Wallow Fire 2011

Large Scale Event Recovery

Rapid Assessment Team

Wildlife Report

Apache-Sitgreaves National Forests

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Wildlife and Rarer Plants

As described in the BAER report, initial priority for implementation of Wallow Fire recovery actions was given to threatened, endangered and candidate species. Emergency treatments selected for implementation addressed only the most immediate and pressing threats to populations and habitat loss. Significant ongoing threats remain, not only to the four terrestrial and two aquatic species addressed in the BAER report, but to the numerous other wildlife, fish and plant species impacted by the Wallow Fire, that in total contribute to a rich assemblage of animal life, as well as the economic vitality of the local communities.

The species addressed in the BAER report include Mexican spotted owl (*Strix occidentalis mexicanus*), Southwestern willow flycatcher (*Empidonax traillii*), Three Forks springsnail (*Pyrgulopsis trivialis*), Chiricahua leopard frog (*Rana chiricahuensis*), Mexican wolf (*Canis lupus baileyi*), New Mexico meadow jumping mouse (*Zapus hudsonicus luteii*).

Based on the risk assessment conducted by the BAER Wildlife Resource Team, risk to Mexican spotted owls was found to be very high. Of particular concern was the large number of nest sites (protected activity centers or PACs) that were impacted by the fire in relation to the total number of PACs occurring on the Apache-Sitgreaves National Forests (ASNF). A total of seventy six (76) Mexican spotted owl PACs, accounting for 58% of the PACs on the ASNF occur within the burn perimeter of the Wallow Fire. Of these, 30 are considered to be at high risk of loss for the owls associated with that individual PAC. Another 23 PACs were considered to be at moderately high risk. In total, 53 PACs, accounting for nearly 70% on those within the fire perimeter and 37% of those found on the ASNF have been seriously compromised from this fire alone in terms of supporting successfully breeding Mexican spotted owls in the future.

Due to the extent of the impact of the Wallow Fire on Mexican spotted owl nest sites, it is critical that actions be taken to mitigate risk to those PACs within the fire boundary that remained unburned or were burned with low fire severity. Similarly, within PAC's that were impacted more severely by the fire, actions are needed to both prevent further deterioration of their recovery potential as well as enhance recovery rates.

Pheromone treatment, as detailed with the Forest Insect and Disease portions of this document are recommended for implementation within 20 PACs where fire intensities were low or where significant unburned area remains. Implementation of pheromone treatments within these PACs will reduce the risk of increased beetle induced tree mortality which is expected to occur within the fire perimeter. If left untreated, additional degradation and loss of Mexican spotted owl PACs is expected to occur.

To prevent further deterioration and to enhance recovery rates, seeding and heli-mulching is recommended within all 5 PACs, totaling 1,000 acres, where at least 83% f the PAC burned in high and moderate severity. Reforestation activities are also proposed for implementation on an estimated 2,100 acres within these PACs. A final decision on reforestation would follow an assessment of site specific suitability for planting success and continuing needs assessment based on observed natural regeneration.

Although Southwestern willow flycatcher, Three Forks springsnail, and Chiricahua leopard frog were not likely significantly impacted by direct fire impacts, post fire runoff debris, ash, and sediment flow pose a serious and continuing threat. Among these values at risk are three breeding areas for Southwestern willow flycatcher, twenty-four Three Forks springsnail sites, and four Chiricahua leopard frog sites. Specific actions to address these values at risk are detailed in Part 4 – Description of Actions.

Fire impacts on Mexican gray wolves are expected to be most pronounced immediately following the fire, and are directly related to fire impacts on wolf prey species abundance and distribution. Prey species abundance, primarily elk and deer, will respond favorably as forage and browse within the fire perimeter recover. It is further anticipated that deer abundance will exceed pre-fire conditions within five years as browse, including aspen, respond to reduced competition from fire killed conifers.

Although prey numbers are expected to recover quickly, prey distribution may be slower to return to pre-fire conditions. An important factor will be wildlife water availability. Through increased ash and sediment flow from high and moderate severity burn areas, water catchments utilized by wildlife as well as livestock will experience reduced capacity. Reduced water availability is likely to impact Mexican gray wolf pup recruitment through decreased availability of prey in the vicinity of denning sites.

