests have contributed to higher stand densities, and altered species composition from mature, large ponderosa pine and Douglas-fir trees to more shade-tolerant, less fire-resistant species such as white fir (Moore et al. 2004, Romme et al. 2009a, Reynolds et al. 2013). Disturbance was more frequent (every 5 to 21 years) before fire exclusion, where adjacent dry forest and woodland types provided ignition sources (Floyd et al. 2009, Romme et al. 2009b). Despite fire management practices shifting focus in the late 20th century to include the use of naturally ignited wildfires and prescribed fires to achieve resource objectives, the area affected by prescribed fire has been relatively small (approximately 2,000 acres per year over the last 15 years, Forest Activity Tracking System database). This represents only 0.33 percent of all MCD and PPF acres found in the forest; allowing tree densities, fuel loadings, and fuel continuity to result in landscape-scale crown fires in many areas. Current fire return intervals are highly departed from reference conditions (86 percent), as is fire severity. Nearly 40 percent of the MCD landscape now results in high severity fire, and 30 percent occurs at moderate or mixed-severity. Historically, these two severity categories only accounted for roughly 25 percent of all acres burned in this vegetation type (table 13). **Recent research compiled from historical tree-ring data collected from fire-scarred trees within the Santa Fe Watershed, has shown that fire-related mortality due to mixed- to high severity fire was rare within the study area (comprised of MCD and PPF forest types); the rare occurrences were predominantly documented within the dry mixed conifer forest type (Margolis et al. 2020, currently unpublished).**	Citation as is now is included in references	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	Over 70 percent of the MCD landscape in the Santa Fe NF is currently in the large tree, closed-canopy state, a departure from the 5 percent that occurred historically in this seral state when MCD was dominated by open, uneven-aged forests (table 13). Overall, seral state proportions have shifted significantly (74 percent departure) from reference condition proportions. The biggest shift has been from stands of medium-sized trees with varied canopy closure to large trees and closed canopies. There have also been reductions in seral state proportions of early successional states including grass/recently burned lands, and aspen deciduous states (table 13).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	Over 70 percent of the MCD landscape in the Santa Fe NF is currently in the large tree, closed-canopy state, a departure from the 5 percent that occurred historically in this seral state when MCD was dominated by open, uneven-aged forests (table 13). Overall, seral state proportions have shifted significantly (74 percent departure) from reference condition proportions. The biggest shift has been from **reference conditions** of stands **comprised** of medium-sized trees with varied canopy closure to t**hose characterized by** large trees and closed canopies. **The areas that have been classified by the models as states H, I, L, and M indicate that large (dominant) trees are present on the landscape, along with many small to mid-diameter stems creating closed conditions meeting the reference state.** There have also been reductions in seral state proportions of early successional states including grass/recently burned lands, and aspen deciduous states (table 13).	modified based on public comments	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	Coarse woody debris loading is highly departed (78 percent) from reference levels of 15.2 tons per acre at the current average of 69.3 tons per acre within the MCD **ERU.**	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.1 Mixed Conifer Frequent Fire (MCD)	Coarse woody debris loading is highly departed (78 percent) from reference levels of 15.2 tons per acre at the current average of 69.3 tons per acre within the MCD **forest type.**	Utilize less “ERU” wordage and more veg type, veg community, etc language within type descriptions based on lengthy comments against ERU usage.	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.2 Ponderosa Pine (PPF)	Ponderosa pine forests are found at elevations ranging from **6,000 to 9,000** feet on igneous, metamorphic, and sedimentary parent soils with good aeration and drainage.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.2 Ponderosa Pine (PPF)	Ponderosa pine forests are found at elevations ranging from **5,000 to 9,000** feet on igneous, metamorphic, and sedimentary parent soils with good aeration and drainage.	Edited to TEUI- matches plan	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.2 Ponderosa Pine (PPF)	A historical fire regime of frequent, low-severity surface fires (every 4 to 30 years) is widely documented, but there is growing evidence of limited scale areas of historical mixed-severity and high severity fires, especially for steep slopes in areas of heterogeneous topography (Morgan et al. 2001, Iniguez et al. 2009, **Williams and Baker 2012**).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.2 Ponderosa Pine (PPF)	A historical fire regime of frequent, low-severity surface fires (every 4 to 30 years) is widely documented, but there is growing evidence of limited scale areas of historical mixed-severity and high severity fires, especially for steep slopes in areas of heterogeneous topography (Morgan et al. 2001, Iniguez et al. 2009, **Meyer and Frechette 2010**).	Add new literature based on pulic comments	Public comment

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.2 Ponderosa Pine (PPF) -- Table 14	Table row: D, E2 Medium to large trees (10 inches or larger dbh), open canopy 0 1 Table row: G2 Small trees (5 to 9.9 inches dbh), closed canopy 0 1	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.2 Ponderosa Pine (PPF) -- Table 14	Table row: D, E2 Medium to large trees (10 inches or larger dbh), open canopy 0 **1**1 Table row: G2 Small trees (5 to 9.9 inches dbh), closed canopy 0 **1**1	Typo both d,e2 and g2 should be 11.	Editorial
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.3 Spruce-fir (SFF)	Spruce-fir forest is the third largest **ERU** in the Santa Fe NF, covering 250,481 acres (14.9 percent). Also known as subalpine conifer forests, spruce-fir forests range in elevation from 9,500 to over 11,500 feet, giving it the highest elevation range of any major forest type in the southwestern United States. The spruce-fir forest occurs along gentle to very steep mountain slopes and is comprised almost entirely of Engelmann spruce and corkbark fir (subalpine fir) associations, which dominate the higher-elevations (10,500 to over 11,500 feet) of this **ERU**. In lower elevations (9,500 to 10,500 feet), spruce-fir forests resemble wet mixed conifer forests with Douglas-fir and quaking aspen. Here, aspen occur as a seral component that may be co-dominant or dominant in the canopy. Common understory species in SFF include spruce-fir fleabane, currants, maple, huckleberry, sedges, and clover. Montane-subalpine grasslands can also be found scattered throughout the spruce-fir forest type.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.3 Spruce-fir (SFF)	Spruce-fir forest is the third largest **vegetative community** in the Santa Fe NF, covering 250,481 acres (14.9 percent). Also known as subalpine conifer forests, spruce-fir forests range in elevation from 9,500 to over 11,500 feet, giving it the highest elevation range of any major forest type in the southwestern United States. The spruce-fir forest occurs along gentle to very steep mountain slopes and is comprised almost entirely of Engelmann spruce and corkbark fir (subalpine fir) associations, which dominate the higher-elevations (10,500 to over 11,500 feet) of this **forest type**. In lower elevations (9,500 to 10,500 feet), spruce-fir forests resemble wet mixed conifer forests with Douglas-fir and quaking aspen. Here, aspen occur as a seral component that may be co-dominant or dominant in the canopy. Common understory species in SFF include spruce-fir fleabane, currants, maple, huckleberry, sedges, and clover. Montane-subalpine grasslands can also be found scattered throughout the spruce-fir forest type.	Utilize less “ERU” wordage and more veg type, veg community, etc language within type descriptions based on lengthy comments against ERU usage. **This change was made throughout the Vegetation and fire section.**	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.4 Mixed Conifer with Aspen (MCW)	In the Rocky Mountains and Madrean Provinces, wet mixed-conifer forests may be found at elevations between **6,500 and 10,000** feet, situated between ponderosa pine forests below and spruce-fir forests above.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2. 1 Forested ERUs -- 3.2.3.2.1.4 Mixed Conifer with Aspen (MCW)	In the Rocky Mountains and Madrean Provinces, wet mixed-conifer forests may be found at elevations between **9,000 and 11,000** feet, situated between ponderosa pine forests below and spruce-fir forests above.	Edited to TEUI- matches plan	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2.2 Non-Forested ERUs -- 3.2.3.2.2.1 Pinon-Juniper Grass (PJG)	Piñon-juniper grass covers 43,356 acres (2.6 percent) of the Santa Fe NF, generally found **between 4,500 to 7,500 feet.**	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2.2 Non-Forested ERUs -- 3.2.3.2.2.1 Pinon-Juniper Grass (PJG)	Piñon-juniper grass covers 43,356 acres (2.6 percent) of the Santa Fe NF, generally found **at lower elevations (e.g., under 7,500 ft.).**	Edited to TEUI- matches plan	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2.2 Non-Forested ERUs -- 3.2.3.2.2.3 Sagebrush Shrubland (SAGE)	Sagebrush shrubland sites are usually found on deep, well-drained valley bottom soils **between 4,800 and 5,800 feet** in elevation, where precipitation ranges between 10 to 18 inches per year.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2.2 Non-Forested ERUs -- 3.2.3.2.2.3 Sagebrush Shrubland (SAGE)	Sagebrush shrubland sites are usually found on deep, well-drained valley bottom soils **between 6,200 and 7,800 feet** in elevation, where precipitation ranges between 10 to 18 inches per year. While big sagebrush (Artesmisia tridentata) is the dominant species, other shrubs and grasses and forbs are present. Historically, sagebrush shrublands had patchy areas of shrubs with a combination of forbs, bunchgrasses, and bare soil patches interspersed in the understory openings (Boyle and Reeder 2005). **Sagebrush shrublands can provide important habitat for large game animals.** Unfortunately, the loss and degradation of these systems is widely documented in the West (Saab et al. 1995).	Edited to TEUI- matches plan; modified based on public comment	Internal review and public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2.3 Non-Forested ERUs without Plan Components -- 3.2.3.2.3.1 Pinon-juniper woodlands (PJO)	Piñon-juniper woodlands/PJO	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2.3 Non-Forested ERUs without Plan Components -- 3.2.3.2.3.1 Pinon-juniper woodlands (PJO)	**Persistent** piñon-juniper woodlands/PJO	Added "persistent" for clarification fo what this ERU is. Modification made throughout the EIS.	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2.3 Non-Forested ERUs without Plan Components -- 3.2.3.2.3.1 Pinon-juniper woodlands (PJO)	Persistent piñon-juniper woodlands, which cover 231,508 acres (13.8 percent) of the Santa Fe NF, are found on lower slopes of mountains and in upland, rolling hills at approximately **4,500 to 7,500** feet in elevation.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2.3 Non-Forested ERUs without Plan Components -- 3.2.3.2.3.1 Pinon-juniper woodlands (PJO)	Persistent piñon-juniper woodlands, which cover 231,508 acres (13.8 percent) of the Santa Fe NF, are found on lower slopes of mountains and in upland, rolling hills at approximately **5,500 to 8,500** feet in elevation.	Edited to TEUI- matches plan	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment -- 3.2.3.2.3 Non-Forested ERUs without Plan Components -- 3.2.3.2.3. Alpine and Tundra (ALP)	Alpine and tundra are typically found **in elevations over 10, 600 feet**, on a range of slopes, flat ridges, saddles, and high basins (Wahlberg et al. 2014).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.3 Affected Environment - 3.2.3.2.3 Non-Forested ERUs without Plan Components -- 3.2.3.2.3. Alpine and Tundra (ALP)	Alpine and tundra are typically found on a range of slopes, flat ridges, saddles, and high basins (Wahlberg et al. 2014), **and typically occur at elevations over 11,800 ft. on the Santa Fe NF.**	Edited to TEUI- matches plan	Internal review

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.1 Insects and Disease	Environmental factors such as drought, wildfires, or vegetation conditions strongly influence behavior of native insects and pathogens. While native insects and pathogens affect their host plants to varying degrees, some are considered key species due to their ability to cause widespread or severe losses. Bark beetles are the leading cause of dying trees, and the recent outbreaks across western North America are the largest and most severe in recorded history (Bentz et al. 2009). The National Insect and Disease Risk Map is a strategic project to assess the potential risk of tree mortality from insects and diseases across the United States over a 15-year time period. These insect and disease risk models evaluate the potential loss of basal area based upon current forest conditions. Future projections estimate that bark beetle and other forest insect activity will increase because of climate changes such as elevated temperatures, frequent drought, and the current high-risk conditions (dense vegetation) of western forests (Bentz et al. 2010).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.1 Insects and Disease	Environmental factors such as drought, wildfires, or vegetation conditions strongly influence behavior of native insects and pathogens. **For example, in reference to the bark beetle outbreaks of the mid 2000's in Colorado, Romme et al. (2006) suggest that the combination of drought and hot summers likely stressed the trees and made them more susceptible to bark beetles; the warm summers may have accelerated the growth and reproduction of some bark beetle species (e.g., spruce beetles and piñon Ips); and the mild winters produced very little mortality of beetle larvae.** While native insects and pathogens affect their host plants to varying degrees, some are considered key species due to their ability to cause widespread or severe losses. Bark beetles are the leading cause of dying trees, and the recent outbreaks across western North America are the largest and most severe in recorded history (Bentz et al. 2009). The National Insect and Disease Risk Map is a strategic project to assess the potential risk of tree mortality from insects and diseases across the United States over a 15-year time period. These insect and disease risk models evaluate the potential loss of basal area based upon current forest conditions. Future projections estimate that bark beetle and other forest insect activity will increase because of climate changes such as elevated temperatures, frequent drought, and the current high-risk conditions (dense vegetation) of western forests (Bentz et al. 2010).	Added based on comments received	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.1 Insects and Disease	After significant bark beetle infestations, forest stands may or may not return to original conditions; **dead trees can increase wildfire potential**; and the loss of keystone tree species affects associated wildlife or vegetation	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.1 Insects and Disease	After significant bark beetle infestations, forest stands may or may not return to original conditions; and the loss of keystone tree species affects associated wildlife or vegetation	Removed based on comments received	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.1 Insects and Disease	N/A	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.1 Insects and Disease	These relationships between subsequent disturbances such as drought and beetle outbreaks were described in Hart et al. (2015), and termed "linked disturbances," which are instances where one disturbance can alter the severity, extent, or occurrence probability of a subsequent disturbance. The authors also reported evidence that climate and forest structure drive beetle outbreaks, but a lack of suitable host trees provides resistance to subsequent infestations (Hart et al. 2015). Thus, vegetation treatments that reduce suitable host trees following severe drought may reduce beetle outbreak potential and increase residual stand vigor.	Added based on comments received; linked disturbance to glossary and paper citation to the references in V2.	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.3 Climate Change	The most important determinant of fire severity is fuel condition (Parks et al. 2018a and 2018b), while two other important factors for determining fire regimes are vegetation type (or ERU) and weather or climate patterns. Fire history and dendrochronological studies provide ample evidence of past relationships between fire and climate. That evidence makes it clear that a changing climate will profoundly affect the frequency and severity of fires and change vegetation structure and composition as a response to more severe or prolonged droughts (Westerling et al. 2006, Bowman et al. 2009, Flannigan et al. 2009). Warmer temperatures, more variable precipitation, and increased moisture deficit are likely to stress vegetation, and make high-elevation forests more vulnerable to fire, insects, and disease. Fires will likely be more frequent and widespread. Insects such as western spruce budworm and spruce beetle are likely to proliferate in stressed and weakened trees, and mortality is likely to increase as a result of these outbreaks. However, past spruce budworm outbreaks have been associated with periods of increased moisture (Ryerson et al. 2003), and warmer, more drought-prone conditions could reduce budworm activity and temper the severity of future outbreaks. Root rot is also likely to increase in stressed forests. Increased tree mortality due to extended or severe drought, will change fuel structure and dead fuel loads, further impacting fire frequency and severity.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.3 Climate Change	The most important determinant of fire severity is fuel condition (Parks et al. 2018a and 2018b), while two other important factors for determining fire regimes are vegetation type (or ERU) and weather or climate patterns. Fire history and dendrochronological studies provide ample evidence of past relationships between fire and climate. That evidence makes it clear that a changing climate will profoundly affect the frequency and severity of fires and change vegetation structure and composition as a response to more severe or prolonged droughts (Westerling et al. 2006, Bowman et al. 2009, Flannigan et al. 2009). Warmer temperatures, more variable precipitation, and increased moisture deficit are likely to stress vegetation, and make high-elevation forests more vulnerable to fire, insects, and disease. Fires will likely be more frequent and widespread. Insects such as western spruce budworm and spruce beetle are likely to proliferate in stressed and weakened trees, and mortality is likely to increase as a result of these outbreaks. However, past spruce budworm outbreaks have been associated with periods of increased moisture (Ryerson et al. 2003), and warmer, more drought-prone conditions could reduce budworm activity and temper the severity of future outbreaks. Root rot is also likely to increase in stressed forests. Increased tree mortality due to extended or severe drought, will change fuel structure and dead fuel loads, further impacting fire frequency and severity. **However, for southwestern forests persistent cool season droughts extending 3 or more years may result in fuels being a limiting factor and prohibit large fires, as fires in this region are often associated with cool season moisture and the flush of vegetative growth that follows greater moisture availability (Margolis et al. 2017).**	Added based on comments and literature received	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.3 Climate Change	The increased burning of forests wouldwill also result in carbon release, changing western forests from carbon sinks to carbon sources, contributing to increased greenhouse gas emissions (Westerling et al. 2006, Flannigan et al. 2009).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.4 Drivers and Stressors -- 3.2.4.3 Climate Change	**Changes in climate are likely to alter vegetation communities over time which may be amplified by increases in the size and severity of fire. The combination of climate change and subsequent fire also impact other facets of ecosystems and the provisioning of services they provide, such as biodiversity and carbon strorage (Hurteau et al. 2014)**. The increased burning of forests wouldwill also result in carbon release, changing western forests from carbon sinks to carbon sources, contributing to increased greenhouse gas emissions (Westerling et al. 2006, Flannigan et al. 2009). **Vegetation treatments to reduce the risk of fire can negatively impact carbon stores in the short term through the removal of trees via thinning or prescribed fire treatments, but these effects can be minimized by optimizing areas for thinning treatment where the greatest threats of fire are and applying prescribed fire elsewhere (Krofcheck et al. 2019). By optimizing treatments, the remaining carbon can be stabilized by moderating future wildfire behavior (Hurteau 2017) and may even increase carbon storage under certain climate models particularly if the pace of restoration is quickened (McCauley et al. 2019).**	Added a paragraph about carbon with some new supporting research to address climate change comments	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.1 Effects Common to All Alternatives -- 3.2.5.1.6 Indicator: Fire	Plan desired conditions strive to return natural fire regimes to fire-adapted ERUs to restore proper structures and species compositions that will result in increased ecosystem function and resiliency. Plan objectives or standards and guidelines call for the use of planned fire or managed natural fire for resource benefit and to reduce the risk of uncharacteristic fire. Within certain areas in the forest, containment targets for wildfires of certain sizes or severities change (see effects by alternatives for ERUs). Also, under plan standards and guidelines, an archaeologist or para-archaeologist is consulted before creating containment lines in areas of cultural significance to avoid damage to cultural resources or artifacts. Similarly, wildlife biologists are consulted to avoid damage to habitat for **species of concern.**	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.1 Effects Common to All Alternatives -- 3.2.5.1.6 Indicator: Fire	Plan desired conditions strive to return natural fire regimes to fire-adapted ERUs to restore proper structures and species compositions that will result in increased ecosystem function and resiliency. Plan objectives or standards and guidelines call for the use of planned fire or managed natural fire for resource benefit and to reduce the risk of uncharacteristic fire. Within certain areas in the forest, containment targets for wildfires of certain sizes or severities change (see effects by alternatives for ERUs). Also, under plan standards and guidelines, an archaeologist or para-archaeologist is consulted before creating containment lines in areas of cultural significance to avoid damage to cultural resources or artifacts. Similarly, wildlife biologists are consulted to avoid damage to habitat for species of **conservation** concern **(SCC) or other potentially sensitive terrestrial, aquatic, avian, or plant species.**	Clarification of the term "species of concern."	Editorial

