TECHNICAL SPECIALIST REPORT – BURNED AREA EMERGENCY RESPONSE

RESOURCE: ***Wildlife***
FIRE NAME: *Hayden Pass*
MONTH/YEAR: *7/2016*
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I. POTENTIAL VALUES AT RISK

Potential *values at risk* identified and addressed in this report include wildlife species federally listed as *threatened*, located within and/or in proximity to the Hayden Pass Fire burned area. Species at risk include the federally listed Mexican spotted owl (*Strix occidentalis lucida*) and Canada lynx (*Lynx canadensis*). The primary threat to these species is the potential degradation or loss of residual habitat that did not sustain detrimental impacts during this wildfire event.

II. RESOURCE CONDITION ASSESSMENT

A. RESOURCE SETTING

Mexican Spotted Owl

Mexican spotted owls nest, roost, forage, and disperse in a diverse array of biotic communities. Spotted owl can be found in heavily forested areas as well as in rocky canyons with sparse or no forest cover (USFWS 2012). In both forest and canyon environments, spotted owls tend to select roosting and nesting sites that provide thermal protection. In the case of forested sites, large trees, dense canopy cover, and first or second order tributaries all act to create a cooler microclimate during warm ambient temperatures of the breeding season (USFWS 2012).

Mexican spotted owls consume a variety of prey throughout their range. Spotted owls commonly eat small- and medium-sized rodents such as woodrats, mice, and voles, but they also consume bats, birds, reptiles, and arthropods. Spotted owls utilize a wider variety of cover types for foraging than for roosting or nesting, including: managed and unmanaged forests, piñon-juniper woodlands, mixed-conifer and ponderosa pine forests, on cliff faces and terraces between cliffs, and along riparian zones (USFWS 2012).

Suitable breeding habitat occurs throughout the burn in the mid-elevation range (*see map in Appendix A.*) Forest types present contain steep terrain interspersed with riparian forest of quaking aspen, narrowleaf cottonwood, and willow spp., and sapling-pole and mature stands consisting of white- fir, Douglas-fir, ponderosa pine, blue spruce, Rocky Mountain juniper, piñon pine, Gambel oak, and mountain mahogany.

Breeding by this species has never been confirmed within the Salida Ranger District. No Spotted owl Protected Activity Centers (i.e. known or historical nest and/or roost sites) have been established. This species has not been detected during surveys conducted in 2016, 2014, 2011, 2006 in 1994 around Turret, CO located approximately 30 miles north of the Hayden Pass Fire.

Canada lynx

The lynx is a highly specialized predator adapted to prey upon snowshoe hare. Lynx inhabit coniferous forests in the spruce-fir zone, that experience cold, snowy winters that provide a snowshoe hare prey base. In the Southern Rockies, lynx habitat generally occurs between 8,000 – 12,000 feet in elevation, with forest cover dominated by spruce-fir, lodgepole pine and aspen-conifer mix. Low-elevation forests and forests on dry sites, such as ponderosa pine and climax lodgepole pine, do not support snowshoe hares and are not lynx habitat (*Southern Rockies Lynx Amendment Record of Decision* 2008).

The Hayden Pass Fire occurred in North Sangres Lynx Analysis Unit (LAU) and Taylor LAU's (*see map in Appendix B*).

B. FINDINGS OF THE ON-THE-GROUND SURVEY

The fire was a total of approximately 16,520 acres on July 25, 2016 (time of this report) and varied in intensity creating a mosaic across the landscape. Field evaluations of habitat conditions were conducting from July 22-24. Sites visited that were pertinent to the species of concern included Hayden Creek, Mosher Creek, Oak Creek, Big Cottonwood Creek, and Wolf Creek. A helicopter flight was taken to assess the sub-alpine forest and alpine along the entire burn, search for rocky canyon habitat suitable for Mexican spotted owl, determine erosion potential of Hayden Creek and witness the effects of fire on the scrub oak community. The fire has created a mosaic across the landscape and will diversify forest age classes into the future. Neighboring sub-alpine forest has experienced rapid die off due to the spruce bud worm. Steep terrain with no significant basins or existing water was found along timberline. Rocky canyon habitat within the burn was relatively lacking throughout.

1. RESOURCE CONDITION RESULTING FROM THE FIRE

Mexican Spotted Owl

The following table is a breakdown of the burn severity within suitable habitat:

Type of MSO Habitat	Burn Severity High	Burn Severity Moderate	Burn Severity Low	Unburned	Total Acres Burned
Forested foraging/non-breeding habitat	456	1676	693	334	2824
Forested nest/roost habitat	447	1264	444	362	2155
Riparian recovery habitat	60	46	42	48	148
Rocky Canyon Habitat	21	119	80	42	216

An estimated 1,711 acres of suitable spotted owl breeding habitat (nest/roost) within the Hayden Pass Fire was burned during this wildfire event at either high or moderate intensity resulting in overstory mortality. These sites were located throughout the burn in pockets of intense fire. Habitat for the MSO was located throughout the mid-elevation forest of the burn and no particular canyons or drainages contained the majority of the habitat. The riparian areas along Wolf and Hayden Creeks contain MSO nest/roosting habitat which was moderately to severely burned.

Photo 1. *Mexican Spotted Owl nesting/roosting habitat along Wolf Creek*

Approximately 82% of the suitable MSO habitat in the burn area was located in the Sangre De Cristo Wilderness boundary and little to no suppression activities were conducted, except for bucket drops.