To address this need, prioritization of water catchment cleaning, rebuilding, and refurbishment activities within the fire perimeter must incorporate Mexican gray wolf prey base needs. As described in the range section of this document, a total of fourteen water catchments are considered high priority for rebuilding and refurbishment within the next five years.

A priority action that cuts across most of the resource areas is the reconstruction of the boundary fence between Forest Service and tribal lands. The Wallow Fire compromised the integrity of the boundary fence by destroying wooden stays and fence posts, weakening tensile strength of the wire, and killing trees that have or will, within the next one to five years fall onto the fence. Should the integrity of the boundary fence remain compromised, an influx of additional trespass livestock (horses) onto the Forest from adjacent tribal lands will occur. Increased horse numbers, especially on habitat compromised by the Wallow Fire will not only hamper post-fir recovery and delay the ability of the Forest to restock some areas with domestic livestock, but will likely also result in significant and long-lasting habitat degradation.

Another priority action that cuts across most of the resource areas is the completion of a NEPA analysis that will enable the implementation of prescribed fire and allow for natural fire management on National Forest lands within the boundaries of the Wallow Fire area. The Wallow Fire resulted in significant tree mortality over large areas of the Forest. As these trees fall, they will add to an increased fire hazard. In addition, forage and browse that responded positively to the fire will experience a decline in vigor and palatability. Finally, long-term fire recovery will only be sustained through Forest management that promotes a fire retune interval that is within the range of natural variability.

Numerous monitoring, research, mitigation and restoration projects, as detailed in Part 4 –

Description of Actions, are proposed to aid in the recovery of wildlife, fish, and rare plans impacted by the fire. Although needed, to accelerate recovery in some instances and prevent further habitat degradation or population losses in other instances, it should be stressed that the ability for natural recovery to occur unhindered will be by far the most important factor influencing the rate and trajectory of post-fire recovery. Avoiding, minimizing and mitigating for activities within the fire boundary that delay or impede watershed, hydrologic, or vegetative recovery should be a top priority.

Restocking of burned areas with domestic livestock can delay, or even reverse ecological recovery if not appropriately implemented with ample consideration given to the ability of the herbaceous vegetation to adequately protect soils and continue on a trajectory towards complete recovery while simultaneously providing forage to wild and domestic grazing animals. It is therefore strongly suggested that the Forest follow its recommended guidelines for watershed stability and vegetation recovery.

Reconstruction of allotment and pasture fences also has the potential to negatively impact wildlife, while also providing opportunities to address long standing conflicts between livestock grazing and impacts to sensitive habitats. Measures should be taken to assure that repair and reconstruction of livestock fences result in fences that meet wildlife movement standards, and that abandoned fences are promptly removed to avoid creation of entanglement hazards or impediments to wildlife movement. The forest should also seize this opportunity to evaluate fence alignments. Not only may this provide for the protection of sensitive wildlife habitats and species, it can also prove useful in improving grazing management efficiency and reducing required permittee fence maintenance.

Salvage logging can negatively impact post-fire recovery, through continued soil disturbance, and removal of essential wildlife habitat components. If conducted with appropriate consideration to soil and watershed needs, most of these impacts can be mitigated. Among these needs is the retention or creation of snags and large woody debris to meet Forest Plan Standards and Guidelines. Potential leave snags should be chosen from the largest and most durable available.

Providing for an adequate open road network and camping opportunities, both developed campgrounds and dispersed camping areas, will also impact post-fire recovery. A balance will need to be struck between public safety, open road impacts on soils and watershed values, and the ability of the Forest to help facilitate effective game management for resource protection. Hunting can be used to control or reduce wild ungulate numbers and temporarily move animals out of sensitive habitats, thereby limiting potential negative impacts of wild ungulates on recovering herbaceous and woody vegetation within the fire area.

Part 4 – Descriptions of Actions (Wildlife)

Action – WL-1
Southwestern willow flycatcher Breeding Area Fence Replacement

Description
Assess, replace, and repair as needed the existing exclosure fences at Alpine HP and Nelson Reservoir during fourth quarter year 3. The Alpine HP exclosure fence consists of 1.8 miles of eight foot high woven wire. The Nelson Reservoir exclosure fence consists of 1.6 miles of eight foot high woven wire.