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.1 Effects Common to All Alternatives -- 3.2.5.1.6 Indicator: Fire	Ecologically, fires create a mosaic of habitats across the landscape, leading to structural and compositional diversity in vegetation, where fire-adapted species are promoted and fire-sensitive species are suppressed. These changes result in species compositions more indicative of potential natural vegetation types and historic reference conditions over timeV30. Areas that burn with lower severity tend to remain relatively dense in structure, while areas that burn with higher severities become increasingly open. Fire often reduces small-diameter stems that create dense midstory and understory conditions that prohibit the growth of grasses and forbs in the understory. By removing these dense small diameter stems and creating growing space in the understory, fire encourages increased response from grasses and (lesser so) forbs. Furthermore, as fire consumes vegetation and fuels, it releases ash and nutrients into the air and onto the soil, which are important to regenerate grasses, forbs and shrubs, and, in turn, help restore natural fire regimesV31.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.1 Effects Common to All Alternatives -- 3.2.5.1.6 Indicator: Fire	Ecologically, fires create a mosaic of habitats across the landscape, leading to structural and compositional diversity in vegetation, where fire-adapted species are promoted and fire-sensitive species are suppressed. These changes result in species compositions more indicative of potential natural vegetation types and historic reference conditions over timeV30. Areas that burn with lower severity tend to remain relatively dense in structure, while areas that burn with higher severities become increasingly open **and create patches of complex early-seral forest conditions important to meet habitat requirements or to meet other requirements for the persistence of many plant and animal species.** Fire often reduces small-diameter stems that create dense midstory and understory conditions that prohibit the growth of grasses and forbs in the understory. By removing these dense small diameter stems and creating growing space in the understory, fire encourages increased response from grasses and (lesser so) forbs. Furthermore, as fire consumes vegetation and fuels, it releases ash and nutrients into the air and onto the soil, which are important to regenerate grasses, forbs and shrubs, and, in turn, help restore natural fire regimesV31.	Added to present benefits of high severity patches based on comments received	Public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.1 Effects Common to All Alternatives -- 3.2.5.1.6 Indicator: Fire	Under highly departed conditions, many areas of the Santa Fe NF are at risk for uncharacteristic fire.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.1 Effects Common to All Alternatives -- 3.2.5.1.6 Indicator: Fire	Under highly departed conditions, many areas of the Santa Fe NF **such as ponderosa pine and dry mixed conifer forests** are at risk for uncharacteristic fire.	Clarification of what areas are at risk	Editorial
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.1 Effects Common to All Alternatives -- 3.2.5.1.6 Indicator: Fire	Under highly departed conditions, many areas of the Santa Fe NF such as ponderosa pine and dry mixed conifer forests are at risk for uncharacteristic fire. Uncharacteristic, high-severity fires would result in complete canopy and ground cover removal, dramatically affecting watersheds and water resources by altering the important processes of evapotranspiration, interception, surface flow, and subsurface flow (Swanson 1981)V38. Furthermore, the size of patches burned with high-severity fire is important in determining the probability of fire-induced flooding events or debris flows, where increased patch sizes result in increased impacts (Wohl and Pearthree 1991, Cannon and Reneau 2000). Recent large stand-replacing fires in the southwestern United States have produced runoff and erosion events as much as two orders of magnitude greater than found under pre-fire conditions (Veenhuis 2002). High-severity fire can degrade water quality 50 kilometers downstream with increased turbidity of runoffs, limited dissolved oxygen levels, and altered pH and conductivity rates (Dahm et al. 2015)V39.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.1 Effects Common to All Alternatives -- 3.2.5.1.6 Indicator: Fire	Under highly departed conditions, many areas of the Santa Fe NF such as ponderosa pine and dry mixed conifer forests are at risk for uncharacteristic fire. Uncharacteristic, high-severity fires would result in complete canopy and ground cover removal, dramatically affecting watersheds and water resources by altering the important processes of evapotranspiration, interception, surface flow, and subsurface flow (Swanson 1981)V38. Furthermore, the size of patches burned with high-severity fire is important in determining the probability of fire-induced flooding events or debris flows, where increased patch sizes result in increased impacts (Wohl and Pearthree 1991, Cannon and Reneau 2000). Recent large stand-replacing fires in the southwestern United States have produced runoff and erosion events as much as two orders of magnitude greater than found under pre-fire conditions (Veenhuis 2002). High-severity fire can degrade water quality 50 kilometers downstream with increased turbidity of runoffs, limited dissolved oxygen levels, and altered pH and conductivity rates (Dahm et al. 2015)V39. **However, small or localized patches of high severity fire increase landscape heterogeneity and can provide for unique habitat requirements for many species that require early-seral stages or edge habitats.**	Clarification of the benefits of high-severity fire	public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.1 Alternative 1 -- 3.5.2.2.1.2 Indicator: Canopy Cover	Alternative 1 shows the least movement toward **desired** open-conditions of all alternatives, with the canopy **closure** at 77 percent after 50 years (figure 14) (V4). Thus, the understory conditions are likely to remain impaired due to the minimal reduction (11 percent) in closed-canopied states (V5). This small amount of change would not reap the benefits of grass-forb interspaces (V6), as the openings would likely not be sufficient to develop this desired condition of the forest plan.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.1 Alternative 1 -- 3.5.2.2.1.2 Indicator: Canopy Cover	Alternative 1 shows the least movement toward **greater proportions of** open-**state** conditions of all alternatives, with **the percentage of closed-canopy states on the landscape** at 77 percent after 50 years (figure 14) (V4). Thus, the understory conditions are likely to remain impaired due to the minimal reduction (11 percent) in closed-canopied states (V5). This small amount of change would not reap the benefits of grass-forb interspaces (V6), as the openings would likely not be sufficient to develop this desired condition of the forest plan.	modified based on public and internal comments	public comment, internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.1 Alternative 1 -- 3.5.2.2.1.2 Indicator: Canopy Cover	Figure 14. Mixed Conifer-Frequent Fire ERU Canopy **Closure**. Closed conditions are when woody canopy cover exceeds 30 percent.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.1 Alternative 1 -- 3.5.2.2.1.2 Indicator: Canopy Cover	Figure 14. Mixed Conifer-Frequent Fire ERU Canopy **Cover**. Closed **state** conditions are when woody canopy cover exceeds 30 percent **(ESSA 2006).**	Added citation	Public comment, editorial
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.1 Alternative 1 -- 3.5.2.2.1.2 Indicator: Old Growth and Associated Components	The existing forest plan has standards and guidelines for using harvesting practices that encourage old growth development. While alternative 1 has the highest proportion of late successional stages, and the greatest number of acres contributing to old-growth components, coarse woody debris levels remain highly departed (table 28). While there are standards and guidelines for snag retention and coarse woody debris levels to provide quality wildlife habitat (V20, 23) following timber harvests or fuelwood acquisition under the guidance of the existing forest plan, high seral state departure, excess amounts of coarse woody debris, and presence of other surplus fuel (needle litter, low stature living and dead plants) would threaten the development of old-growth forest components and existing large trees, especially in the instance of severe fire (V22-22, 38). Additionally, retaining a high proportion of **late-successional stages maintains** highly closed canopies, high stand densities, and stressed conditions, all of which further limit the development and maintenance of old-growth forest components and increases the risk of uncharacteristic fireV64.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.1 Alternative 1 -- 3.5.2.2.1.2 Indicator: Old Growth and Associated Components	The existing forest plan has standards and guidelines for using harvesting practices that encourage old growth development. While alternative 1 has the highest proportion of late successional stages, and the greatest number of acres contributing to old-growth components, coarse woody debris levels remain highly departed (table 28). While there are standards and guidelines for snag retention and coarse woody debris levels to provide quality wildlife habitat (V20, 23) following timber harvests or fuelwood acquisition under the guidance of the existing forest plan, high seral state departure, excess amounts of coarse woody debris, and presence of other surplus fuel (needle litter, low stature living and dead plants) would threaten the development of old-growth forest components and existing large trees, especially in the instance of severe fire (V22-22, 38). Additionally, retaining a high proportion of **stands with** highly closed canopies, high stand densities, and stressed conditions, all of which further limit the development and maintenance of old-growth forest components and increases the risk of uncharacteristic fireV64.	ID Team changes. Changed in comment appendix too.	Internal review

