

Kenney Flats Fuels Reduction and Ponderosa Pine Restoration Project Environmental Assessment

Biological Assessment for Fish and Wildlife

Archuleta County
Colorado

August 4, 2004

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INTRODUCTION

The 2000 fire season was one of the most challenging in history. The magnitude of the fires is the result of two primary factors: a severe drought, accompanied by a series of storms that produced thousands of lightning strikes followed by windy conditions; and the long-term effects of almost a century of aggressively suppressing all wildfires that has led to an unnatural buildup of brush and small trees in our forests and rangelands.

On a national scale the USDA Forest Service (USFS) published a strategy to move towards more fire resistant, healthy ecosystems: *Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy* (USDA Forest Service, 2000). The Pagosa Ranger District identified the Kenney Flats Analysis Area (hereafter referred to as analysis area) as having a high potential to achieve these goals.

Purpose of this Biological Assessment

The Forest Service Manual (FSM 2672.4) provides direction to evaluate the effects of a proposed action on any species federally listed or proposed for listing under the Endangered Species Act (ESA) of 1973, as amended. Additionally, Section 7 of the ESA requires federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of threatened or endangered species, or result in the destruction or adverse modification of their critical habitats. Interagency cooperation between the USFS and the USDI Fish and Wildlife Service (USFWS) regarding proposed, threatened, or endangered species is described in Section 7 of the ESA. Federal actions that affect listed species must undergo consultation or conference with the USFWS. Definitions related to consultation and conference is given in the Endangered Species Act Consultation Handbook, Procedures for Conducting Section 7 Consultation and Conferences (USDI Fish and Wildlife Service, 1998).

An endangered species is a species listed by the USFWS because it is in danger of extinction throughout all or a significant portion of its range. A threatened species is a species that is considered by the USFWS as likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. A proposed species is a species that has been proposed by the USFWS to be listed as threatened or endangered.

This Biological Assessment (BA) evaluates the effects to federally listed species on the San Juan National Forest (SJNF) from the Kenney Flats Fuels Reduction and Ponderosa Pine Restoration Project.

The information and analysis in this BA was developed based on field reconnaissance of the analysis area, reviewing published and unpublished reports and other scientific literature, and contacts with state and federal agency resource personnel.

The landscape within and surrounding the analysis area was visited by Kelly Colfer, Principal Biologist for Western Bionomics, LLC., to determine habitat suitability for endangered, threatened, and federal candidate species. The area was visited during the period of October 10 through October 15, 2002.

CONSULTATION HISTORY

A list of threatened and endangered species for the San Juan National Forest was obtained from the USFWS on February 26, 2004, and reconfirmed on June 1, 2004 (USDI Fish and Wildlife Service, 2004). There has been no other consultation directly or indirectly related to the proposed action.

PROPOSED MANAGEMENT ACTION

Existing vegetative condition

The analysis area encompasses 14,007 acres of public land located roughly 12.5 miles south-southeast of Pagosa Springs, Colorado. Approximately 1,642 acres of private land are present with the majority consisting of ponderosa pine and Gambel oak, and grass-forb parks. Elevation ranges from approximately 6,868 to 9,200 feet. Most of the area has relatively gentle terrain with slopes less than 25%. Steeper ground, with slopes ranging from 25-60% is found in the major drainages of Spiler Canyon, Halfway Canyon, and the Blanco River Canyon.

Ponderosa pine forests dominate the relatively flat areas in the central and northwestern portion, while large stands of Gambel oak dominate the eastern side. Numerous meadows of various sizes are intermixed with the ponderosa pine and Gambel oak stands. Warm-dry mixed conifer dominated by ponderosa pine, and cool-moist mixed conifer dominated by Douglas fir are also present, occurring primarily on the steeper north and west facing slopes around Halfway and Spiler Canyons, and also on the slopes above the Blanco River. There are a few small patches of aspen in the east side, and a small stand dominated by Rocky Mountain juniper in the southern portion along U.S. Highway 84.

The shrub/Gambel oak cover type is a diverse plant association found on hills, flats, and canyon slopes at elevations ranging from about 6,868 to 9,200 feet. This type comprises 4,050 acres, or 29% of the analysis area (Table 2). Large, contiguous stands of Gambel oak dominate the eastern side of the analysis area.

Mountain grasslands consisting of various grass and forbs species are present across 1,386 acres, or 10% of the area. This cover type occurs in open parks, openings in the interior forests, and in Gambel oak dominated landscapes.