Resource or Issue Area(s)
Wildlife, Fish, and Rare Plants / Soil and Water / Rangeland

Goal and Rational
Post-fire high water flows, silt, and debris are expected to rip out and bend down portions of these fences, exposing Southwestern willow flycatcher nesting habitat to degradation from willow browsing by ungulates.

Consequences of Inaction
Failure to complete this action will result in degradation or loss of Southwestern willow flycatcher breeding habitat.

Cost

Personnel

Contract @ $20,000 / mi. x 3.4 miles = $68,000

Total: $68,000

Action – WL-2
Southwestern Willow Flycatcher Breeding Habitat Willow and Cottonwood Planting Need Assessment and Implementation

Description
Assess the need to augment post-fire flooding and ungulate damaged willows within Southwestern willow flycatcher breeding habitat, and implement willow and cottonwood planting if assessment indicates a need at Alpine HP, Nelson Reservoir, and Greer Sites 1 & 2. Assessment should occur in fourth quarter year 2, and planting in year 3.

Resource or Issue Area(s)
Wildlife, Fish, and Rare Plants / Soil and Water

Goal and Rational
The threat of and likely subsequent flooding damage and resulting breach of the ungulate exclosure fences protecting the vegetation within Southwestern willow flycatcher habitat have the potential to remove or alter breeding habitat components of this species. An assessment of the damage will be required to determine site specific needs for supplemental planting of willow and cottonwood, and to assess changes to stream morphology in order to ensure the maintenance of key Southwestern willow flycatcher breeding habitat components.

Consequences of Inaction
Potential degradation and loss of Southwestern willow flycatcher breeding habitat.

Cost

Personnel

2,000 plants @ $10/plant = $20,000

Total: $20,000

Action – WL-3
Wallow Fire Landscape-Scale Assessment (TES/Wildlife/Aquatics/Rare Plants)

Description
Conduct a landscape-scale assessment to determine existing and desired natural resource, social, and economic conditions, as well as recommended research, monitoring and management actions, and opportunities specific to the Wallow Fire area.

Resource of Issue Area(s)
Wildlife, Fish and Rare Plants / Soil and Water / Hazardous Fuels / Forest Land Vegetation / Rangeland Vegetation / Heritage / Recreation

Goal and Rationale
The goal of this assessment would be to identify conditions, and propose and guide actions in the planning area (the Wallow Fire area) into the future. Incorporate all recovery work to date into one assessment including BAER, FAT, RAT, etc. Conduct the appropriate level of planning and NEPA compliance which will transition to implementation.
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Consequences of Inaction
Incomplete implementation of recovery actions. Incomplete consideration of all possible actions. Lost opportunities for recovery and restoration. Disconnected actions.

Cost

FS coordinator = 20 days @ $350/day X 2 years = $14,000
Contract for Assessment = $150,000

Total = $164,000

Action – WL-4
Three Forks Springsnails Sediment Mitigation and Protection for Sierra Blanca Marshes

Description
Maintain emergency protection measures (wattles) twice a year (early spring and July) during years one through 3.

Resource or Issue Area(s)
Wildlife, Fish, and Rare Plants

Goal and Rational
High and moderate burn severity in the vicinity of the Sierra Blanca marshes has resulted in risk of excessive ash and sediment flow into Three Forks springsnail occupied habitat, threatening to significantly degrade or eliminate this springsnail habitat.

Consequences of Inaction
Degradation of loss of Three Forks springsnail habitat.

Cost

One 2-person crew (seasonal) @ $540 x 2 day x 3 yrs. = $3,240

Wattles @ $1,500 per year x 3 years = 4,500

Total: $7,740

Action – WL-5
Arizona Game and Fish Department Browse Seed Planting and Monitoring

Description
The Arizona Game and Fish Department, in partnership with Rocky Mountain Elk Foundation, Arizona Elk Society, National Wild Turkey Federation, and Arizona Desert Bighorn Sheep Society will evaluate, implement, and monitor browse plant seeding to aid the recruitment and increase densities of browse species to enhance browse and mast crop availability for wildlife within the fire area. Seeding will be accomplished through volunteer labor utilizing hand application methods.