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.2 Alternative 2 -- 3.2.5.2.2.2.1 Indicator: Seral State	In alternative 2, Plan objectives for mechanically thinning and burning MCD would result in the second greatest improvement toward desired conditions as seral state departure moves from high (74) to moderate (**47)** after 50 years (figure 13), leaving it slightly less than alternative 1. However, at 20 years, alternative 2 departure **is a full 10** percent lower than alternatives 1 and 3 **at roughly 38 percen**t.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.2 Alternative 2 -- 3.2.5.2.2.2.1 Indicator: Seral State	In alternative 2, Plan objectives for mechanically thinning and burning MCD would result in the second greatest improvement toward desired conditions as seral state departure moves from high (74) to moderate (**60**) after 50 years (figure 13), leaving it slightly less than alternative 1 at this timepoint. However, at 20 years, alternative 2 departure is **more than** 10 percent lower than alternatives 1 and 3 **50** percent **departure**.	Technical correction based on internal review	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.2 Alternative 2 -- 3.5.2.2.2.2 Indicator: Canopy Cover	Alternative 2 shows the second greatest movement toward desired open conditions of all alternatives, with a 27 percent reduction in closed states after 50 years (canopy **closure** at 61 percent) (figure 14). Furthermore, in the first 20 years, canopy **cover is** predicted to drop from 86 percent to 67 percent. The second-greatest reduction in closed-states would result in improved understory conditions, and create grass-forb-shrub interspaces (V5-6). The newly opened areas as a result of the combination of fire and mechanical treatments, would gradually develop species compositions that are able to promote natural fire regimes into the futureV66. In turn, the restoration of natural fire regimes would lead to greater habitat diversity, providing a range of conditions complimentary to many wildlife species, and lead to increased site productivity over the long-term V67	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.2 Alternative 2 -- 3.5.2.2.2.2 Indicator: Canopy Cover	Alternative 2 shows the second greatest movement toward desired open-**state** conditions of all alternatives, with a 27 percent reduction in closed states after 50 years (**percentage of closed-**canopy **states** at 61 percent) (figure 14). Furthermore, in the first 20 years, **the percentage of closed-**canopy **states** are predicted to drop from 86 percent to 67 percent. The second-greatest reduction in closed-states would result in improved understory conditions, and create grass-forb-shrub interspaces (V5-6). The newly opened areas as a result of the combination of fire and mechanical treatments, would gradually develop species compositions that are able to promote natural fire regimes into the futureV66. In turn, the restoration of natural fire regimes would lead to greater habitat diversity, providing a range of conditions complimentary to many wildlife species, and lead to increased site productivity over the long-term V67.	"canopy closure" was changed to "canopy cover" or "closed state" throughout the vegetaton section	public comment
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.3 Alternative 3 -- 3.2.5.2.2.3.1 Indicator: Seral State	Compared with all other alternatives, alternative 3 would show the least improvement in seral state departure, and remain highly departed after 50 years (figure 13) with multiple associated effects (V1, 7, 16). However, in the first 10 years, which would be within **the life-span** of the draft forest plan, this alternative shows the greatest initial reduction in seral state departure moving MCD from **57 to 36** percent. This trend plainly illustrates the importance of returning fire to this fire-adapted ERU as a means to drive seral state departure toward the desired conditions outlined in the forest plan. By doing so, structure and composition of MCD would begin to resemble reference conditions and enhance resiliency to future disturbances (V3, 30-32). The reversal that begins after year 10 shows the need for additional treatments to help maintain the lower levels of seral state departure reached by the return of fire, to thin the areas dense in early successional seral states, and promote structural and age class diversity.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.3 Alternative 3 -- 3.2.5.2.2.3.1 Indicator: Seral State	Compared with all other alternatives, alternative 3 would show the least improvement in seral state departure, and remain highly departed after 50 years (figure 13) with multiple associated effects (V1, 7, 16). However, in the first 10 years, which would be within the **intended lifespan** of the forest plan, this alternative shows the greatest initial reduction in seral state departure moving MCD from **74 to 46** percent. This trend plainly illustrates the importance of returning fire to this fire-adapted ERU as a means to drive seral state departure toward the desired conditions outlined in the forest plan. By doing so, structure and composition of MCD would begin to resemble reference conditions and enhance resiliency to future disturbances (V3, 30-32). The **reversal of departure improvement** that begins after year 10 illustrates the need for additional treatments to help maintain the lower levels of seral state departure reached by the return of fire, to thin the areas dense in early successional seral states and promote structural and age class diversity.	Technical correction based on internal review	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.3 Alternative 3 -- 3.2.5.2.2.3.6 Indicator: Fire	3.2.5.2.2.3.6 Indicator: Fire This alternative is expected to have the second least improvement in risk of uncharacteristic fire. Without some mechanical treatments (e.g., initial entry) incorporated into this alternative in dense, high-risk stands, the effectiveness of solely using fire to improve conditions would be limited. For instance, early experiments to reintroduce fire in contemporary southwestern frequent-fire forests failed, as many old-growth pine trees were killedkilled, and post-settlement poles and saplings were not thinned by prescribed burning as originally intended (Sackett et al. 1996). Moreover, the implementation of fire over large areas without the use of mechanical treatments as a pre-treatment would could raise fire severity, resulting in the reduction of old growthV69, type conversion to non-forest conditions (V54, 58), or other negative impacts to the ecosystem (V34, 36, 38-39). Like alternative 1, the understory conditions (species composition and community structure) are likely to remain impaired (V5, 8-15), as large amounts of fire would increase proportions of bare ground, at least initially and may promote the regeneration of woody species instead of the desired grasses and forbs (V8-9, 14-16). Without improvements in the mixed conifer-frequent fire bunchgrass type, the maintenance of surface fuels that support natural fire regimes would be challenging (V7).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.2 Mixed Conifer Frequent Fire (MCD) -- 3.2.5.2.2.3 Alternative 3 -- 3.2.5.2.2.3.6 Indicator: Fire	3.2.5.2.2.3.6 Indicator: Fire This alternative is expected to have the second least improvement in risk of uncharacteristic fire. Without some mechanical treatments (e.g., initial entry) incorporated into this alternative in dense, high-risk stands, the effectiveness of solely using fire to improve conditions would be limited. For instance, early experiments to reintroduce fire in contemporary southwestern frequent-fire forests failed, as many old-growth pine trees were killedkilled, and post-settlement poles and saplings were not thinned by prescribed burning as originally intended (Sackett et al. 1996). Moreover, the implementation of fire over large areas without the use of mechanical treatments as a pre-treatment would could raise fire severity, resulting in the reduction of old growthV69, type conversion to non-forest conditions (V54, 58), or other negative impacts to the ecosystem (V34, 36, 38-39) **particularly in areas also impacted by prolonged drought**. Like alternative 1, the understory conditions (species composition and community structure) are likely to remain impaired (V5, 8-15), as large amounts of fire would increase proportions of bare ground, at least initially and may promote the regeneration of woody species instead of the desired grasses and forbs (V8-9, 14-16). Without improvements in the mixed conifer-frequent fire bunchgrass type, the maintenance of surface fuels that support natural fire regimes would be challenging (V7).	modified based on public and internal comments	public comment, internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.1 Alternative 1 -- 3.2.5.2.3.1.5 Indicator: Fire	Alternative 1 promotes movement toward desired conditions, as seral state departure moves from **high (97 percent) to moderate (56 percent)** after 50 years, making it the second least effective method of reducing seral state departure (figure 15). Currently, nearly 70 percent or 282,740 acres in the ponderosa pine forest ERU are in closed, late-development states (V1, 23) (see table 14, Affected Environment). The existing forest plan includes standards and guidelines for timber treatments that provide for even-aged and uneven-aged treatments, old-growth retention, and to manage for insects and diseases (V17, 19). At the proposed rate of treatment for alternative 1, it would take 81 years to treat these highly departed areas, much longer than the expected lifespan of the draft forest plan.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.1 Alternative 1 -- 3.2.5.2.3.1.5 Indicator: Fire	Alternative 1 promotes **slight** movement toward desired conditions, as seral state departure moves **shifts from within the high departure category from 97 percent to 72 percent** after 50 years, making it the second least effective method of reducing seral state departure **across the analysis timespan** (figure 15). Currently, nearly 70 percent or 282,740 acres in the ponderosa pine forest ERU are in closed, late-development states (V1, 23) (see table 14, Affected Environment). The existing forest plan includes standards and guidelines for timber treatments that provide for even-aged and uneven-aged treatments, old-growth retention, and to manage for insects and diseases (V17, 19). At the proposed rate of treatment for alternative 1, it would take 81 years to treat these highly departed areas, much longer than the expected lifespan of the draft forest plan.	Technical correction based on internal review	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.1 Alternative 1 -- 3.2.5.2.3.1.5 Indicator: Fire	The 1987 Forest Plan did not include specific objectives for the use of natural and prescribed fire, though standards and guidelines state that prescribed fire can be used for site preparation, fuels reduction, and enhancement of wildlife habitat (V17-18, 29, 32-33, 61). Under the 1987 Forest Plan, standards and guidelines state that wildfires are permitted to burn for resource benefit, given certain suppression parameters. These parameters state that wildfires with high intensity are suppressed at 75 acres, while low intensity fires are suppressed when threatening young tree plantations, or at the discretion of a wildlife biologist. Without more intensive treatments and a greater number of acres treated with fire, a high proportion of the late-successional stages currently present within PPF would remain in a closed canopy structure with high tree densities and stressed conditions (V64). These treatments are also not likely sufficient to treat enough acres of departed PPF to reduce the risk of catastrophic events , such as uncharacteristic fire (V12, 38-39, 58-60), which would retain the highest likelihood of occurrence under this alternative.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.1 Alternative 1 -- 3.2.5.2.3.1.5 Indicator: Fire	The 1987 Forest Plan did not include specific objectives for the use of natural and prescribed fire, though standards and guidelines state that prescribed fire can be used for site preparation, fuels reduction, and enhancement of wildlife habitat (V17-18, 29, 32-33, 61). Under the 1987 Forest Plan, standards and guidelines state that wildfires are permitted to burn for resource benefit, given certain suppression parameters. These parameters state that wildfires with high intensity are suppressed at 75 acres, while low intensity fires are suppressed when threatening young tree plantations, or at the discretion of a wildlife biologist. Without more intensive treatments and a greater number of acres treated with fire, a high proportion of the late-successional stages currently present within PPF would remain in a closed canopy structure with high tree densities and stressed conditions (V64). These treatments are also not likely sufficient to treat enough acres of departed PPF to reduce the risk of catastrophic events , such as uncharacteristic**ally large patches of high-severity** fire (V12, 38-39, 58-60), which would retain the highest likelihood of occurrence under this alternative.	clarified the intentional use of "catastrophic fire"	public comment

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.2 Alternative 2 -- 3.2.5.2.3.2.1 Indicator: Seral State	Alternative 2 promotes the second greatest movement toward desired conditions for PPF as outlined in the forest plan. Alternative 2 would shift seral state departure from high (97 percent) to moderate (**46** percent) after 50 years (figure 15) (V3).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.2 Alternative -- 3.2.5.2.3.2.1 Indicator: Seral State	Alternative 2 promotes the second greatest movement toward desired conditions for PPF as outlined in the forest plan. Alternative 2 would shift seral state departure from high (97 percent) to moderate (**59** percent) after 50 years (figure 15) (V3).	Technical correction based on internal review	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.3 Alternative 3 -- 3.2.5.2.3.3.1 Indicator: Seral State	By predominantly incorporating fire to elicit desired changes on the landscape, this alternative shows the least improvement in seral state departure compared to other alternatives (V1). While seral state departure would show the greatest initial movement toward desired conditions, especially within the first 10 years, it would **remain moderately (65** percent) after 50 years (figure 15) (V3).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.3 Alternative 3 -- 3.2.5.2.3.3.1 Indicator: Seral State	By predominantly incorporating fire to elicit desired changes on the landscape, this alternative shows the least improvement in seral state departure compared to other alternatives (V1). While seral state departure would show the **greatest initial movement** toward desired conditions, especially within the first 10 years, it would **return to a highly departed (82** percent) after 50 years (figure 15) (V3).	Technical correction based on internal review	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.3 Alternative 3 -- 3.2.5.2.3.3.3 Indicator: Old Growth and Associated Components	This alternative would lead to the least improvement in old growth and associated components of all alternatives. Coarse woody debris would be the lowest of any alternative, but would remain well over the amount desired from reference conditions (table 30), which would have positive (V20) or negative (V21-22) impacts given the amount of fire proposed under this alternative. Snag density would remain higher than reference conditions in alternative 3, due to the increased presence and frequency of fire. **It remains unknown what the effects of the fire treatments in alternative 3 would have on** old-growth development over time. On one hand, the predominance of fire in alternative 3 could result in reduced development of late-successional stages, as a result of more acres burning into early successional stages or uncharacteristic shrub/grass/seedling sapling states (see table 14), which would increase future fire severity and damage the residual older trees (V69). Under this scenario, old-growth development would be expected to be less than in other alternatives. Moreover, by damaging large, older trees, this alternative could provide less old-growth habitat for species that depend on these areas. Conversely, frequent, low-severity fire has the ability tocan benefit old-growth development (V18, 32-33). Thus, the effects of fire in this alternative on old-growth development would largely depend on the frequency and severity of fire where it occurs.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.3 Alternative 3 -- 3.2.5.2.3.3.3 Indicator: Old Growth and Associated Components	This alternative would **likely** lead to the least improvement in old growth and associated components of all alternatives. Coarse woody debris would be the lowest of any alternative, but would remain well over the amount desired from reference conditions (table 30), which would have positive (V20) or negative (V21-22) impacts given the amount of fire proposed under this alternative. Snag density would remain higher than reference conditions in alternative 3, due to the increased presence and frequency of fire. **The reliance on fire to move departed systems toward desired conditions could have mixed effects on** old-growth development over time. On one hand, the predominance of fire in alternative 3 could result in reduced development of late-successional stages, as a result of more acres burning into early successional stages or uncharacteristic shrub/grass/seedling sapling states (see table 14), which would increase future fire severity and damage the residual older trees (V69). Under this scenario, old-growth development would be expected to be less than in other alternatives. Moreover, by damaging large, older trees, this alternative could provide less old-growth habitat for species that depend on these areas. Conversely, frequent, low-severity fire has the ability tocan benefit old-growth development (V18, 32-33). Thus, the effects of fire in this alternative on old-growth development would largely depend on the frequency and severity of fire where it occurs.	modified based on public and internal comments	public comment, internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.3 Alternative 3 -- 3.2.5.2.3.3.5 Indicator: Fire	Without some mechanical treatments (e.g., initial entry) in these degraded areas, the effectiveness of solely using prescribed burning or naturally- ignited fire to improve conditions would be limited (V29, 34-36, 59, 69). The understory conditions (species composition and community structure) would likely remain impaired (V5, 8-14), as large amounts of fire would increase proportions of bare ground, at least initially and may promote the regeneration of woody species instead of the desired grasses and forbs (V8-9, 14-16). The lack of mechanical treatments would also increase the risk of uncharacteristic fire (V12, 38-39, 58-60) under this alternative, which would remain lower than risk in alternative 1. Thus, this alternative would be less effective than alternative 2 in moving PPF toward desired conditions. Conversely, the increased use of fire would promote a return to historic fire regimes more effectively and more quickly than other alternatives, provided that the fire could be managed to burn with lower severity (V18, 30-31, 33), minimizing negative impacts to air, soil, water, and vegetation (V34-36, 54-55, 59-60).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.3 Alternative 3 -- 3.2.5.2.3.3.5 Indicator: Fire	Without some mechanical treatments (e.g., initial entry) in these degraded areas, the effectiveness of solely using prescribed burning or naturally- ignited fire to improve conditions would be limited (V29, 34-36, 59, 69). The understory conditions (species composition and community structure) would likely remain impaired (V5, 8-14), as large amounts of fire would increase proportions of bare ground, at least initially and may promote the regeneration of woody species instead of the desired grasses and forbs (V8-9, 14-16). The lack of mechanical treatments would also increase the risk of uncharacteristic fire (V12, 38-39, 58-60) under this alternative, **particularly in areas impacted by prolonged drought**, which would remain lower than risk in alternative 1. Thus, this alternative would be less effective than alternative 2 in moving PPF toward desired conditions. Conversely, the increased use of fire would promote a return to historic fire regimes more effectively and more quickly than other alternatives, provided that the fire could be managed to burn with lower severity (V18, 30-31, 33), minimizing negative impacts to air, soil, water, and vegetation (V34-36, 54-55, 59-60).	modified based on public and internal comments	public comment, internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.3 Alternative 3 -- 3.2.5.2.3.4.1 Indicator: Seral State	This combination of treatments would result in the most improvement in seral state departure, with departure decreasing to **32** percent (**low**) after 50 years (figure 15) with the extensive use of mechanical treatments that enable targeted stem removal (V3).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.3 Ponderosa Pine Forest (PPF) -- 3.2.5.2.3.3 Alternative 3 -- 3.2.5.2.3.4.1 Indicator: Seral State	This combination of treatments would result in the most improvement in seral state departure, with departure decreasing to **41** percent (**moderate**) after 50 years (figure 15) with the extensive use of mechanical treatments that enable targeted stem removal (V3).	Technical correction based on internal review	Internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.4 Spruce-Fir Forest (SFF) and Mixed Conifer with Aspen (MCW) -- 3.2.5.2.4.4 Alternative 3	The risk of these areas experiencing high-severity fire would be the highest under this alternative. Because this alternative uses a much greater occurrence of fire within MCD and PPF areas, the likelihood of fire spreading into the adjacent SFF and MCW ERUs under certain conditions, such as drought, would be increased. Conversely, if fire behavior is low-moderate in burns that are conducted or naturally occur in surrounding areas, the potential for fire to spread into these untreated areas would be reduced (V56). Without the use of mechanical treatments to reduce fuel loadings in the adjacent ERUs under this alternative, greater fire severities would be probable with unplanned ignitions (V40). The impacts of high severity fire within these ERUs would be detrimental to vegetation, soil, and watersheds, and **would likely** increase the risk of beetle infestations (V36, 38-39, 54-58).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.2 Forested ERUs -- 3.2.5.2.4 Spruce-Fir Forest (SFF) and Mixed Conifer with Aspen (MCW) -- 3.2.5.2.4.4 Alternative 3	The risk of these areas experiencing high-severity fire would be the highest under this alternative. Because this alternative uses a much greater occurrence of fire within MCD and PPF areas, the likelihood of fire spreading into the adjacent SFF and MCW ERUs under certain conditions, such as drought, would be increased. Conversely, if fire behavior is low-moderate in burns that are conducted or naturally occur in surrounding areas, the potential for fire to spread into these untreated areas would be reduced (V56). Without the use of mechanical treatments to reduce fuel loadings in the adjacent ERUs under this alternative, greater fire severities would be probable with unplanned ignitions (V40) **particularly in areas also impacted by prolonged drought.** The impacts of high severity fire within these ERUs would be detrimental to vegetation, soil, **at-risk species**, and watersheds, and **may** increase the risk of beetle infestations (V36, 38-39, 54-58).	modified based on public and internal comments	public comment, internal review

Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.3 Non-forest ERUs -- 3.2.5.3.1 Juniper Grasslands (JUG) and Pinon-Juniper Grassland (PJG) -- 3.2.5.3.1.1 Effects common to all alternatives -- 3.2.5.3.1.1.3 Indicator: Canopy Cover and Ground Cover	Modeling of treatment averages for alternative 1 predicts an increase in closed-canopy states due to early seral states growing into closed conditions (V1-2), showing the least improvement of all alternatives. At the same time, **canopy closure** remains fairly consistent over a 50-year timespan, hovering around 60 percent closure (figure 18). **With a canopy closure of near 60 percent, alternative 1 has the highest canopy closure and** remains the furthest from reference conditions, result**ing** in negative impacts to understory ground cover and plant diversity (V7-10, 14-16). These effects would be amplified in areas of fragile soils, such as management area K in the existing forest plan (48 percent JUG; 29 percent PJG).	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.3 Non forest ERUs -- 3.2.5.3.1 Juniper Grasslands (JUG) and Pinon-Juniper Grassland (PJG) -- 3.2.5.3.1.1 Effects common to all alternatives -- 3.2.5.3.1.1.3 Indicator: Canopy Cover and Ground Cover	Modeling of treatment averages for alternative 1 predicts an increase in closed-canopy states due to early seral states growing into closed conditions (V1-2), showing the least improvement of all alternatives. At the same time, **the percentage of closed-canopy states** remains fairly consistent over a 50-year timespan, hovering around 60 percent (figure 18), **which is the highest of all alternatives and** remains the furthest from reference conditions. **This would** result in negative impacts to understory ground cover and plant diversity (V7-10, 14-16). These effects would be amplified in areas of fragile soils, such as management area K in the existing forest plan (48 percent JUG; 29 percent PJG).	Modification made throughout the EIS	public comment, internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.3 Non-forest ERUs -- 3.2.5.3.1 Juniper Grasslands (JUG) and Pinon-Juniper Grassland (PJG) -- 3.2.5.3.1.4 Alternative 4 -- 3.2.5.3.1.4.3 Indicator: Old Growth and Associated Components	Alternative 4 is predicted to have the second highest number of acres contributing to large tree or old growth conditions, due to the selective nature of mechanical treatments (V17, 19). Plan desired conditions guide thinning treatments to retain at least 20 percent of acres in mid and late-development closed states **to stay below the desired threshold of 35 percent canopy closure. This serves to** retain areas capable of producing old growth-characteristics and providing suitable habitat and cover for birds and wildlife.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.3 Non forest ERUs -- 3.2.5.3.1 Juniper Grasslands (JUG) and Pinon-Juniper Grassland (PJG) -- 3.2.5.3.1.4 Alternative 4 -- 3.2.5.3.1.4.3 Indicator: Old Growth and Associated Components	Alternative 4 is predicted to have the second highest number of acres contributing to large tree or old growth conditions, due to the selective nature of mechanical treatments (V17, 19). Plan desired conditions guide thinning treatments to retain at least 20 percent of acres in mid and late-development closed states **in order to** retain areas capable of producing old growth-characteristics and providing suitable habitat and cover for birds and wildlife.	modified based on public and internal comments	public comment, internal review
Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.4 Management Areas and Research Natural Areas -- 3.2.5.4.4 Alternative 3	The Holy Ghost Ipomopsis Botanical Area located in the Pecos River Canon Geographic Area is recommended for inclusion under alternative 3. The area is characterized by MCD (81 percent) and PPF (19 percent) vegetation types. Designation of this area as a botanical area could help to further protect this endemic, federally- listed endangered species, and would help raise public awareness of this unique species. Having a designated botanical area would could buffer this sensitive plant species from impacts of recreation or from vegetation treatments implemented in nearby areas.	Ch. 3 -- Vegetation Communities and Fuels -- 3.2.5 Environmental Consequences -- 3.2.5.4 Management Areas and Research Natural Areas -- 3.2.5.4.4 Alternative 3	The Holy Ghost Ipomopsis Botanical Area located in the Pecos River Canon Geographic Area is recommended for inclusion under alternative 3. The area is characterized by MCD (81 percent) and PPF (19 percent) vegetation types. Designation of this area as a botanical area could help to further protect this endemic, federally- listed endangered species, and would help raise public awareness of this unique species. Having a designated botanical area would could buffer this sensitive plant species from impacts of recreation or from vegetation treatments implemented in nearby areas. **However, the designation of a Holy Ghost ipomopsis Botanical Area could also promote increased visitation to this sensitive and vulnerable plant population and increase the risks of human-caused threats such as trampling or plant collection, or increase the risk of crushing plants via increased vehicle traffic on the narrow, dead-end canyon road.**	Added the negative impacts of designation	Internal review and public comment
Ch. 3 -- Watersheds and Water Resources -- 3.4.1 Affected Environment -- 3.4.1.2 Watershed Condition -- 3.4.1.2.1 Surface Water	Of more than 5,**6**00 miles of rivers and streams in the Santa Fe NF, about 985 miles (17 percent) are perennial. There are also 4,807 intermittent and ephemeral stream miles on Forest lands **and 488 intermittent or ephemeral stream miles on non-forest-administered lands within the forest boundary** (table 36). Table 36. Stream miles in the Santa Fe NF plan area Ownership Perennial Intermittent Ephemeral Total Santa Fe NF 985 643 4,164 5,**677** Admin Boundary 1,188 794 4,557 6,539	Ch. 3 -- Watersheds and Water Resources -- 3.4.1 Affected Environment -- 3.4.1.2 Watershed Condition -- 3.4.1.2.1 Surface Water	Of more than 5,700 miles of rivers and streams in the Santa Fe NF, about 985 miles (17 percent) are perennial. There are also 4,807 intermittent and ephemeral stream miles on Forest lands; **additional stream miles pass through non-forest in-holdings that are surrounded by the administrative forest boundary** (table 36). Table 36. Stream miles in the Santa Fe NF plan area Ownership Perennial Intermittent Ephemeral Total Santa Fe NF 985 643 4,164 5,**792** Admin Boundary 1,188 794 4,557 6,539	Technicel correction to edit the erroneous number and clarify confusing text.	Internal review
Ch. 3 -- Watersheds and Water Resources -- 3.4.1 Affected Environment -- 3.4.1.2 Watershed Condition -- 3.4.1.2.1 Surface Water	The Santa Fe NF contains **over 280** springs and seeps [10] and 7,000 acres of wetlands. Springs and seeps occur where groundwater emerges on sloping terrain, toe-slope breaks, and geologic formation transition zones. Many springs in the forest flow almost constantly throughout the year, though flows can vary from year-to-year. The Forest has developed approximately **508** springs for livestock **and wildlife use**. [10] NHD databases	Ch. 3 -- Watersheds and Water Resources -- 3.4.1 Affected Environment -- 3.4.1.2 Watershed Condition -- 3.4.1.2.1 Surface Water	The Santa Fe NF contains **approximately 580** springs and seeps [10] and 7,000 acres of wetlands. Springs and seeps occur where groundwater emerges on sloping terrain, toe-slope breaks, and geologic formation transition zones. Many springs in the forest flow almost constantly throughout the year, though flows can vary from year-to-year. The Forest has developed approximately **315** springs for livestock use **(61%)**. [10] **National Hydrologic Dataset, USGS** (NHD) **and Spring Stewardship Institute, Museum of Northern Arizona (SSI)** databases	Edited the number of developed springs to match the range GIS layer's account. Deleted statement about wildlife since we think they were actually developed for the use of livestock. edited the count of springs and seeps on forest to match the NHD and SSI GIS layers account; edited the footnoted reference.	Internal review
Ch. 3 -- Watersheds and Water Resources -- 3.4.1 Affected Environment -- 3.4.1.2 Watershed Condition -- 3.4.1.2.1 Surface Water -- 3.4.1.2.1.2 -- Surface Water Quality	Geothermal springs originating from the Valles Caldera have naturally high levels of heavy metals and other pollutants, in addition to thermal effects **(references)**. Los Alamos National Laboratory is a known source of other contaminants, such as gross alpha particles and PCBs.	Ch. 3 -- Watersheds and Water Resources -- 3.4.1 Affected Environment -- 3.4.1.2 Watershed Condition -- 3.4.1.2.1 Surface Water -- 3.4.1.2.1.2 -- Surface Water Quality	Geothermal springs originating from the Valles Caldera have naturally high levels of heavy metals and other pollutants, in addition to thermal effects **(Trainer, et al., 2000**). Los Alamos National Laboratory is a known source of other contaminants, such as gross alpha particles and PCBs.	Technical correction -- added reference	Internal review
Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.1 Effects Common to all Alternatives	N/A	Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.1 Effects Common to all Alternatives	Cumulatively, these restoration activities have the potential to increase watershed resiliency to climate change, which in the southwest, is predicted to result in a hotter and drier environment, with more variability in year-to-year precipitation and earlier snow-melt (Allen et al., 2005; Cayan et al., 2013); summer monsoonal precipitation is projected to decline, although model results are varying (Pascale et al., 2017). By increasing riparian and wetland vegetation (Wa1), increasing groundcover (Wa3), and decreasing disturbance to natural drainage patterns (Wa4), restoration enables watersheds to slow the flow and infiltrate runoff into the soil, improving water storage (e.g., within wetlands) during wetter periods. Restored stream channels, resistant to erosion by healthy riparian vegetation, are then better able to deliver a sustained supply of clean water to downstream users during drought periodsWa4.5.	Addressing public concern about how we address climate change and it's effects on water resources	public comment

Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.3 Alternative 1	Alternative 1 includes no objectives for forest vegetation restoration; instead mechanical timber harvest and wildfire suppression are emphasized. Alternative 1 includes management objectives for rangeland, stream channel, aquatic habitat, and riparian area conditions, but does not contain components which direct restoration of these areas.	Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.3 Alternative 1	Alternative 1 includes no objectives for forest vegetation restoration; instead mechanical timber harvest and wildfire suppression are emphasized. Alternative 1 includes management objectives for rangeland, stream channel, aquatic habitat, and riparian area conditions, but does not contain components which direct restoration of these areas. **Therefore, both short-term adverse (Wa5 through W14) and long-term beneficial effects (see Wa1 through Wa4) of the various restoration activities are least likely by this alternative when compared with other alternatives; this alternative is not likely to result in watersheds resilient to climate change and drought (Wa4.5); similar to Alternative 4**	Addressing public concern about how we address climate change and it's effects on water resources	public comment
Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.4 Alternative 2	Restoration using these objectives would ensure that over the long-term, hydrologic processes exhibit improved function and are better protected from disturbance by uncharacteristic wildfire.	Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.4 Alternative 2	Restoration using these objectives would ensure that over the long-term, hydrologic processes exhibit improved function and are better protected from disturbance by uncharacteristic wildfire. **Properly functioning watersheds would ultimately provide a cleaner, more sustainable water supply (i.e., watershed resiliency to climate change; Wa4.5).**	Addressing public concern about how we address climate change and it's effects on water resources	public comment
Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.5 Alternative 3	Watersheds would move away from properly functioning condition largely as a result of increased sedimentation from wide-spread, high-intensity wildfire.	Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.5 Alternative 3	Watersheds would move away from properly functioning condition largely as a result of increased sedimentation from wide-spread, high-intensity wildfire. **Restoration by these objectives would do more harm than good to hydrologic processes and therefore also adversely affect watershed resiliency to climate change (see Wa4.5).**	Addressing public concern about how we address climate change and it's effects on water resources	public comment
Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.6 Alternative 4	Restoration by these objectives would do the most harm to surface water resources when compared with other alternatives. Watersheds would be expected to move away from properly functioning condition as a result of increased sedimentation from logging, high-intensity wildfires, and an expanded motorized road system.	Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Restoration Activities -- 3.4.4.1.2.1.6 Alternative 4	Restoration by these objectives would do the most harm to surface water resources when compared with other alternatives. Watersheds would be expected to move away from properly functioning condition as a result of increased sedimentation from logging, high-intensity wildfires, and an expanded motorized road system. **Watershed resiliency to climate change would decline, jeopardizing a sustainable supply of clean water during drought periods (see Wa4.5).**	Addressing public concern about how we address climate change and it's effects on water resources	public comment
Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Recreation Activites	Alternative 2 seeks to maintain 75 percent of system trails within a 10-year period (objective). **Minimum snow depths would be established for over-snow travel route**s.	Ch. 3 -- Watersheds and Water Resources -- 3.4.4 Environmental Consequences -- 3.4.4.1.2 Surface Water -- 3.4.4.1.2.1 Indicator: Recreation Activites	Alternative 2 seeks to maintain 75 percent of system trails within a 10-year period (objective).	The forest has not yet gone through Subpart C of Travel Management, which deals with OSVs.	Public comment and internal review
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.2 Methodology - 3.5.2.2 Assumptions	**Most of the species in the** Santa Fe NF are assumed to have stable or increasing populations and therefore are not at-risk.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.2 Methodology - 3.5.2.2 Assumptions	**Species that are not classified as At-Risk species (Threatened and Endangered species and Species of Conservation Concern) in the** Santa Fe NF are assumed to have stable or increasing populations.	Clarified that the assumption was not meant to apply to At-Risk Speces	Public comment -- WILD082
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.3 Stressors and Drivers	A consequence of seral state departure and a significant driver of wildlife populations is uncharacteristic high-severity fire. Though it may loosely correlate with climate change its primary cause is unnaturally high fuel loads in frequent-fire systems. This is the result of long-term fire suppression. These unnatural conditions often result in large-scale, stand-replacing fire in areas that are adapted to frequent, patchy, low-intensity burns. When a large-scale, high-intensity fire occurs, small isolated populations within those stands may be completely lost while more robust populations simply shift their range in the drastically altered landscape. It may take years or decades before populations return to those areas while some may never return. The same effect may occur when disease and insect infestation altersalter the landscape. Although rarity of habitat does not necessarily reflect an issue, naturally occurring habitat that is limited in its extent in the forest could be drastically impacted by large-scale disturbance events. This could have serious impacts on species dependent upon those limited habitats.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.3 Stressors and Drivers	A consequence of seral state departure and a significant driver of wildlife populations is uncharacteristic high-severity fire. Though it may loosely correlate with climate change its primary cause is unnaturally high fuel loads in frequent-fire systems. This is the result of long-term fire suppression **and past land use practices**. These unnatural conditions often result in large-scale, stand-replacing fire in areas that are adapted to frequent, patchy, low-intensity burns. When a large-scale, high-intensity fire occurs, small isolated populations within those stands may be completely lost while more robust populations simply shift their range in the drastically altered landscape. It may take years or decades before populations return to those areas while some may never return. The same effect may occur when disease and insect infestation altersalter the landscape. Although rarity of habitat does not necessarily reflect an issue, naturally occurring habitat that is limited in its extent in the forest could be drastically impacted by large-scale disturbance events. This could have serious impacts on species dependent upon those limited habitats.	modified based on public and internal comments	public comment, internal review

Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.1 Indicator: Habitat Quality Ratings -- 3.5.4.1.5 Alternative 3 -- 3.5.4.1.5.1 Terrestrial Habitats	The differences in treatment approach and acreages primarily affects the rate at which desired conditions are obtained but they also introduce an additional threat to habitat, namely the increased likelihood of uncharacteristic large-scale, high-**intensity** fire. This risk is primarily associated with frequent-fire forested systems like PPF and MCD. **Non-forested ERUs are not as susceptible to the uncharacteristic large-scale, high-intensity fires**. The objectives in this alternative should increase the rate in which desired conditions are achieved which would ultimately improve wildlife habitat, however, the additional risk of uncharacteristic fire in frequent-fire forested systems (PPF and MCD) could potentially harm wildlife through direct mortality or complete destruction of the habitat and the ecological conditions withinWL7.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.1 Indicator: Habitat Quality Ratings -- 3.5.4.1.5 Alternative 3 -- 3.5.4.1.5.1 Terrestrial Habitats	The differences in treatment approach and acreages primarily affects the rate at which desired conditions are obtained but they also introduce an additional threat to habitat, namely the increased likelihood of uncharacteristic (large-scale, high-**severity**) fire. This risk is primarily associated with frequent-fire forested systems like PPF and MCD. **Non-forested ERUs are not at as great of risk for uncharacteristic fire as frequent-fire forests, though they are still susceptible to the negative effects of such fires**. The objectives in this alternative should increase the rate in which desired conditions are achieved which would ultimately improve wildlife habitat, however, the additional risk of uncharacteristic fire in frequent-fire forested systems (PPF and MCD) could potentially harm wildlife through direct mortality or complete destruction of the habitat and the ecological conditions withinWL7..	Clarify meaning of text	Internal review
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.2 Issue A - Highly Departed Seral State	Seral state is a complex issue that deals with the ecological succession of vegetation as it progresses toward a climax community. It looks at how vegetative systems age over time and what the average range of age classes of vegetation exist within the system...Another issue caused by out-of-reference seral state is the potential for large-scale **uncharacteristic fire**. In both forested and non-forested ecosystems, fuel loads can build to levels that increase the potential for **uncharacteristic fire**. Besides devastating the vegetative conditions within and ERU, **uncharacteristic** fires can also potentially wipe out at-risk species that reside in those systems, especially if they are rare or endemic	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.2 Issue A - Highly Departed Seral State	Seral state is a complex issue that deals with the ecological succession of vegetation as it progresses toward a climax community. It looks at how vegetative systems age **and develop** over time and what the average range of age classes **(with corresponding plant compositions)** of vegetation exist within the system...Another issue caused by out-of-reference seral state is the **increased** potential for large-scale, **high-severity (e.g., uncharacteristic; stand-replacing)** fire. In both forested and non-forested ecosystems, fuel loads can build to levels that increase the potential for s**evere and detrimental fire effects (i.e., catastrophic)**. Besides devastating the vegetative conditions within an ERU, these **stand-replacing** fires can also potentially wipe out at-risk species that reside in those systems, especially if they are rare or endemic.	Clarify meaning of text	Internal review
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.2 Issue A - Highly Departed Seral State	Another issue caused by out-of-reference seral state is the potential for large-scale **uncharacteristic fi**re.. In both forested and non-forested ecosystems, fuel loads can build to levels that increase the potential for **uncharacteristic**. Besides devastating the vegetative conditions within and ERU, **uncharacteristic** fires can also potentially wipe out at-risk species that reside in those systems, especially if they are rare or endemic.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.2 Issue A - Highly Departed Seral State	Another issue caused by out-of-reference seral state is the **increased** potential for large-scale, **high-severity (e.g., uncharacteristic; stand-replacing)** fire.. In both forested and non-forested ecosystems, fuel loads can build to levels that increase the potential for **severe and detrimental fire effects (i.e., catastrophic)**. Besides devastating the vegetative conditions within and ERU, **these stand-replacing fires** can also potentially wipe out at-risk species that reside in those systems, especially if they are rare or endemic.	Clarify meaning of text; Consciously removing several instances of catastrophic throughout the analysis based on comments received. Where used it is intentional and a defintion is added to the glossary. This change was also driven by public comments concerned that we had not adequately represented the potential benefits of high-severity wildfire, particularly in terms of the benefits it can give to wildlife.	Public comment and internal review
Table 51. Issues and threats associated with at-risk species (Santa Fe NF Plan Final Assessment Report, 2016, Volume I. Ecological Resources)	J. Ground/Soil Disturbance (Roads and Trails)	Table 51. Issues and threats associated with at-risk species (Santa Fe NF Plan Final Assessment Report, 2016, Volume I. Ecological Resources)	J. Ground/Soil Disturbance (**Livestock Grazing,** Roads and Trails) At-risk species listed were updated to show they are impacted by livestock grazing (X added in column J for their species row)	Added to address public concern about not us not directly addressing the threat livestock grazing poses to at-risk species	Public comment
Table 51. Issues and threats associated with at-risk species (Santa Fe NF Plan Final Assessment Report, 2016, Volume I. Ecological Resources)	N/A	Table 51. Issues and threats associated with at-risk species (Santa Fe NF Plan Final Assessment Report, 2016, Volume I. Ecological Resources)	Modified table to make sure all the issues and threats affecting each species was consistent with their species tables in Volume 2, Appendix E.	Internal consistency	Internal review
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.2 Issue A - Highly Departed Seral State -- 3.5.4.2.2.1 Seral State: Upland Analysis -- 3.5.4.2.2.1.4 Alternative 3	*Non-forested ERUs (CPGB, MSG, SAGE, JUG, and PJG)* The natural processes emphasis alternative sets an objective of 115,150 to 330,150 acres of restoration work in non-forested ERUs to be completed over a 10-year period. This objective will help increase the rate in which desired conditions are achieved. Restoration activities within these ERUs would primarily be accomplished through prescribed fire. Ecological conditions linked to seral state would improve and individual species response would be the same as mentioned in the proposed action (WL14–WL17). Although there is added risk of **uncharacteristic fire** in the non-forested ERUs it is unlikely the fires would be **uncharacteristic** where long-lasting ecological impacts would occur due to intensity and duration; therefore, there is no known added risks associated with increasing the amount of restoration using fire. The viability for at-risk species within these ERUs should increase and the effects would be the same as the proposed action. *Forested ERUs (PPF and MCD)* The natural processes emphasis alternative increases the objective of treated acres for both MCD and PPF. Over a 10-year period, there would be an objective of 120,000 to 820,000 acres of restoration work in MCD, while PPF would see an objective of 272,000 to 922,000 acres. Restoration activities within these ERUs would primarily be accomplished through prescribed fire, this would improve seral state conditions within the forest (WL18). However, due to the highly departed characteristics of these two forested ERUs, and their increased fuel loads, the risk of **Catastrophic Fire** (Issue D) **may also increase**. See Issue D for effects.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.2 Issue A - Highly Departed Seral State -- 3.5.4.2.2.1 Seral State: Upland Analysis -- 3.5.4.2.2.1.4 Alternative 3	*Non-forested ERUs (CPGB, MSG, SAGE, JUG, and PJG)* The natural processes emphasis alternative sets an objective of 115,150 to 330,150 acres of restoration work in non-forested ERUs to be completed over a 10-year period. This objective will help increase the rate in which desired conditions are achieved. Restoration activities within these ERUs would primarily be accomplished through prescribed fire. Ecological conditions linked to seral state would improve and individual species response would be the same as mentioned in the proposed action (WL14–WL17). Although there is added risk of **larger patches of high-severity fire** in the non-forested ERUs it is unlikely the fires would be **catastrophic** where long-lasting ecological impacts would occur due to intensity and duration; therefore, there is no known added risks associated with increasing the amount of restoration using fire. The viability for at-risk species within these ERUs should increase and the effects would be the same as the proposed action. *Forested ERUs (PPF and MCD)* The natural processes emphasis alternative increases the objective of treated acres for both MCD and PPF. Over a 10-year period, there would be an objective of 120,000 to 820,000 acres of restoration work in MCD, while PPF would see an objective of 272,000 to 922,000 acres. Restoration activities within these ERUs would primarily be accomplished through prescribed fire, this would improve seral state conditions within the forest (WL18). However, due to the highly-departed characteristics of these two forested ERUs, and their increased fuel loads, the risk of **Uncharacteristic Fire** (Issue D) may also increase, **particularly when combined with other natural disturbances affecting the landscape (e.g., drought).** See Issue D for effects.	Consciously removing several instances of catastrophic throughout the analysis based on comments received. Where used it is intentional and a defintion is added to the glossary. This change was also driven by public comments concerned that we had not adequately represented the potential benefits of high-severity wildfire, particularly in terms of the benefits it can give to wildlife.	Public comment and internal review

Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.5 Issue D - Uncharacteristic Fire	3.5.4.2.5 Issue D - Uncharacteristic Fire Fire plays a critical role in maintaining the health of an ecosystem. **Many ERUs within the Santa Fe NF are classified as frequent-fire systems and** depend on a certain fire-return intervals to maintain reference conditions for numerous vegetative characteristics (seral state, CWD, etc.). **Long-term, historic fire suppression policies in the forest has resulted in an excess of fuel in many frequent fire systems (see vegetation analysis). This excess fuel load often creates conditions for uncharacteristic fire which is usually defined as fire that burns at higher intensity or longer duration than what would typically occur under reference conditions. Uncharacteristic fire often creates unfavorable forest conditions for at-risk species. It also can potentially wipe out isolated or small populations of at-risk species. Currently, 24 at-risk species may be impacted by uncharacteristic fire (table 57), but each are impacted in different ways.**	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.5 Issue D - Uncharacteristic Fire **(Risk of Catastrophic Fire)**	3.5.4.2.5 Issue D - Uncharacteristic Fire **(Risk of Catastrophic Fire)** Fire plays a critical role in maintaining the health of an ecosystem. **Vegetation communities (ERUs) in the Santa Fe NF are characterized by various fire regimes and depend on certain fire-return intervals to maintain reference conditions for numerous vegetative characteristics (e.g., seral state, CWD; see vegetation section). Two frequent-fire systems (PPF, MCD) which make up half of the land area of the Santa Fe NF, historically experienced frequent, predominantly low-severity fires with patches of mixed-severity effects. However, long-term, historic fire suppression policies in the western US have resulted in excessive stocking levels and fuel loads in many frequent-fire systems (see vegetation analysis), creating conditions for uncharacteristic fires to occur. Uncharacteristic fire can be defined as fire that burns at higher-intensity or over longer durations at larger scales than what would typically occur under reference conditions. Mixed- to high-severity fires causing extensive ecological (and often socio-economic) damage are characterized as catastrophic fires. Objectives for vegetation treatments, particularly those in MCD and PPF, are designed to reduce the risk of uncharacteristic and catastrophic fire occurrence on the forest and surrounding lands.** **Uncharacteristic fire often creates unfavorable forest conditions for at-risk species. It also can potentially wipe out isolated or small populations of at-risk species. Currently, 24 at-risk species may be impacted by uncharacteristic fire**	Consciously removing several instances of catastrophic throughout the analysis based on comments received. Where used it is intentional and a defintion is added to the glossary. This change was also driven by public comments concerned that we had not adequately represented the potential benefits of high-severity wildfire, particularly in terms of the benefits it can give to wildlife.	Public comment
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.5 Issue D - Uncharacteristic Fire (Risk of Catastrophic Fire) -- 3.5.4.2.5.1 Catastrophic Fire Analysis	Uncharacteristic fire affects more than one at-risk species. When it occurs in forested systems, a stand-replacing fire kills all, or nearly all, of the vegetation present on site through the combination of crown fires consuming all photosynthetic material and live buds, and surface fires penetrating the soil with extreme heat. Effects of uncharacteristic fire can be grouped as follows:	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.1 Issues for At-Risk Species -- 3.5.4.2.5 Issue D - Uncharacteristic Fire (Risk of Catastrophic Fire) -- 3.5.4.2.5.1 Catastrophic Fire Analysis	**Mixed- to High- severity fire may naturally occur in patches in frequent- fire ERUs (e.g., PPF, MCD). Small-scale instances of high-severity fire isare natural and often timesoften are beneficial to wildlife by creating openings within the canopy. These openings increase heterogeneity and biodiversity on the landscape by forming early seral habitats that are important for raptors (e.g., Northern goshawks and Mexican Spotted owls), woodpeckers, songbirds, small mammals, ungulates, and several plant species. Uncharacteristic fire, however is large- scale, stand- replacing fire that does not normally occur as a part of the fire regime for the ERU involved. Often, the risk of uncharacteristic fire is associated with frequent- fire ERUs (e.g., MCD, PPF) that have an above average fuel load indicative of out-of-reference conditions, and is not as strongly associated with infrequent-fire ERUs with naturally occurring stand-replacement fires over long timespans (e.g., SFF, MCW) unless the area burned is larger than patch sizes described within the natural range of variation.** When it occurs in forested or woodland systems, a stand-replacing fire kills all, or nearly all, of the vegetation present on site through the combination of crown fires consuming all photosynthetic material and live buds, and surface fires penetrating the soil with extreme heat**. When fires occur over large areas with high severity they may be termed catastrophic due to adverse and potentially long-lasting ecological (and socio-economic) effects. Large, high-severity patches or stand-replacing fires affects more than one at-risk species.** Effects of uncharacteristic and catastrophic fire can be grouped as follows:	Consciously removing several instances of catastrophic throughout the analysis based on comments received. Where used it is intentional and a defintion is added to the glossary. This change was also driven by public comments concerned that we had not adequately represented the potential benefits of high-severity wildfire, particularly in terms of the benefits it can give to wildlife.	public comment
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.11 Threat I - Non-native Competition and Predation (Aquatic)	Negative impacts to at-risk species may occur when nonnative invasive species are introduced, intentionally or unintentionally, into aquatic systems where at-risk species exist and competition and prey behavior results in population declines of the native populations (Dukes and Mooney 2004). Non-native invasive species in the Santa Fe NF include but are not limited to American bullfrogs, white sucker, **German** brown trout and rainbow trout (Ficetola et al. 2007). It is well-known that rainbow and **German** brown trout often out-compete native Rio Grande cutthroat trout (Krueger and May, 1991) in areas where they were introduced but there is also the risk of predation on the at-risk Rio Grande Sucker and Chub**.** These nonnative fish, in particular the **German** brown and rainbow trout, were introduced in waters of the Santa Fe NF for socioeconomic benefit. Similarly, nonnative American bullfrog were known to out-compete northern leopard frogs (Blaustein and Keisecker 2002, Walker and Steffen 1997). These are just examples of the types of negative consequences associated with invasive species that were introduced into aquatic systems.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.11 Threat I - Non-native Competition and Predation (Aquatic)	Negative impacts to at-risk species may occur when nonnative invasive species are introduced, intentionally or unintentionally, into aquatic systems where at-risk species exist and competition and prey behavior results in population declines of the native populations (Dukes and Mooney 2004). Non-native invasive species in the Santa Fe NF include but are not limited to American bullfrogs, white sucker, brown trout **(Salmo trutta)** and rainbow trout **(Oncorhynchus mykiss;** Ficetola et al. 2007**).** It is well-known that rainbow and brown trout often out-compete native Rio Grande cutthroat trout (Krueger and May, 1991) in areas where they were introduced, and there may also be a risk of predation or competition on the at-risk Rio Grande Sucker and Chub by these or other non-native fish species **(Rees and Miller 2005a; Rees and Miller 2005b).** These nonnative fish, in particular the brown and rainbow trout, were introduced in waters of the Santa Fe NF for socioeconomic benefit. Similarly, nonnative American bullfrog were known to out-compete northern leopard frogs (Blaustein and Keisecker 2002, Walker and Steffen 1997). These are just examples of the types of negative consequences associated with invasive species that were introduced into aquatic systems.	This change was also driven by public comments concerned that we had not adequately represented the potential benefits of high-severity wildfire, particularly in terms of the benefits it can give to wildlife.	Public comment -- EDIT007, WILD100
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.12 Threat J - Ground or Soil Disturbance (Livestock Grazing, Roads, and Trails)	Entire analysis	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.12 Threat J - Ground or Soil Disturbance (Livestock Grazing, Roads, and Trails)	Entire analysis redone to focus more on the stated metric miles of road and trail construction or decommissioning and add in explanation about how livestock grazing relates to soil and ground disturbance and its impact on at-risk species.	Added to address public concern about not us not directly addressing the threat livestock grazing poses to at-risk species	Public comment -- WILD153/154, WILD156
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.13 Threat K -- Intrusive Human Activity -- 3.5.4.2.13.1 Intrusive Human Activity Analysis	Metric: Recreational Use Metrics Currently, **16** at-risk species (**44** percent) may be negatively impacted by intrusive human activity, they include: American Peregrine Falcon, Black Swift, Gunnison's Prairie Dog, Heil's Alpine Whitlowgrass, Large Yellow Lady's-slipper, Masked Shrew, New Mexico Meadow Jumping Mouse, Northern Leopard Frog, Pecos Fleabane, Rio Grande Chub, Rio Grande Cutthroat Trout, and Rio Grande Sucker, Spotted Bat, Water Shrew, Western Burrowing Owl, and White-tailed Ptarmigan.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.13 Threat K -- Intrusive Human Activity -- 3.5.4.2.13.1 Intrusive Human Activity Analysis	Metric: Recreational Use Metrics Currently, **17** at-risk species (**47** percent) may be negatively impacted by intrusive human activity, they include: American Peregrine Falcon, Black Swift, Gunnison's Prairie Dog, Heil's Alpine Whitlowgrass, **Holy Ghost Ipomopsis,** Large Yellow Lady's-slipper, Masked Shrew, New Mexico Meadow Jumping Mouse, Northern Leopard Frog, Pecos Fleabane, Rio Grande Chub, Rio Grande Cutthroat Trout, and Rio Grande Sucker, Spotted Bat, Water Shrew, Western Burrowing Owl, and White-tailed Ptarmigan.	Updated to reflect that HGI is impacted by this threat, consistent with Appendix E	public comment, internal review

Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.13 Threat K -- Intrusive Human Activity -- 3.5.4.2.13.1 Intrusive Human Activity Analysis	*Recreational Off-Road Vehicle Use* **.** Trampling of plants may occur in many forms, one of which is through the use of off-road vehicles. Pecos Fleabane is an at-risk species that is primarily located on Elk Mountain and is impacted by off-road vehicle use since it occurs in naturally disturbed areas, especially along roadsides (WL55).	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.13 Threat K -- Intrusive Human Activity -- 3.5.4.2.13.1 Intrusive Human Activity Analysis	*Recreational Off-Road Vehicle Use* ***or Other Heavy Equipment Use (e.g. mechanical thinning)*** **.** Trampling of plants or **soil compaction** may occur in many forms, one of which is through the use of off-road vehicles **or heavy equipment. This may potentially have negative impacts on at-risk species. For example,** Pecos Fleabane is an at-risk species that is primarily located on Elk Mountain and is impacted by off-road vehicle use since it occurs in naturally disturbed areas, especially along roadsides (WL55).	Addressing public concern about the impact of heavy equipment on at-risk species; internal consistency	public comment, internal review
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.13 Threat K -- Intrusive Human Activity -- 3.5.4.2.13.1 Intrusive Human Activity Analysis	Excessive Riparian Use. Water availability is limited in the Southwest,Southwest; therefore, riparian areas and other bodies of water naturally attract wildlife. These areas also generally tend to see an increased amount of use by humans as well as livestock. Black Swift, Masked Shrew, New Mexico Meadow Jumping Mouse, Northern Leopard Frog, and Water Shrew may be impacted by activities within riparian areas adjacent to streams and rivers. Rio Grande Chub, Rio Grande Sucker, and Rio Grande Cutthroat may also be impacted by these increased activities. Human activity that disrupts breeding, nesting, or foraging of at-risk birds and mammals would decrease survival and reproduction due to abandonment and expended energies finding suitable replacement sitesWL53.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.13 Threat K -- Intrusive Human Activity -- 3.5.4.2.13.1 Intrusive Human Activity Analysis	Excessive Riparian Use. Water availability is limited in the Southwest,Southwest; therefore, riparian areas and other bodies of water naturally attract wildlife. These areas also generally tend to see an increased amount of use by humans as well as livestock. Black Swift, Masked Shrew, New Mexico Meadow Jumping Mouse, Northern Leopard Frog, **Large Yellow Lady Slipper**, and Water Shrew may be impacted by activities within riparian areas adjacent to streams and rivers. Rio Grande Chub, Rio Grande Sucker, and Rio Grande Cutthroat may also be impacted by these increased activities. Human activity that disrupts breeding, nesting, or foraging of at-risk birds and mammals would decrease survival and reproduction due to abandonment and expended energies finding suitable replacement sitesWL53.	Updated to reflect that LYLS is impacted by this threat	Internal review
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.13 Threat K -- Intrusive Human Activity -- 3.5.4.2.13.1 Intrusive Human Activity Analysis	*Picking or digging or plants.* Besides being nice to look at, some people enjoy picking or digging of plants, especially if they have bright and showy flowers. Some may even seek certain plants for cultural or medicinal uses. Since at-risk plant species often require specific soil conditions, their range is sometimes quite limited making them susceptible to over-harvest. Large-Yellow Lady's-slipper, with its bright showy yellow flower may be negatively impacted by this activity. Excessive picking or digging of at-risk plants that are highly endemic may significantly reduce populationsWL56.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.2.10 Threats to At-Risk Species -- 3.5.4.2.13 Threat K -- Intrusive Human Activity -- 3.5.4.2.13.1 Intrusive Human Activity Analysis	*Picking or digging or plants.* Besides being nice to look at, some people enjoy picking or digging of plants, especially if they have bright and showy flowers. Some may even seek certain plants for cultural or medicinal uses. Since at-risk plant species often require specific soil conditions, their range is sometimes quite limited making them susceptible to over-harvest. Large-Yellow Lady's-slipper, with its bright showy yellow flower, **and Holy Ghost Ipomopsis** may be negatively impacted by this activity. Excessive picking or digging of at-risk plants that are highly endemic may significantly reduce populationsWL56.	Updated to reflect that HGI is impacted by this threat	Internal review
Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.3 Indicator: Wildlife Connectivity	Ecological conditions, or condition of the habitat, may be an equally or more important aspect of wildlife connectivity but is often disregarded since it is not as obvious as highly visible obstructions. The reason ecological habitat conditions may be more important to wildlife connectivity is because it affects all wildlife, not just large terrestrial animals. Animals have evolved in their habitats, usually under reference vegetative conditions, this includes specific habitat features. These conditions may have influenced the development of long- and short-range migration routes. For example, amphibians travelling from one ephemeral pond to another may only travel a short distance but may need specific conditions within the habitat that connects each component of their life history needs. Soil moisture or bare patches may be key components that influence movement. Without optimal conditions (reference conditions), movement may be hindered, and connectivity broken. Therefore, altered, or out-of-reference conditions, may impacts a species' vagility (ability to move or migrate) and may be a larger concern for a majority of species within the forest.	Ch. 3 -- Wildlife, Fish and Plants -- 3.5.4.3 Indicator: Wildlife Connectivity	Ecological conditions, or condition of the habitat, may be an equally or more important aspect of wildlife connectivity but is often disregarded since it is not as obvious as highly visible obstructions. The reason ecological habitat conditions may be more important to wildlife connectivity is because it affects all wildlife, not just large terrestrial animals. Animals have evolved in their habitats, usually under reference vegetative conditions, this includes specific habitat features. These conditions may have influenced the development of long- and short-range migration routes. For example, amphibians travelling from one ephemeral pond to another may only travel a short distance but may need specific conditions within the habitat that connects each component of their life history needs. Soil moisture or bare patches may be key components that influence movement. Without optimal conditions (reference conditions), movement may be hindered, and connectivity broken. Therefore, altered, or out-of-reference conditions, may impacts a species' vagility (ability to move or migrate) and may be a larger concern for a majority of species within the forest. **Other secondary impacts of loss of connectivity include impairment of pollinator movement among populations of plant species, through disruption of both plant and pollinator (shelter and foraging) sustaining habitat with long term effects on gene flow and viability.**	Improve explanation of connectivity impacts	Internal review
Ch. 3 -- Air Quality -- 3.7.1 Standards and Regulations -- 3.7.1.2 Visibility and Regional Haze	Regional Haze Rule (40 CFR Part 51)	Ch. 3 -- Air Quality -- 3.7.1 Standards and Regulations -- 3.7.1.2 Visibility and Regional Haze	Regional Haze Rule (40 CFR 51 subpart (iii)(F)	Updated citation to be more specific	Pubilc comment -- AIr014
Ch. 3 -- Air Quality -- 3.7.2 Air Quality Conditions and Trends -- 3.7.2.2 Nonattainment Areas and NAAQS	At the present time, the plan area attains all national and New Mexico ambient air quality standards. **(See assessment Chapter 5 Air)**	Ch. 3 -- Air Quality -- 3.7.2 Air Quality Conditions and Trends -- 3.7.2.2 Nonattainment Areas and NAAQS	At the present time, the plan area attains all national and New Mexico ambient air quality standards. **(See USDA Forest Service 2016a)**	Updated citation to be more specific	Public comment -- Air015
Ch. 3 -- Air Quality -- 3.7.4 Methodology and Analysis Process -- 3.7.4.1 Indicators -- 4.7.4.1.1 Emisions from Management Activities (predominantly fire)	N/A	Ch. 3 -- Air Quality -- 3.7.4 Methodology and Analysis Process -- 3.7.4.1 Indicators -- 4.7.4.1.1 Emisions from Management Activities (predominantly fire)	Livestock produce methane (CH4) and carbon dioxide (CO2). These emissions from livestock these are a relatively small source of emissions from the forest (an estimated equivalent to 0.04% of greenhouse gas emissions from fire over a 10 year average).	Added a paragraph about livestock emissions to justify why they are not analyzed like fire it in this section. Related tables added to Appendix B.	Public comments - Air002, RNG002/058
Ch. 3 -- Cultural Resources and Archaeology -- 3.9.2 Methodology and Analysis -- 3.9.2.3 Analysis -- 3.9.2.3.1.2 Vegetation treatments -- 3.9.2.3.1.2 ERUs without objectives -- Table 80. ERUs without objectives and site occurences	Rio Grande Cottonwood / Shrub 158 301.0 **6,713,851.83**		Rio Grande Cottonwood / Shrub 158 301.0 **7,493**	analysis correction	Internal review

Ch. 3 -- Forest Products -- 3.10.2 Methodology and Analysis -- 3.10.2.2 Timber Suitability	Timber suitability was determined using a myriad of resource data incorporated into GIS to apply criteria and identify lands suitable for timber production. Timber production is defined as the growing, tending, harvesting, and regenerating of trees to produce logs or other products for industrial or consumer use. Lands determined to be suitable for timber production are areas identified as capable of producing a regular, periodic output of timber, maintained in perpetuity, without impairment of the productivity of the land or inconsistency with other land management direction. Criteria for suitability are defined in the 2012 planning rule procedures at 36 CFR § 219.11 and Forest Service Handbook 1909.12, chapter 60. Data was developed using the latest, most relevant data sources and requirements to match the criteria defined by resource specialists. A more detailed description of the timber suitability analysis can be found in Appendix C: Timber Suitability Analysis.	Ch. 3 -- Forest Products -- 3.10.2 Methodology and Analysis -- 3.10.2.2 Timber Suitability	Timber suitability was determined using a myriad of resource data incorporated into GIS to apply criteria and identify lands suitable for timber production. Timber production is defined as the growing, tending, harvesting, and regenerating of trees to produce logs or other products for industrial or consumer use. Lands determined to be suitable for timber production are areas identified as capable of producing a regular, periodic output of timber, maintained in perpetuity, without impairment of the productivity of the land or inconsistency with other land management direction. Criteria for suitability are defined in the 2012 planning rule procedures at 36 CFR § 219.11 and Forest Service Handbook 1909.12, chapter 60. **Lands not meeting the criteria defined in FSH 1909.12 or lands where laws, policies, or plan components (e.g., desired conditions) are not consistent with timber harvests meeting the definition above were deemed lands not suited for timber production. On lands not suited for timber production, some tree cuttings may still occur in order to increase safety in areas popular for recreational activities, and to improve stand health, function, or composition in accordance with desired conditions.** Data was developed using the latest, most relevant data sources and requirements to match the criteria defined by resource specialists. A more detailed description of the timber suitability analysis can be found in Appendix C: Timber Suitability Analysis.	Added this piece in for clarification due to multiple confused commenters and because we had not introduced the lands not suited concept in the opening paragraph.	Public comments
Ch. 3 -- Forest Products -- 3.10.2 Methodology and Analysis -- 3.10.2.2 Timber Suitability	In Table 81, Alternative 4 was listed as having **-68 acres** not suited for timber production because timber productions is not compatible with the desired conditions and objectives established by the plan.	Ch. 3 -- Forest Products -- 3.10.2 Methodology and Analysis -- 3.10.2.2 Timber Suitability	In Table 81, Alternative 4 is listed as having **0 acres** not suited for timber production because timber productions is not compatible with the desired conditions and objectives established by the plan. A footnote was added to explain: **In alternative 4, 68 acres (which surround a reservoir) are recommended to be removed from designated wilderness. In the event that Congress were to remove the wilderness designation from these acres, the suitable timber base would increase by this margin (to 357,011 acres- line D) above the may be suited base (line C); the difference in these two quantities is recorded as 0 in line E. However, until a Congressional decision would be made these acres will be remain as designated wilderness and be managed according to all relevant laws, policies, and regulations.**	Clarify meaing of text	Internal review
Ch. 3 -- Forest Products -- 3.10.2 Methodology and Analysis -- 3.10.2.2 Timber Suitability -- 3.10.2.2.2 Projected Wood and Timber Sale Quantities (PWSQ, PTSQ)	Projected Timber Sale Quantity (PTSQ) and Projected Wood Sale Quantity (PWSQ) are the quantities of timber and other wood products that **can be expected** to be sold during the first two decades of the revised plan based on projected vegetation treatments outlined in plan objectives. The projected wood sale quantity includes all woody material likely to be sold from **these** harvests whether or not the woody material meets utilization standards. The projected timber sale quantity is a subset of the projected wood sale quantity and is an estimate of the quantity of timber **expected** to be sold during the plan period. The volume in the projected timber sale quantity is the volume that meets utilization standards, and must be equal to or lower than the sustained yield limit (SYL) for the forest. The estimation of these two quantities must be consistent with the plan components of the final plan or the unique mix of plan components in each alternative, and consistent with the fiscal and organizational capability of the unit. The planned management objectives for PTSQ and PWSQ are also limited based upon constraints described in FSH 1909.12, Chapter 60 Section 64.32. Both PTSQ and PWSQ were modeled using VDDT models with acres of proposed vegetation treatment inputs that differed for each alternative.	Ch. 3 -- Forest Products -- 3.10.2 Methodology and Analysis -- 3.10.2.2 Timber Suitability -- 3.10.2.2.2 Projected Wood and Timber Sale Quantities (PWSQ, PTSQ)	Projected Timber Sale Quantity (PTSQ) and Projected Wood Sale Quantity (PWSQ) are the quantities of timber and other wood products that **have the potential** to be sold during the first two decades of the revised plan based on projected vegetation treatments outlined in plan objectives. The projected wood sale quantity includes all woody material likely to be sold from harvests whether or not the woody material meets utilization standards. The projected timber sale quantity is a subset of the projected wood sale quantity and is an estimate of the quantity of timber **with the potential** to be sold during the plan period **if vegetation management objectives were met**. The volume in the projected timber sale quantity is the volume that meets utilization standards, and must be equal to or lower than the sustained yield limit (SYL) for the forest. The estimation of these two quantities must be consistent with the plan components of the final plan or the unique mix of plan components in each alternative, and consistent with the fiscal and organizational capability of the unit. The planned management objectives for PTSQ and PWSQ are also limited based upon constraints described in FSH 1909.12, Chapter 60 Section 64.32. Both PTSQ and PWSQ were modeled using VDDT models with acres of proposed vegetation treatment inputs that differed for each alternative.	Since these are estimates, I changed the language to be less deterministic.	Editorial
Ch. 3 -- Forest Products -- 3.10.3 Environmental Consequences -- 3.10.3.1 Indicator: Timber Suitability -- 3.10.3.1.2 Alternative 1	In total, there are 326,779 acres of land suited for timber production in alternative 1. This acreage is higher than alternative 3 and lower than alternatives 2 and 4, which increase human uses and the output of forest products in the forest. However, due to the low acreages for vegetation treatments given in Plan objectives (see section 3.3.5, table 22), it remains unlikely that any new timber markets would emerge, or any significant growth to existing markets would be made, resulting in little change to the demand for these products in the forest FP6 and produce **negligible** beneficial effects (FP2-5).	Ch. 3 -- Forest Products -- 3.10.3 Environmental Consequences -- 3.10.3.1 Indicator: Timber Suitability -- 3.10.3.1.2 Alternative 1	In total, there are 326,779 acres of land suited for timber production in alternative 1. This acreage is higher than alternative 3 and lower than alternatives 2 and 4, which increase human uses and the output of forest products in the forest. However, due to the low acreages for vegetation treatments given in Plan objectives (see section 3.3.5, table 22), it remains unlikely that any new timber markets would emerge, or any significant growth to existing markets would be made, resulting in little change to the demand for these products in the forest FP6 and produce **few associated** beneficial effects (FP2-5).	Word choice -- Few seems like it allows for slightly more beneficial effects than negligible	Editorial
Ch. 3 -- Forest Products -- 3.10.3 Environmental Consequences -- 3.10.3.2 Indicator: Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- 3.10.3.2.1 Effects Common to All Alternatives	The harvesting of timber or acquisition of other forest products benefits the economy and sustains important cultural and traditional uses by providing a sustainable and continuous supply of products to meet demands FP13. The removal of these products may also enhance ecological function in or surrounding treated areas (FP10). Furthermore, the removal and use of some forest products would reduce competition for resources, ease drought stress, and increase the health and vigor of residual trees, potentially leading to higher quality timber in the future FP14 (see also “Vegetation and Fire”). Commercial or non-commercial thinning can reduce existing insect or disease infestations or lessen the risk for these events in the future FP15. However, the removal of forest products from the forest can also have negative implications ecologically, especially when removal involves using heavy machinery. Mechanized machinery used for commercial timber harvesting or non-commercial thinning can cause soil compaction, leading to reduced water infiltration rates, increased water runoff and soil erosion, and reduced soil productivity FP16. The use of mechanized machinery may also necessitate the reopening of or creation of new roads, leading to greater fragmentation of the landscape, which divides corridors for wildlife travel FP17. Mechanical cutting practices may also negatively impact the aesthetic quality of an area in the short-term, yielding an un-natural appearance near areas of cuttings FP18.	Ch. 3 -- Forest Products -- 3.10.3 Environmental Consequences -- 3.10.3.2 Indicator: Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- 3.10.3.2.1 Effects Common to All Alternatives	The harvesting of timber or acquisition of other forest products benefits the economy and sustains important cultural and traditional uses by providing a sustainable and continuous supply of products to meet demands FP13. The removal of these products may also enhance ecological function in or surrounding treated areas (FP10). Furthermore, the removal and use of some forest products would reduce competition for resources, ease drought stress, and increase the health and vigor of residual trees, potentially leading to higher quality timber in the future FP14 (see also “Vegetation and Fire”). Commercial or non-commercial thinning can reduce existing insect or disease infestations or lessen the risk for these events in the future FP15. However, the removal of forest products from the forest can also have negative implications ecologically, especially when removal involves using heavy machinery. Mechanized machinery used for commercial timber harvesting or non-commercial thinning can cause soil compaction, leading to reduced water infiltration rates, increased water runoff and soil erosion, and reduced soil productivity FP16. The use of mechanized machinery may also necessitate the reopening of or creation of new roads, leading to greater fragmentation of the landscape, which divides corridors for wildlife travel FP17. Mechanical cutting practices may also negatively impact the aesthetic quality of an area in the short-term, yielding an un-natural appearance near areas of cuttings FP18. **Despite the potential for short-term negative impacts of mechanical harvesting, the long-term benefits of restoring structure and composition to forest stands typically outweighs the risks through increasing resiliency or resistance to disturbance. Further, accepting the trade-offs between negative short-term impacts of harvesting practices and consequences of long-term impacts from uncharacteristic (large and high-severity) wildfire in dry, frequent-**	Clarification on trade-offs of negative impacts with the trade-off of landscape scale uncharacteristic high-severity fire.	Internal review