Ponderosa pine forests are present across 7,285 acres, or 52% of the analysis area. Gambel oak dominates most of the understory in ponderosa stands. The canopy base height within pine stands is generally far less than was thought to have occurred prior to Euro-American settlement. The current condition of ponderosa pine is the result of fire suppression, past timber harvest, fuelwood gathering, and livestock grazing.

Warm-dry mixed conifer, dominated by ponderosa pine, is present across 542 acres, or about 3.8%, of the area. Most of this cover type occurs on the north-facing slopes above Spiler Canyon and on the north and west slopes above the Blanco River. Cool-moist mixed conifer, dominated by Douglas fir, is present across 282 acres, or 2% of the analysis area, on the north facing slopes above Halfway Canyon.

Aspen is present across 229 acres, or 1.6%, of the analysis area. Several small stands are located in the eastern portion near the Buckles Lake Road. Smaller patches of aspen are also found as inclusions in mixed conifer and ponderosa pine forests throughout the area.

Isolated pockets dominated by riparian vegetation are found in Spiler Canyon and Halfway Canyon, and adjacent to numerous stock ponds. Cottonwoods are the dominant tree species within the Spiler and Halfway Canyons. Willows and Hawthorns are common in these canyons as well. Overall, streams within the analysis area are severely downcut and/or gullied, supporting a very narrow riparian fringe, which limits their potential as habitat for riparian dependent species. Several intermittent and ephemeral streams are located in the analysis area, including Coyote Creek, Spence Creek, Boone Creek, and Benson Creek. None of these are fish bearing streams.

Table 2. Analysis area cover types and structural stages.

Cover Type	Habitat Structural Stage								Grand Total
	1	2	3A	3B	3C	4A	4B	4C	
Grass/forb	1,386								1,386
Barren ground/Rock									14
Shrub/Gambel oak		4,050							4,050
Riparian									119
Sagebrush		9							9
Aspen			4		97		128		229
Cool-moist mixed conifer				88			194		282
Warm-dry mixed conifer				1		45	474	22	542
Pinyon-juniper							91		91
Ponderosa pine				58		3,404	2,870	953	7,285
Grand Total	1,386	4,059	4	147	97	3,449	3,757	975	14,007

Proposed Action

The purpose of the Kenney Flats Fuels Reduction and Ponderosa Pine Restoration Project is to effect an immediate change in fire behavior, to reduce rate of spread and intensity, to maintain condition classes that support desirable fire behavior and increase forest and ecosystem diversity and resilience to disturbance. The project will further the implementation of the National Fire Plan (USDA Forest Service, 2000), the Archuleta County Community Action Plan (on file at the Pagosa Ranger District Office), and the San Juan National Forest Land and Resource Management Plan (USDA Forest Service, 1992).

The proposed action involves direct manipulation of vegetation in the form of thinning trees over 24% of the analysis area (3,347 acres), prescribed fire over 54% (7,525 acres) under all three action alternatives, mowing of shrub/Gambel oak over 1% (201 acres) adjacent to private land, 3.5 miles of temporary road construction and 2.4 miles of road reconstruction. The majority of thinning treatments would occur primarily in ponderosa pine (24% or 3,309 acres) and warm-dry mixed conifer (38 acres). Prescribed fire would be implemented in ponderosa pine, warm-dry mixed conifer, aspen, Gambel oak and grass/forb cover types.

Fuels reduction activities and the ecological restoration prescriptions for the following three action alternatives are the same. Elements that change by alternative are disposal of woody material, and the timing of treatments.

For all three action alternatives, following thinning and prescribed burning, treated units will be highly variable, based on the current characteristics of the stand. However, treated stands will generally appear more open and park-like having an understory of grasses and herbaceous vegetation. No pre-settlement trees will be removed so older and larger diameter ponderosa pine will appear more visually prominent following treatment. Pre-settlement trees are those that established prior to 1880 and can be recognized by the relatively smooth, orange bark with large plates. The crowns of pre-settlement trees are often irregular and flat topped. Landings and roads will be located to avoid pre-settlement trees.

Interspersed amongst these open stands will be existing clumps of denser ponderosa pine having a range of size and age classes. These pine clumps will generally range in size from 1/20 to 3/4 acre having 2 to 40 trees. The spatial arrangement and amount of area in clumps will be variable and dependent on the existing clumpiness of individual stands.