Resource or Issue Area(s)
Wildlife, Fish, and Rare Plants / Forestland Vegetation

Goal and Rational
The Wallow Fire resulted in the direct loss of existing browse plants and seeds within high and moderate burn severity areas of the fire. The fire has also provided for opportunities for improved browse availability for wildlife where overstocked conifers previously overtopped and out competed native browse plants.

Consequences of Inaction
Missed opportunity to partner with the above referenced entities to enhance wildlife habitat within the fire area and promote economic benefits to the local communities associated with mid and longer-term wildlife hunting and viewing opportunities.

Cost

Materials and labor for implementation provided through partnership with Arizona Game and Fish Department.

Total: $0

Action – WL-6
Wallow Fire Area Trespass Livestock Removal

Description
Roundup and remove trespass livestock from the western portion of the Wallow Fire area.

Resource or Issue Area(s)
Wildlife, Fish, and Rare Plants / Soil and Water /Forest Vegetation / Rangeland Vegetation

Goal and Rational
The boundary fence between the Forest and tribal lands was damaged by the Wallow Fire. It is anticipated that significant numbers of trespass livestock (horses) will move on to National Forest lands, compounding resource damage from the fire and that which was already occurring from existing impacts from trespass horse use. In addition, internal allotment and pasture fences experienced fire damage. This will allow expansion of new and existing herds of trespass livestock into areas not previously impacted.

Consequences of Inaction
Trespass horse use within the fire boundary will compound fire impacts, delay restocking with domestic livestock due to slow herbaceous vegetation recovery in some areas of the fire, and result in further degradation of sensitive habitats such as riparian areas.

Cost

Contract: $60,000

Total: $60,000

Action – WL-7
Pronghorn GPS Collar Movement Assessment

Description
Conduct a study to locate movement corridors used by pronghorn antelope. Twelve to fifteen GPS collars would be placed on pronghorn and monitored for approximately two years to determine what areas antelope are using as travel/movement corridors between high and low elevation grassland habitats.

Resource of Issue Area(s)
Wildlife, Fish and Rare Plants

Goal and Rationale
Pronghorn antelope are a management indicator species on the ASNFs, but little is known about their movement patterns and corridors used to travel between high elevation summer (breeding/fawning habitat) and low elevation winter ranges. Openings created and the reduction in understory vegetation due to the Wallow Fire is expected to facilitate movement of pronghorn through this area. Identifying movement corridors will better inform biologists as to areas to improve or maintain for seasonal migrations into the future.

Consequences of Inaction
Reduction or loss of movement corridors between summer and winter range, and resulting declines in population and habitat trends for pronghorn antelope.

Cost
15 GPS collars purchased and monitored for 24 months @ $19,000 each = $285,000 (By AZGFD HPC funds with FS match of $6,000/yr for 3 years up to $18,000

Total: $18,000

Action – WL-8
Critical Threatened, Endangered and Proposed Population Assessment and Monitoring

Description
Mexican spotted owl

- Site fidelity Assessment for all 76 PACs within the fire area during year 1 post-fire
- Annual reproductive success monitoring at all 20 PACs with greater than 83% in low or unburned fire severity years 1 through 10.

PAC No. / Name	PAC No. / Name
30101004 / Upper Conklin Creek	30101041 / Reservation Tank
30101006 / Redondo	30101048 / Bush
30101008 / Backalou Creek	30101051 / Rim
30101009 / Wildcat Point	30101057 / Castle Rock
30101021 / Bear Wallow Schell	30101058 / Oliver
30101022 / Bear Wallow Confluence	30101063 / Butler
30101023 / Fish Barrier	30103004 / Blue Vista 2
30101024 / Gobbler Tank	30103008 / Raspberry
30101031 / McKibben's Pond	30603028 / Quemado-Turner Peak
30101032 / Lowe Snake Creek	30603010 / Quemado-Swapp-Booth #1

- Annual tree mortality monitoring within the 20 PACs receiving pheromone treatments (see table above).

Southwestern willow flycatcher

- Emergency treatment effectiveness monitoring at all four sites years 1 through 5.

Three Forks springsnail

- Annual population and treatment effectiveness monitoring years 1 through 10.