Canada lynx

The following table is a breakdown of the burn severity within suitable lynx habitat:

Lynx Habitat Type	High and Moderate Burn Severity	Low Severity	Unburned	Total Acres
Primary	3355	538	421	3890
Secondary	1952	726	4439	2674

Within the Hayden Pass Fire, approximately 5,307 acres of suitable lynx habitat was burned either moderately or severely resulting in transition to unsuitable lynx habitat. The majority of the lynx habitat identified was located in the subalpine forest of the South Prong of Hayden Creek and Little Cottonwood Creek below Wulston Baldy (Mountain). These areas burned with high to moderate intensity and the majority of the overstory trees were burned as shown in the photos below.

Photo 2. *Upper South Prong of Hayden Creek along burn perimeter*

Photo 3. *Primary lynx habitat burned near Little Cottonwood along Lake Creek*

Approximately 7,432 acres of suitable lynx habitat was burned to some extent: 6,759 acres in North Sangres LAU, 664 acres in Taylor LAU. Approximately 4812 acres within the Sangre De Cristo LAU is now unsuitable and 494 acres of the Taylor LAU.

Approximately 89% of the mapped lynx habitat within the burn area was located in the Sangre De Cristo Wilderness. Little to no fire suppression activities occurred within lynx habitat due to Wilderness Policy and terrain with the exception of bucket drops.

2. CONSEQUENCES OF THE FIRE ON THE VALUES AT RISK

Mexican Spotted Owl

The Hayden Creek Fire resulted in a reduction primarily in nesting/roosting habitat and foraging habitat of Mexican spotted owl (MSO) within the area. Approximately 5,343 acres of habitat was burned, 4,089 acres in high or moderate severity. No known breeding occurrences have been documented in the wildfire area and no critical habitat was lost. Likely areas of high and moderate burn intensity will not provide nesting/roosting habitat (large diameter trees) in decades. Foraging sites may recover faster if located near existing live trees and shrubs, along riparian areas, and lower intensity burned pockets.

The main drainages of concern which contain MSO habitat are Wolf Creek and Hayden Creek. Likely sediment deposition and scouring of the stream may degrade or eliminate the portions of the unburned riparian vegetation within these canyons, which function as sources of fruit and seed for prey species. This residual plant cover is an important component of the mosaic vegetation communities associated with spotted owl breeding habitat.

Canada lynx

High intensity fire within suitable lynx habitat will result in unsuitable habitat until the forest begins to regenerate. Approximately 5,300 acres of suitable habitat was burned with high or moderate intensity resulting in unsuitable habitat. The natural regeneration period could be within the range of 20-100+ years before early succession, spruce and lodgepole, white-fir and aspen become available (Rudney 2016) for foraging snow shoe hare and red squirrels, prey species of the Canada lynx. Canada lynx are influenced more by the presence of snowshoe hare than by forest structure. Likely the burned area will have a lack of lynx until early-succession forest processes have begun. At that point, the fire could provide an abundance of snowshoe and therefore attract lynx back into the area (Fisher, Wilkinson, 2005).

Recovery of denning habitat will take longer and is most common in late successional sub-alpine forest. Fallen fire burned trees could provide denning habitat as forests recover.

After-fire processes such as scouring of streams and erosion of hillside soils are not likely to significantly slow lynx habitat recovery (natural regeneration of the sub-alpine forest) to a measureable extent.

III. EMERGENCY DETERMINATION

Mexican spotted owl: Nesting and roosting MSO could be utilizing pockets of habitat within the Hayden Pass Fire which were unburned. Foraging along riparian areas for mammals, birds and reptiles could sustain individuals. The risk assessment derived a likely probability of damage with potential loss of riparian habitat caused by streambank instability, scouring and subsequent deposition which could reduce the quantity of prey availability along these creeks into the future. The assessment derived moderate consequences due to erosion impacts in riparian areas near pockets of unburned nesting/roosting habitat, resulting in an intermediate risk to Mexican spotted owl, federally listed as *threatened*, located within and/or in proximity to the Hayden Pass Fire burned area.

Canada lynx: The Hayden Pass Fire transformed approximately 5,300 acres of suitable lynx habitat into unsuitable. After-fire natural processes in these areas are not likely to further reduce the quality of the habitat. Natural forest regeneration will eventually result in transitioning back to suitable lynx habitat. The risk assessment derived a unlikely probability of damage with minor consequences resulting in a low risk to Canada lynx, federally listed as *threatened*, located within and/or in proximity to the Hayden Pass Fire burned area.

Emergency consultation with the USDI Fish and Wildlife Service began on July 18, 2016 initially. Continued consultation is occurring between the US Forest Service Fisheries Biologist and Wildlife Biologist assigned to the BAER Team for the Hayden Pass Fire for the Mexican spotted owl, Canada lynx and Cutthroat trout population in Hayden Creek.

IV. TREATMENTS TO MITIGATE THE EMERGENCY

No site-specific treatments are proposed for mitigating an emergency to wildlife species or habitat.

V. DISCUSSION/SUMMARY/RECOMMENDATIONS

None.

VI. REFERENCES

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VII. APPENDICES

A. Map – Mexican spotted owl Nest/Roost habitat within Hayden Pass Fire
B. Map – Canada lynx habitat within Hayden Pass Fire