Openings will be created and will be dispersed across approximately 7% (270 acres total) of the treated acreage. Groups will range in size from 1/4 to 2 acres.

Existing clumps of large Gambel oak (6 inches + diameter at root collar) will be maintained over the landscape and where feasible, protected during prescribed burning and thinning.

Alternative 1 – No Action

No restoration activities, other than previously planned prescribed burning, would occur under this scenario. Current activities in the landscape area would continue. These include implementation of the Pagosa Ranger District prescribed burning plan, grazing activities, dispersed recreation, camping, hunting, and firewood gathering.

The goals set forth in the National Fire Plan, Archuleta County Community Fire Action Plan, and the San Juan National Forest Land and Resource Management Plan would not be met in this alternative.

Alternative 2 – Incremental Fuels Reduction – Fuels Treated on Site

Alternative 2 would involve the mechanical treatment of 3,826 acres, 438 mowed and 3,388 thinned. Each thinning unit would be entered four times, once every five years over a 20-year period until desired stand densities, Condition Class and desired stand structures are reached. Prescribed burning would follow each thinning. The majority of thinned material would be left on site. Only incidental amounts of firewood and posts/poles would be removed via personal use permits. Since thinned material would be treated on-site, this alternative would not involve any road reconditioning, reconstruction, or temporary road construction activities.

Depending on site densities, thinning would remove from 18 to 511 trees per acre and leave a range of 14 to 46 trees per acre. This generally equates to removing 28 to 142 square feet of basal area per acre leaving residual stands ranging from 56 to 94 basal area.

Rationale: This alternative addresses the suggestion to evaluate an approach that does not include the use of commercial operations to remove the small material produced from thinning. This also reflects the concerns that no additional roads be built and that no heavy equipment be used for fuel removal. Because of the heavy fuel loading, the units need repeated entries to thin and burn safely.

Alternative 3 – Periodic Fuels Reduction – Fuels Taken off Site

Alternative 3 would mow and thin the same acres as Alternative 2. However, under this alternative the units to be thinned would be divided into four smaller areas. Every five years one of the smaller units would be thinned, and then a prescribed burn will be conducted as a follow-up. Areas closer to private land would have a higher priority for treatment. The entire treatment area would be accomplished by year 20. Treated material making up various forest products (post and poles, firewood and sawtimber) would be removed and sold via a number of personal use permits, stewardship contracts, and/or commercial sales of varying sizes.

Unlike Alternative 2, this alternative would allow for the removal of usable thinned material such as post and poles and small diameter saw timber through available contracting or permitting procedures via current accepted means such as timber permits, timber sale contracts, stewardship or service contracts. In particular, usable woody fuels, such as post and poles and small diameter saw timber would be removed from the site. Areas to be thinned would be entered at one time, as the removal of material would allow for prescribed burning to be conducted safely.

This alternative would involve various road reconditioning, reconstruction and temporary road construction activities in order to provide removal of wood products while meeting Forest Plan Standards and Guidelines for water and soil resource protection. No new permanent roads would be constructed. The majority of roadwork would be accomplished during the first five-year treatment period.

Thinned material will remain on site until prescribed burned for units 15, 16, and 17 totaling 208 acres. No road reconditioning, reconstruction or temporary road construction activities will take place within these units.

Depending on site densities, thinning would remove from 15 to 499 trees per acre and leave a range of 16 to 63 trees per acre. This generally equates to removing 22 to 129 basal area leaving residual stands ranging from 56 to 94 basal area.

Rationale: Provides for restoration and fuels reduction treatments in a systematic approach across the landscape in 20 years. Requires only one entry per acre to accomplish. Sensitive to limits of equipment available, yearly treated acres, operationally feasible, and recovery of some activity costs.

Alternative 4 – Prompt Fuels Reduction – Fuels Taken off Site

Alternative 4 is designed to achieve the project objectives in the most expeditious timeframe and thins and mows the same acres as the other action alternatives. As in Alternative 3, this allows for the removal of usable thinned material. This alternative would mechanically treat all acreage at the end of 5 years, with follow-up prescribed burning as soon as feasible.

Alternative 4 would result in a high level of activity in years 1 through 5, where thinning activities would occur, in conjunction with prescribed fire. Prescribed fire would be used following removal of usable woody fuel to maintain a restored stand condition. Usable treated material making up various forest products (post and poles, firewood and small diameter saw timber) would be removed and sold via a number of personal use permits, stewardship contracts, and commercial sales of varying sizes.