Chiricahua leopard frog

- Annul population trend and fire effects monitoring years 1 through 10.

Aspen, Riparian Woody, and Upland Browse Fire Response and Browsing Impact Monitoring

Develop and implement a monitoring program to evaluate post-fire browse response and the impact of browsing by ungulates on plant growth and recovery during years 1, 3, 5, and 10 post-fire.

Work could be completed by Forest Service crews of biological technicians, or if funding is available, by external entities such as the Ecological Contracts Branch of the Arizona

Game and Fish Department.

Resource or Issue Area(s)
Wildlife, Fish, and Rare Plants / Forest Vegetation / Rangeland Vegetation / Soil and Water

Goal and Rational
The Wallow Fire impacted these species through the loss and/or degradation of critical habitat components both from the fire itself and from post-fire flood and sediment flow events. Monitoring is crucial in order for the Forest to better understand the immediate as well as ongoing impacts of the fire on these species, to assess treatment effectiveness, allow for adaptive management, and insure that recovery actions are data driven.

The Wallow Fire is expected to promote significant aspen regeneration, as well as riparian woody species and upland browse. The recovery of these species following the fire will, in part depend on the degree of ungulate browsing that occurs. Monitoring to determine plant response to the fire and browsing pressure will better inform ongoing and future livestock and wildlife management actions within the fire area.

Consequences of Inaction
The Forest will lack an adequate understanding of the impact of the fire on these plant and wildlife species. Critical data will be lacking leaving the Forest unable to make informed and timely decisions related to needed fire recovery actions and informed livestock and game management.

Cost

<u>Mexican spotted owl</u>

Personnel	
5 two-person (seasonal) crews for 60 days	
(all 76 PACs for 1 year)	$ 81,000
2 two-person (seasonal) crews for 60 days	
years 2 through 10 @ $32,000/yr.	$291,600
Equipment (vehicles)	
5 trucks x 3 months each for 1 year	$ 15,000
2 trucks x 3 months each years 2 through 10	$ 36,000
Materials/Supplies	
Yr 1	$ 1,500
Yr 2 – 10 ($500 per year)	$ 4,500

Total: $429,600

<u>Southwestern willow flycatcher</u>

Personnel	
1 two-person (seasonal) crews	
for 10-days = $2,700 x 10 years	$ 27,000

Equipment (vehicles)
2 x $500 = $1,000/yr x 10 yrs. $ 10,000

Total: $37,000

Three Forks springsnail

Personnel

1 2-person (seasonal) crew
for 1 day = $270 x 10 yrs. $ 2,700

Total: $2,700

Chiricahua leopard frog

Personnel

1 2-person crew (seasonal) for
10 days = $2,700 x 10 yrs. $ 27,000

Total: $27,000

Aspen, Riparian Woody, and Upland Browse Fire Response and Browsing Impact Monitoring

Contract work: $95,000

Total: $95,000

Grand Total: $591,300

Action – WL-9
Mexican Spotted Owl PAC and Critical Habitat Soil Stabilization

Description
Seeding and heli-mulching within 5 PACs where at least 83% of the PAC burned in high and moderate severity. A total of 1,000 acres would be seeded and mulched.

PAC No. / Name	% High and Moderate	PAC Acres	Treatment Acres
30106012 / EFLCR	96.9	630	117
30101028 / Lower KP Creek	94.1	684	644
30101033 / Tenney	90.9	612	45
30101010 / Oscar	85.9	601	72
30101003 / Conklin Creek	83.8	656	122
Total			1000

Resource or Issue Area(s)
Wildlife, Fish, and Rare Plants / Soil and Water

Goal and Rational
The Wallow Fire impacted 76 Mexican spotted owl PACs, accounting for 58% of the PACs on the ASNF. Of these, 30 are considered at high risk of loss for owls associated with that individual PAC. Another 23 PACs were considered to be at moderately high risk. Given the extent of loss, it is critical that further loss and degradation of owl PACs and critical habitat impacted by the fire is prevented, and that recovery is promoted to the extent possible. Mulching and seeding is already planned to occur within areas encompassing all or portions of numerous PAC's. The five PACs listed above are not included in existing planned treatment areas.