Ch. 3 -- Forest Products -- 3.10.3 Environmental Consequences -- 3.10.3.2 Indicator: Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- 3.10.3.2.2 Alternative 1	The PTSQ is estimated at 16.3 MMCF, which is well below the SYL (70.6 MMCF) of the Santa Fe NF. This suggests that this alternative is easily sustainable over the long-term, but would not be effective at reducing the overstocked condition of the forest (FP4, 10). The PWSQ is estimated at 20.2 MMCF for the first decade of the revised plan. Levels of fuelwood production under this alternative would be expected to continue to meet the needs and expectations of Forest users. However, this alternative would be the second least effective alternative at encouraging economic growth to the forest or to surrounding local communities through the sale of forest products, **largely failing** to provide for associated beneficial effects (FP1-2).	Ch. 3 -- Forest Products -- 3.10.3 Environmental Consequences -- 3.10.3.2 Indicator: Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- 3.10.3.2.2 Alternative 1	The PTSQ is estimated at 16.3 MMCF, which is well below the SYL (70.6 MMCF) of the Santa Fe NF. This suggests that this alternative is easily sustainable over the long-term, but would not be effective at reducing the overstocked condition of the forest (FP4, 10). The PWSQ is estimated at 20.2 MMCF for the first decade of the revised plan. Levels of fuelwood production under this alternative would be expected to continue to meet the needs and expectations of Forest users. However, this alternative would be the second least effective alternative at encouraging economic growth to the forest or to surrounding local communities through the sale of forest products, providing for associated beneficial effects **at smaller levels than those anticipated for alternatives 2 and 4** (FP1-2).	Edited to reflect comment made on comparison of alternatives table. The benefits are still there, but at a much smaller magnitude.	Public comments
Ch. 3 -- Forest Products -- 3.10.3 Environmental Consequences -- 3.10.3.2 Indicator: Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- 3.10.3.2.3 Alternative 3	Plan objectives for vegetation in alternative 3 prioritize the use of prescribed burning and naturally ignited wildfires to meet resource objectives, instead of mechanical methods. As a result, alternative 3 would reduce the quantity and availability of forest products more than any other alternative. Tthough the estimated quantities of PTSQ and PWSQ are slightly higher than estimates for alternative 1. The prevalence of fire without the pre-treatment of thinning has the potential to lead to increased fire intensity, tree mortality, and damage to residual trees, degrading the quality of timber sources into the future FP22. Further, the addition of 270,130 acres recommended for designated wilderness, combined with other plan direction eliminates the suitable timber base from the forest, which would reduce timber outputs and reduce availability of forest products acquired through mechanized means (FP7-8). As the bulk of these recommended areas are pre-existing as IRAs, where access for forest products is already challenging, nearby communities and forest users have already adapted to these conditions and regulations.	Ch. 3 -- Forest Products -- 3.10.3 Environmental Consequences -- 3.10.3.2 Indicator: Projected Wood and Timber Sale Quantities (PWSQ, PTSQ) -- 3.10.3.2.3 Alternative 3	Plan objectives for vegetation in alternative 3 prioritize the use of prescribed burning and naturally ignited wildfires to meet resource objectives, instead of mechanical methods. As a result, alternative 3 would reduce the quantity and availability of forest products more than any other alternative, **and would provide negligible levels of beneficial effects tied to mechanical treatments (FP1-5).** Tthough the estimated quantities of PTSQ and PWSQ are slightly higher than estimates for alternative 1, **due to reclassifying forested lands into lands suited and lands not-suited for timber production (all of alt. 3); lands not-suited for timber production simply show estimated timber amounts present on the landscape to quantify the resource**. The prevalence of fire without the pre-treatment of thinning has the potential to lead to increased fire intensity, tree mortality, and damage to residual trees, degrading the quality of timber sources into the future FP22. Further, the addition of 270,130 acres recommended for designated wilderness, combined with other plan direction eliminates the suitable timber base from the forest, which would reduce timber outputs and reduce availability of forest products acquired through mechanized means (FP7-8). As the bulk of these recommended areas are pre-existing as IRAs, where access for forest products is already challenging, nearby communities and forest users have already adapted to these conditions and regulations.	Added based on comment received on comparison of alts table; added based on comments received that were confused about suited and non-suited bases and how non-suited can have more “harvests” than suited	Public comments
Ch. 3 -- Rangelands and Grazing -- 3.11.1 Affected Environment	At present, 244 grazing permits are authorized in the Santa Fe NF, on 75 grazing allotments, **with a maximum permitted stocking rate of about 11,400 (animal unit months [AUMs]).** Since 2005, livestock management on Forest has been shifting to an adaptive management approach which allows stocking levels to change in response to variability in forage production, water availability, and precipitation patterns.	Ch. 3 -- Rangelands and Grazing -- 3.11.1 Affected Environment	At present, 244 grazing permits are authorized in the Santa Fe NF, on 75 grazing allotments. Since 2005, livestock management on Forest has been shifting to an adaptive management approach which allows stocking levels to change in response to variability in forage production, water availability, and precipitation patterns.	Deleted to resolve confusion over different numbers of AUMs in different documents. This sentence reflects numbers from a specific year and is no longer relevant.	Public comments
Ch. 3 -- Recreation -- 3.12.1 Affected Environment -- 3.12.1.1 Recreation Opportunity Spectrum	**The ROS scale** encompasses recreation opportunities ranging from less to more developed settings. The ROS uses the following descriptors for recreation settings ranging from least **to most developed:**	Ch. 3 -- Recreation -- 3.12.1 Affected Environment -- 3.12.1.1 Recreation Opportunity Spectrum	**The Forest Service uses six ROS classes as defined by in the USDA Forest Service 1986 publication "ROS Users Guide" that** encompasses recreation opportunities ranging from less to more developed settings. The ROS uses the following descriptors for recreation settings ranging from least **to more developed settings, based on six factors: 1) access; 2) other non-recreational uses; 3) onsite management; 4) social interaction; 5) acceptability of visitor impacts; and 6) acceptable level of regimentation (USDA 1986)**:	Added to respond to concerns that ROS was not explained in enough detail, and to reference the "ROS Users Guide" as requested by commenter	Public comments
Ch 3 -- Scenic Resources -- 3.16.4 Environmental Consequences -- 3.16.4.3 Indicator: Consequences of Multiple Use on Scenic Resources -- 3.16.4.3.3 Vegetation Management -- 3.16.4.3.3.1 Effects Common to All Alternatives	In the long term, the removal of some trees, dependent on scale and intensity of treatment, may improve scenic character and make scenic attributes more resilient to uncharacteristic large-scale disturbance like fire or large insect outbreaksS27 .	Ch 3 -- Scenic Resources -- 3.16.4 Environmental Consequences -- 3.16.4.3 Indicator: Consequences of Multiple Use on Scenic Resources -- 3.16.4.3.3 Vegetation Management -- 3.16.4.3.3.1 Effects Common to All Alternatives	In the long term, the removal of some trees, dependent on scale and intensity of treatment, may improve scenic character as **thinning makes stands more resilient, which in turn may protect the scenic character of an area and buffer it from detrimental impacts from large scale** like fire or large insect outbreaksS27 .	Attempt to clarify that thinning does not make scenic attributes more resilient, but rather	Internal review

DEIS Location	Original Text	Updated DEIS Location	Revised Text	Rationale	Revision Need
Ch. 3 -- Socioeconomics -- 3.17.1.4 Quality of Life	Quality of life has an amorphous definition, but for this report, **it** encompasses the subjective satisfaction an individual has with their life (e.g., people's experience of life) and the objective circumstances in which they find themselves (e.g., physical and mental health, safety, impacts from their environment, respect for their values).	Ch. 3 -- Socioeconomics -- 3.17.1.4 Quality of Life	Quality of life has an amorphous definition. **Some examples of what a high quality of life may include: an economic structure compatible with locally preferred work and leisure patterns; forest uses and practices in harmony with community beliefs and values; an absence of disruptive conflicts within the community; or optimism about the advantages of living in the area (FSH 1909.17, chapter 30).** For this report, **quality of life** encompasses the subjective satisfaction an individual has with their life (e.g., people's experience of life, **such as expression and perceived reflection of beliefs and values**) and the objective circumstances in which they find themselves (e.g., physical and mental health, safety **or lack of conflict**, impacts from their environment, respect for their values).	FSH 1909.17_30 has examples of what constitutes quality of life. Recommend adding between draft and final.	Internal Review
Ch. 3 -- Socioeconomics -- 3.17.1.4 Quality of Life -- 3.17.1.4.2 Health and Safety -- Table 9	Access to exercise opportunities	DELETED	DELETED	Row deleted as metric is not showing relevant data for the access to forest, rather showing data related to access to parks and recreational facilities: Access to Exercise Opportunities measures the percentage of individuals in a county who live reasonably close to a location for physical activity. Locations for physical activity are defined as parks or recreational facilities. Individuals are considered to have access to exercise opportunities if they: • reside in a census block that is within a half mile of a park, or • reside in an urban census block that is within one mile of a recreational facility, or • reside in a rural census block that is within three	Internal Review
Ch. 3 -- Socioeconomics -- 3.17.2 Methodology and Assumption -- 3.17.2.2 Indicators -- 3.17.2.2.` Indicator: Employment and Labor Income -- 3.17.2.2.1.1.2 Timber and Forest Products Management -- Table 11	Unit labels were in MMCF, but numbers were CCF	Ch. 3 -- Socioeconomics -- 3.17.2 Methodology and Assumption -- 3.17.2.2 Indicators -- 3.17.2.2.` Indicator: Employment and Labor Income -- 3.17.2.2.1.1.2 Timber and Forest Products Management -- Table 11	Unit labels now say CF	Units were MMCF but numbers were CF	Internal Review
Ch. 3 -- Socioeconomics -- 3.17.2 Methodology and Assumption -- 3.17.2.3 Stressors and Drivers				Information in GTR-383 specific to the Santa Fe can be referenced here. Recommend adding language between draft and final.	Internal Review
Ch. 3 -- Designated Areas -- 3.18.2 Inventoried Roadless Areas -- 3.18.2.1 Affected Environment	The Santa Fe NF has **55** IRAs, totaling **about** 241,400 acres **(Figure B)**. The largest IRA is the Thompson Peak IRA at **2,979** acres. The smallest is the Sparks Creek IRA with about 80 acres. IRA are found on every district of the forest. Inventoried roadless areas may overlap other designated areas such as the Pecos Wild and Scenic River within the Pecos Wilderness. The most restrictive management direction applies when designated areas overlap.	Ch. 3 -- Designated Areas -- 3.18.2 Inventoried Roadless Areas -- 3.18.2.1 Affected Environment	The Santa Fe NF has **54** IRAs, totaling **more than** 241,400 acres. The largest IRA is the Thompson Peak IRA at **about 33,000** acres. The smallest is the Sparks Creek IRA with about 80 acres. IRA are found on every district of the forest. Inventoried roadless areas may overlap other designated areas such as the Pecos Wild and Scenic River within the Pecos Wilderness. The most restrictive management direction applies when designated areas overlap.	Technical correction	Internal Review
Ch. 3 -- Designated Areas -- 3.18.7 Nationally Designated Trails -- 3.18.7.4 Environmental Consequences -- 3.18.7.4.1 Indicator: Meeting the nature and purpose of the trail through plan direction	The comprehensive plans for the CDNST and national historic trails would guide management for these trails under all alternatives.	Ch. 3 -- Designated Areas -- 3.18.7 Nationally Designated Trails -- 3.18.7.4 Environmental Consequences -- 3.18.7.4.1 Indicator: Meeting the nature and purpose of the trail through plan direction	The **most current** comprehensive plans for the CDNST and national historic trails would guide management for these trails under all alternatives.	Addresses concern that we did not indicate that the 2009 Comprehensive Plan would be referenced	Public comment -- DA069