This alternative would involve various road reconditioning, reconstruction and temporary road construction activities in order to provide safe removal of wood products while meeting Forest Plan standard and guidelines for water and soil resource protection. No new permanent roads would be constructed.

Depending on site densities, treatment would remove from 11 to 499 trees per acre and leaving a range of 16 to 63 trees per acre. This generally equates to removing 7 to 128 basal area leaving residual stands ranging from 58 to 95 basal area.

Rationale: This alternative represents the most expeditious means to accomplish fuels reduction and restoration objectives. Periods of mechanical disturbance are limited. Provides the quickest change in Condition Classes over the largest area and recovers some activity costs.

SPECIES CONSIDERED, AND DISMISSED FROM FURTHER EVALUATION

The February 26, 2004 USFWS federally listed species list for the SJNF contains three birds, one mammal, four fish, and one invertebrate (Table 1). Table 1 describes the listing status for each species, brief habitat descriptions, habitat presence in the analysis area, probability of occurrence in the analysis area, and whether the species is affected by the proposed action. Habitat descriptions were taken from Hammerson (1999), Andrews and Righter (1992), Fitzgerald et al. (1994), and Page and Burr (1991).

As mentioned in Table 1, several of these species utilize habitats that do not occur in the analysis area and/or will not be affected by the proposed action. There will be no effect on the bald eagle, Mexican spotted owl, southwestern willow flycatcher, bonytail, Colorado pikeminnow, humpback chub, razorback sucker, or Uncompahgre fritillary butterfly. These species are dismissed from further evaluation. Additionally, the USFWS lists the yellow-billed cuckoo and boreal toad as candidates for federal listing under the ESA. There will be no impact on the yellow-billed cuckoo or boreal toad as there is no habitat present for either species in the analysis area. The rationale for these no effect and no impact determinations is included in Table 1.

Table 1. Federally listed fish and wildlife species and federal candidates for the San Juan National Forest (USDI Fish and Wildlife Service, 2004).

Species	Status	Habitat	Habitat Present In the Analysis Area, and Use Period	Probability of Occurrence in the Analysis Area (based on habitat suitability, or known or historic observations/occurrences)	Species Affected
Amphibians (1)					
Boreal toad (<i>Bufo boreas boreas</i>)	Federal Candidate	Damp conditions in the vicinity of marshes, wet meadows, streams, beaver ponds, glacial kettle ponds, and lakes interspersed in subalpine forest (lodgepole pine,	No	None	No, there is no habitat present in the analysis area for boreal toads. The proposed action will have no impact on the boreal toad.

		Engelmann spruce, subalpine fir, and aspen). Sometimes found where ponderosa pine is present. Elevational range is mainly 8,500 ft. to 11,500 ft. with higher and lower occurrences in some areas.			No further discussion required.
Birds (5)					
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Threatened	Reservoirs and rivers. In winter, may also occur locally in semideserts and grasslands, especially near prairie dog towns.	No	None - Low, bald eagles are primarily fall and winter residents on the SJNF. There are no nests in the analysis area or are there any water sources containing fish or prairie dog colonies that would provide foraging habitat. Eagles may pass through the area in route to suitable habitat locations.	No, there is no habitat present in the analysis area for bald eagles. The proposed action will have no effect on the bald eagle. No further discussion required.
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	Threatened	Mixed conifer habitat (Douglas-fir, ponderosa pine, white fir) located in steep rock walled canyons. All known Mexican spotted owl pairs in Colorado use canyon habitats for nesting.	No	None	No, there is no habitat present in the analysis area for Mexican spotted owls. The proposed action will have no effect on the Mexican spotted owl. No further discussion required.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Endangered	Willow riparian with patch size 30 ft. x 30 ft. x 5 ft. tall, up to ¼ acre or larger.	No	None	No, there is no habitat present in the analysis area for southwestern willow flycatchers. The proposed action will have no effect on the southwestern willow flycatcher. No further discussion required.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Federal Candidate	Low elevation willow riparian and cottonwood.	No	None	No, there is no habitat present in the analysis area for yellow-billed cuckoos. The proposed action will have no impact on the yellow-billed cuckoo. No further discussion required.
Fish (4)					
Bonytail (<i>Gila elegans</i>)	Endangered	Colorado River; affected by water depletions from the Colorado River Basin.	No	None	No, the proposed action occurs in the San Juan River Basin. There will be no effect on the