Consequences of Inaction
Additional degradation of Mexican spotted owl PACs and delayed nesting habitat recovery.

Cost
Seeding – 1,000 acres @ $85/acre = 85,000
Mulching – 1,000 acres @ $750/acre = 750,000

Total = $835,000

Action – WL-10
Elk Exclosure Fence Assessment, Repair, and Replacement

Description
Assess the condition of elk exclosures within the fire area that were impacted by the Wallow Fire and post-fire flood events. Replace or repair fences as necessary.

Resource or Issue Area(s)
Wildlife, Fish, and Rare Plants / Range / Soil and Water

Goal and Rational
The Wallow Fire likely impacted a number of elk exclosures that were constructed to protect riparian values, fisheries, and aspen. The condition of these exclosures is currently unknown. It is assumed, however, that ten of these exclosures may have been impacted. Repair or replacement of these exclosure fences will need to be completed between post-fire years one through three. In riparian areas where the threat of post-fire flooding damage remains high, fence repair should be delayed until this threat is diminished.

Consequences of Inaction
Loss of riparian values or aspen stands due to excessive elk herbivory within areas formally excluded from elk use. In some areas, these impacts will include damage to woody riparian plant species such as Bebb's willow.

Cost

Contract $125,000 for 5 exclosures each for two years = $250,000

Total: $250,000

Action – WL-11
Rare Plant Population Assessment, Protection Measures, and Fire Response Monitoring

Description
Conduct assessment and monitoring of known populations of Forest Service sensitive plant species to determine their status within the Wallow Fire area and needed protection measures. Species assessed would include the following:

Goodding's Onion	*Allium gooddingii*
Greene Milkweed	*Asclepias uncialis ssp. Uncialis*
Villous Groundcover Milkvetch	*Astragalus humistatus var. crispulus*
White Mountains Paintbrush	*Castilleja mogollonica*
Gila Thistle	*Cirsium gilense*
Yellow Ladys-slipper	*Cypripedium parviflorum var. pubescens (=C. calceolus var. pubesens, C. pubescens)*
Heathleaf Wild Buckwheat	*Eriogonum ericifolium var. ericifolium*
Wislizeni Gentian	*Gentianella wislizeni*
Arizona Sneezeweed	*Helenium arizonicum*
Arizona Sunflower	*Helianthus arizonensis*
Eastwood Alum Root	*Heuchera eastwoodiae*
Arizona Alum Root	*Heuchera glomerulata*
Mogollon Hawkweed	*Hieracium brevipilum (=H. fendleri var. mogollense)*
Heartleaf Groundsel	*Packera cardamine (=Senecio cardamine)*
Maguire's Beardtongue	*Penstemon linarioides ssp. Maguirei*
Davidson's Cliff Carrot	*Pteryxia davidsonii*
Parish's Alkali Grass	*Pucinellia parishii*
Blumer's Dock	*Rumex orthoneurus*
Arizona Willow	*Salix arizonica*
Bebb's Willow	*Salix bebbiana*
Mogollon Clover	*Trigolium longipes ssp. Neurophyllum (=T. neurophyllum)*

Resource or Issue Area(s)
Wildlife, Fish and Rare Plants / Forest Vegetation/ Rangeland Vegetation / Soil and Water

Goal and Rational
Determine the status of these species within the Wallow Fire burn area, any effects occurring to the species related to the fire, identify protection measures needed (if any), and monitor populations over a 10-year period. The status of Forest Service sensitive plants is unknown within the Wallow Fire area. Little work has been done related to these species and what work has been done is dated and does not represent the current distribution and status of these species. The Wallow Fire burned through significant portions of habitat for many species of rare plants. It is unknown whether these populations survived the fire, what their response to the fire will be, and what the long-term impacts on populations and habitat for these species will be. Assessment

and monitoring of rare plant populations within the fire area is expected to answer these questions and will better inform future efforts to protect and manage these species.

Consequences of Inaction
Lack of critical data related to rare plants in this area could result in population declines or loss over time.

Cost

Contract for Year 1 = $60,000

Contract for Year 5 = $30,000

Contract for Year 10 = $30,000

Contract for Implementation of Protection Measures (Year 2) = $75,000

Total: $195,000