Glossary	N/A	Glossary	Canopy Cover. The proportion of the forest floor covered by the vertical projection of the tree crowns (Jennings et al. 1999). Canopy cover is measured using a variety of methods including spherical densiometers, funnels, moose horns, aerial photographs, and hemispherical images. Canopy cover is also known as forest canopy cover; crown cover.	Comments received indicated needing this definition included in the glossary.	Public comments
Glossary	N/A	Glossary	Catastrophic fire. Catastrophic fire can be defined from three different perspectives: economic (the cost of damage), social (how it is viewed by the public), and ecological (biological effects of the fire) (Carey and Schumann 2003). Covington and Moore (1994) defined catastrophic fire as a fire that kills a majority of	Definition needed based on comments received. Citing Covington and Moore 1994 and Carey and Schumann 2003.	Public comments
Glossary	N/A	Glossary	Linked disturbance. Instances where one disturbance can alter the severity, extent, or occurrence probability of a subsequent disturbance (Hart et al. 2015),		Internal review
Appendix B. Description of Analysis Processes -- Vegetation -- Determining Treatment Objectives -- Table B-2	Table B-2 Code m s	Appendix B. Description of Analysis Processes -- Determining Treatment Objectives -- Table B-2	Table B-2 Code s m	Codes were swapped	Internal Review
Appendix B. Description of Analysis Processes -- Air	N/A	Appendix B. Description of Analysis Processes -- Air	Livestock Emissions: Emissions from livestock were found to be a relatively small source of emissions from the forest (an estimated equivalent to 0.04% of greenhouse gas emissions from fire over a 10 year average). Table X. Livestock emissions by alternative Alternative 1 Alternative 2 Alternative 3 Alternative 4 AUM min 64339 66229 61429 63877 AUM max 93500 102192 71616 89711 AUM avg 78920 84211 66523 76824 Tons CH4 min 383 394 366 380 Tons CH4 max 557 608 426 534 Tons CH4 avg 470 501 396 457 Equivalent Tons CO2 min 7661 7886 7314 7606 Equivalent Tons CO2 max 11133 12168 8527 10682 Equivalent Tons CO2 avg 9397 10027 7921 9147 10 year average % comp fire 0.04% 0.04% 0.03% 0.04% Change from Current (Alt 1) in Equivalent Tons CO2 avg -630 1476 250 * assumed worst case scenario is that a cow grazing on grass produces approximately 300g CH4/day (141±147 g CH4/day-cow). From: McGinn, S.M., Turner, D., Tomkins, N., Charmley, E., Bishop-Hurley, G. and Chen, D. (2011), Methane Emissions from Grazing Cattle Using Point-Source Dispersion. J. Environ. Qual., 40: 22-27. doi:10.2134/jeq2010.0239	Added a paragraph about livestock emissions to justify why they are not analyzed like fire it in this section.	Public comments
Appendix C. Timber Suitability and Forest Products Analyses Process	Timber production is the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.19). Timber production activities can contribute to social, economic, and ecological sustainability. The National Forest Management Act (NFMA) requires that the agency determine the suitability of National Forest System lands for timber production and has specific requirements for timber suitability analysis in land management plans. Note that there is a distinction between timber harvest as a resource use (that is, timber production) and timber harvest as a management tool to achieve desired conditions. Timber harvest on lands classified as not suitable for timber production may be used as a tool designed to achieve desired conditions such as, restoring seral state proportions and species compositions, and	Appendix C. Timber Suitability and Forest Products Analyses Process	Timber production is the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.19). Timber production activities can contribute to social, economic, and ecological sustainability. The National Forest Management Act (NFMA) requires that the agency determine the suitability of National Forest System lands for timber production and has specific requirements for timber suitability analysis in land management plans. Note that there is a distinction between timber harvest as a resource use (that is, timber production) and timber harvest as a management tool to achieve desired conditions. **Localized, small-scale, or non-commercial (e.g., single tree, hand-thinning**) timber harvest on lands classified as not suitable for timber production may be **used to remove hazard trees along trails or in campgrounds, remove heavily damaged timber as salvage, and may be used** as a tool designed to achieve desired conditions such as, restoring seral state proportions and species compositions **(e.g., removing encroaching trees from grasslands),**, and encouraging old-growth development or protection.	Numerous edits to this section to clarify the difference between suited and non-suited lands.	Public comments -- FP012
Appendix C. Timber Suitability and Forest Products Analyses Process -- Forest Products Analysis -- Estimating Quantities of Timber and Other Forest Products for Two Decades	The timber suitability analysis detailed above provides a basis to calculate metrics of timber and forest products **in** the Forest over the next 15 to 20 years. The details of these calculations are included in the following sections—Sustained Yield Limit and Projected Timber and Wood Sale Quantities.	Appendix C. Timber Suitability and Forest Products Analyses Process -- Forest Products Analysis -- Estimating Quantities of Timber and Other Forest Products for Two Decades	The timber suitability analysis detailed above provides a basis to calculate metrics of timber and forest products **estimated to be present and potentially available on** the Forest over the next 15 to 20 years. The details of these calculations are included in the following sections—Sustained Yield Limit and Projected Timber and Wood Sale Quantities.	Minor edits added for clarification.	Internal Review

Appendix C. Timber Suitability and Forest Products Analyses Process -- Forest Products Analysis -- Estimating Quantities of Timber and Other Forest Products for Two Decades -- Projected Timber Sale Quantity (PTSQ) and Projected Wood Sale Quantity (PWSQ)	Projected timber sale quantity (PTSQ) and projected wood sale quantity (PWSQ) are the quantities of timber and other forest products that **can be expected** to be sold during the first two decades of the revised plan, based on the projected vegetation treatments outlined in plan objectives. The projected wood sale quantity includes all woody material likely to be sold from harvests whether or not the woody material meets utilization standards. The projected timber sale quantity is a subset of the projected wood sale quantity, and is an estimate of the quantity of timber expected to be sold during the plan period. The volume in the projected timber sale quantity is the volume that meets utilization standards, and must be equal to or lower than the sustained yield limit for the forest (unless a short-term departure from the limit is authorized). For Region 3, the applicable utilization standards for determining the PTSQ and	Appendix C. Timber Suitability and Forest Products Analyses Process -- Forest Products Analysis -- Estimating Quantities of Timber and Other Forest Products for Two Decades -- Projected Timber Sale Quantity (PTSQ) and Projected Wood Sale Quantity (PWSQ)	Projected timber sale quantity (PTSQ) and projected wood sale quantity (PWSQ) are the quantities of timber and other forest products that **have the potential** to be sold during the first two decades of the revised plan, based on the projected vegetation treatments outlined in plan objectives. The projected wood sale quantity includes all woody material likely to be sold from harvests whether or not the woody material meets utilization standards. The projected timber sale quantity is a subset of the projected wood sale quantity, and is an estimate of the quantity of timber **that would be** expected to be sold during the plan period **if vegetation treatment objectives were met**. The volume in the projected timber sale quantity is the volume that meets utilization standards, and must be equal to or lower than the sustained yield limit for the forest (unless a short-term departure from the limit is authorized). For Region 3, the applicable utilization standards for determining the PTSQ and representing it in both cubic and board feet are:	Minor edits added for clarification	Internal Review
Appendix C. Timber Suitability and Forest Products Analyses Process -- Forest Products Analysis -- Estimating Quantities of Timber and Other Forest Products for Two Decades -- Projected Timber Sale Quantity (PTSQ) and Projected Wood Sale Quantity (PWSQ)	Harvest activity may occur on "Lands suited for timber production" and also on "Lands not suited for timber production," based on compatibility with desired conditions and objectives (Phase 2-Timber Suitability Analysis).The estimation of these two quantities must be consistent with the plan components of the final land management plan; the unique mix of plan components in each alternative; and consistent with the fiscal and organizational capability of the unit. The planned management objectives for PTSQ and PWSQ are also limited based upon constraints described in FSH 1909.12, Chapter 60, section 64.32.	Appendix C. Timber Suitability and Forest Products Analyses Process -- Forest Products Analysis -- Estimating Quantities of Timber and Other Forest Products for Two Decades -- Projected Timber Sale Quantity (PTSQ) and Projected Wood Sale Quantity (PWSQ)	Harvest activity may occur on "Lands suited for timber production" and also on "Lands not suited for timber production," based on compatibility with desired conditions and objectives (Phase 2-Timber Suitability Analysis)., **though only lands suited for timber production would be managed as areas for the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees for industrial or consumer use. As described earlier, on lands not suited for timber production, tree cuttings may still occur in order to increase safety in areas popular for recreational activities, and to improve stand health, function, or composition in accordance with desired conditions. Thus, in the following tables, the quantities of timber in both suited lands and non-suited lands are totaled to give a full representation of what quantities of timber are present on the landscape and for comparison of that quantity in relation to the SYL of the Forest**. The estimation of these two quantities must be consistent with the plan components of the final land management plan; the unique mix of plan components in each alternative; and consistent with the fiscal and organizational capability of the unit. The planned management objectives for PTSQ and PWSQ are also limited based upon constraints described in FSH 1909.12, Chapter 60, section 64.32.	Added much more description here due to confusion expressed in comments	Public comments
Appendix C. Timber Suitability and Forest Products Analyses Process -- Forest Products Analysis -- Estimating Quantities of Timber and Other Forest Products for Two Decades -- Projected Timber Sale Quantity (PTSQ) and Projected Wood Sale Quantity (PWSQ) -- Calculations -- Table C-10	*wrong number for alternative 3 decade 1*	Appendix C. Timber Suitability and Forest Products Analyses Process -- Forest Products Analysis -- Estimating Quantities of Timber and Other Forest Products for Two Decades -- Projected Timber Sale Quantity (PTSQ) and Projected Wood Sale Quantity (PWSQ) -- Calculations -- Table C-10	*these numbers match what is in the raw data files; rounded the final quantity like the other tables had done*	Internal consistency	Internal Review
Appendix D. Documentation of the Analysis of At-Risk Species -- Discussion -- Table D- 1. Issues and threats associated with at-risk species	J. Ground/Soil Disturbance (Roads and Trails)	Appendix D -- Documentation of the Analysis of At-Risk Species -- Discussion -- Table D- 1. Issues and threats associated with at-risk species	J. Ground/Soil Disturbance (**Livestock Grazing,** Roads and Trails) At-risk species listed were updated to show they are impacted by livestock grazing (X added in column J for their species row)	Added to address public concern about not us not directly addressing the threat livestock grazing poses to at-risk species	Public comment
Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species	The following tables reference **all** plan components within the Santa Fe NF draft revised plan that ensure management for persistence of each at-risk species. For a detailed description of these at-risk species, please refer to the Santa Fe NF revised plan FEIS, chapter 3.	Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species	The following tables reference plan components within the Santa Fe NF draft revised plan that ensure management for persistence of each at-risk species. **While these tables capture the majority of plan components, they are not all inclusive.** For a detailed description of these at-risk species, please refer to the Santa Fe NF revised plan FEIS, chapter 3.	Note made to address the possibility that it might be the case that not all plan componets are captured in the crosswalk, although most of them are. This is due to things shifting around when editing and human error.	Internal Review
Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Arizona Willow	N/A	Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Arizona Willow	Added "Ground/Soil Disturbance" to the "Issues and Threats" column	Added to address public concern about not us not directly addressing the threat livestock grazing poses to at-risk species	Public comments

Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Holy Ghost Ipomopsis	N/A	Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Holy Ghost Ipomopsis	Added "Intrusive Human Acitivity" to the "Issues and Threats" column	modifed based on public comments	Public comments
Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- New Mexico Meadow Jumping Mouse	Zapus hudsonius luteus is federally listed as endangered. The species occurs in dense mid-elevation riparian long grass habitats in the western United States. Proposed critical habitat exists in the Santa Fe NF, and the species has been documented in the forest. The number of historic locations of the species in the forest is greater than outside the forest boundary. The major threats faced are the degradation of riparian habitat caused by actions such as legacy grazing, post-wildfire flooding events, and unmanaged recreation. Outside of the forest, agricultural uses and development of land have permanently changed historic locations.	Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- New Mexico Meadow Jumping Mouse	Zapus hudsonius luteus is federally listed as endangered. The species occurs in dense mid-elevation riparian long grass habitats in the western United States. Proposed critical habitat exists in the Santa Fe NF, and the species has been documented in the forest. The number of historic locations of the species in the forest is greater than outside the forest boundary. **Within the Santa Fe NF, the jumping mice are found in isolated locations along the Rio Cebolla and San Antonio Creek. In 2005 and 2006, the mouse was captured at 5 localities within the Jemez Mountains in northern New Mexico, Sandoval County (Frey 2005a). A study conducted by Carol Chambers 2016-2019 also detected 97 mice along multiple reaches of the Rio Cebolla and the Rio de Las Vacas (Chambers 2019).**The major threats faced are the degradation of riparian habitat caused by actions such as legacy grazing, post-wildfire flooding events, and unmanaged recreation. Outside of the forest, agricultural uses and development of land have permanently changed historic locations.	Addresses concerns that we did not use BASI in our discussion of the NMMJM -- added citations and referenced recent studies	Public comments
Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- New Mexico Meadow Jumping Mouse	N/A	Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- New Mexico Meadow Jumping Mouse	Added "Ground/Soil Disturbance" to the "Issues and Threats" column	Added to address public concern about not us not directly addressing the threat livestock grazing poses to at-risk species	Public comments
Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Northern Leopard Frog	N/A	Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Northern Leopard Frog	Added "Ground/Soil Disturbance," "Intrusive Human Activity," and "Chemical Applications" to the "Issues and Threats" column	Added to address public concern about not us not directly addressing the threat livestock grazing poses to at-risk species; consistency between At-Risk Species analysis in Vol 1 and Appendix E in Vol 2	Public comments; internal consistency
Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Rio Grande Chub	Gila pandora have declined in range and abundance over the last 100 years **and the species has been extirpated from the mainstem of the Rio Grande River.** Populations can be threatened by habitat degradation that includes habitat loss, modification, and fragmentation, as well as from interactions with nonnative species . Rio Grande chub iImpacts in the Santa Fe NF include degraded stream and riparian habitat as well as water quality and quantity as a result of inadequately maintained roads and trails, water diversions, livestock grazing, and recreational use. Catastrophic fire and other extreme events such as drought and floods can also impact the species. Predation and Ccompetition and predation with nonnative species can be extensive threats to Rio Grande Chub populations through predation from brown trout and by competition for food resources with white sucker. Rio Grande	Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Rio Grande Chub	Gila pandora have declined in range and abundance over the last 100 years. Populations can be threatened by habitat degradation that includes habitat loss, modification, and fragmentation, as well as from interactions with nonnative species . Rio Grande chub iImpacts in the Santa Fe NF include degraded stream and riparian habitat as well as water quality and quantity as a result of inadequately maintained roads and trails, water diversions, livestock grazing, and recreational use. Catastrophic fire and other extreme events such as drought and floods can also impact the species. Predation and Ccompetition and predation with nonnative species can be extensive threats to Rio Grande Chub populations through predation from **non-native species such as** brown trout and by competition for food resources with white sucker **(Rees and Miller 2005a)**. Rio Grande chub have beenare petitioned for listing under the Endangered Species Act.	Addressing concerns that BASI was not used for Rio Grande Chub -- added citation and removed extirpation claim	Public comment
Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Rio Grande Cutthroat Trout	Oncorhynchus clarkii virginalis occur in approximately **10** percent of their presumed historic range.	Appendix E. At-Risk Species Crosswalk -- Section A. At-Risk Species Crosswalk - by Species -- Rio Grande Cutthroat Trout	Oncorhynchus clarkii virginalis occur in approximately **11** percent of their presumed historic range **(Bakevich et al. 2019).**	Addressing concerns that BASI was not used -- added citation	Public comment

Appendix E. At-Risk Species Crosswalk -- Section B. At-Risk Species Crosswalk - Issues and Threats -- Threat J	Threat J: Ground and Soil Disturbance (Roads and Trails) Ground or soil disturbance can impact at-risk species in a multitude of many ways. Soil compaction can crush plant species or alter soil characteristic necessary for at-risk plants, thus inhibiting there their potential for spread. Invertebrates and amphibians can also be impacted by this issue when soil characteristics are altered or soil is compacted. Compaction mostly occurs when roads or trails are created, especially non-system roads or trails that may enter into areas where at-risk species exist. Other activities that increase ground and soil disturbance may include log landings for forestry activities as well as recreational and range improvements (e.g., campgrounds, picnic areas, mineral and feed sites for livestock). Since some at-risk populations may be isolated and small; even the smallest of	Appendix E. At-Risk Species Crosswalk -- Section B. At-Risk Species Crosswalk - Issues and Threats -- Threat J	Threat J: Ground and Soil Disturbance **(Livestock Grazing, Roads and Trails, Recreation).** Ground or soil disturbance can impact at-risk species in a multitude of many ways. Soil compaction can crush plant species or alter soil characteristic necessary for at-risk plants, thus inhibiting there their potential for spread. Invertebrates and amphibians can also be impacted by this issue when soil characteristics are altered or soil is compacted. Compaction mostly occurs when roads or trails are created, especially non-system roads or trails that may enter into areas where at-risk species exist. Other activities that increase ground and soil disturbance may include log landings for forestry activities as well as recreational and range improvements (e.g., campgrounds, picnic areas, mineral and feed sites for livestock), **and livestock grazing**. Since some at-risk populations may be isolated and small; even the smallest of footprints may impact their viability if it occurs in a highly sensitive area.	Added to address public concern about not us not directly addressing the threat livestock grazing poses to at-risk species	Public comment