					bonytail. No further discussion required.
Colorado pikeminnow (<i>Ptychocheilus lucius</i>)	Endangered	Lower San Juan and Colorado Rivers; affected by water depletions from both basins.	No	None	No, there will be no water depletion activities from the San Juan River Basin. There will be no effect on the Colorado pikeminnow. No further discussion required.
Humpback chub (<i>Gila cypha</i>)	Endangered	Colorado River; affected by water depletions from the Colorado River Basin.	No	None	No, the proposed action occurs in the San Juan River Basin. There will be no effect on the humpback chub. No further discussion required.
Razorback sucker (<i>Xyrauchen texanus</i>)	Endangered	Lower San Juan and Colorado Rivers; affected by water depletions from both basins.	No	None	No, there will be no water depletion activities from the San Juan River Basin. There will be no effect on the razorback sucker. No further discussion required.
Insects (1)					
Uncompahgre fritillary butterfly (<i>Boloria acrocneuma</i>)	Endangered	Snow willow located in alpine habitat.	No	None	No, there is no habitat present in the analysis area for Uncompahgre fritillary butterflies. The proposed action will have no effect on the Uncompahgre fritillary butterfly. No further discussion required.
Mammals (1)					
Canada lynx (<i>Lynx canadensis</i>)	Threatened	Spruce-fir, cool-moist mixed conifer, high elevation aspen mixed with spruce-fir or cool-moist mixed conifer, and willow riparian adjacent to the above habitats.	Yes	Low	No, see effects of the proposed action on species evaluated.

EVALUATED SPECIES INFORMATION

The analysis area was surveyed for the presence of suitable lynx habitat during the period from October 10 through October 15, 2002. The survey was conducted by Kelly Colfer, Principal Biologist for Western Bionomics, LLC. Suitable lynx habitat exists for Canada lynx in the upper northeast corner of the analysis area. This portion of the analysis area is located in two Lynx Analysis Units (LAUs), Rio Blanco LAU and Navajo River LAU. Suitable lynx habitat within the LAUs consists of spruce-fir, cool-moist mixed conifer, high elevation aspen mixed with spruce-fir or cool-moist mixed conifer, and willow riparian adjacent to these habitats. A complete description of Canada lynx life history, habitat requirements, status and distribution, and risk factors is on file at the Pagosa Ranger District Office (USDA Forest Service, 2004).

ENVIRONMENTAL BASELINE FOR SPECIES EVALUATED

Suitable lynx habitat exists on NFS lands in the northeast corner of the analysis area in portions of the Rio Blanco and Navajo River LAUs. There have been no activities that have affected suitable lynx habitat on NFS lands within the analysis area. Private land present in the analysis area does not contain suitable or unsuitable lynx habitat, nor is it within an LAU.

EFFECTS OF THE PROPOSED ACTION ON SPECIES EVALUATED

Direct and indirect effects

Suitable lynx habitat within the analysis area will not be affected by activities associated with the proposed action.

Cumulative effects

As defined by the ESA, cumulative effects are those effects of future state or private activities that are reasonably certain to occur. Future federal actions that have been through consultation are included in the environmental baseline; other future federal actions will be consulted on separately, and therefore need not be considered in cumulative effects analysis. Cumulative effects as defined by NEPA include the incremental effects of past, present, and reasonably foreseeable related future actions without regard to land ownership boundaries.

The proposed action will not affect suitable lynx habitat in the analysis area. There is no lynx habitat present on private land within the analysis area. The proposed action will not result in cumulative effects to the Canada lynx.

EFFECTS DETERMINATION

A requirement of the BA is to state whether a proposed action will affect a listed species and its habitat. Based on the analysis conducted and disclosed in this BA, there is no suitable habitat in the analysis area for the bald eagle, Mexican spotted owl, southwest willow flycatcher, bonytail, Colorado pikeminnow, humpback chub, razorback sucker, or Uncompahgre fritillary butterfly. Since suitable habitat is not present in the analysis area, or there are no project activities that will affect these species, the proposed action will have no effect to these species.

The proposed action will have no impact on the yellow-billed cuckoo or boreal toad as there is no habitat present for either species in the analysis area.

The proposed action will not affect suitable lynx habitat in the analysis area, or the Rio Blanco and Navajo River LAUs. There will be no effect to Canada lynx or lynx habitat.

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