Chapter 5—Noble

The Noble Fire encompasses 6,352 acres within Idaho County, Idaho. Land cover consists of forestland (96%), shrub/scrub (3%), and woody wetlands (1%). Ownership is predominately federal (97%), followed by private (3%). The majority of the fire area received a low burn severity classification (36%, 2,286 acres), with 23% moderate and 9% high. Precipitation ranges from 30 to 41 inches while elevations range from 5,280 to 6,650 feet.

USFS identified an additional four structures as at risk for post-fire flooding damages. USGS considered 5,612 acres, and 29 miles of stream at a low risk for post-fire debris flow hazard risk. According to the USFS GeoWEPP model, 506 acres are considered high erosion risk (>10 tons/acre), however 4 acres are located on private lands. There are 10.4 miles of roads within the burned area. The majority of these occur on private ownership (46%). Of these roads, 0 miles were identified as having a road erosion hazard.

USGS identifies 14.6 miles of streams, with 13.9 miles considered perennial and a stream density of 1.4 miles per square mile of burned area. There are five water systems considered to be a low risk for post-fire debris flows or runoff events. An analysis of the IDWR data shows that this water system is a groundwater source. The water systems are used for domestic and agricultural purposes.

Over 89 acres of private forestlands were damaged with the majority of these occurring on slopes greater than 20%. NRCS recommends 33 acres of private lands for reforestation. IDFG identified 33 acres of burned area as bird nesting habitat needing 1 to 3 trees per acre to provide nesting habitat for birds.

Hazard trees were not inventoried and no specific geographic location is identified for tree removal. However, future risks as trees decompose may pose risks to homes and roads. Continued monitoring is recommended and identified trees removed for the next three to five years.

The following areas were assessed but no concerns or issues were found on private lands: Burn Scar Flash Flooding, Culverts/Bridges at Risk, Fish Habitat at Risk, Farm Infrastructure, Fire Suppression Restoration Needs, FS BAER Analysis and Road Erosion Hazard.

The following assessment areas are in progress and no data is available at the time of this publication: Weed Invasion Analysis.

The following assessment areas were not evaluated: Hazard Trees, NRCS EWP Analysis, and Salvage.

Key Findings:

- 9% of burned area is considered high burn severity, while 69% is considered low or unburned.
- 506 acres are considered high erosion risk (>10 tons/acre). These acres are considered a moderate environmental risk for water quality.
- Four values were identified as at risk in the FS BAER Analysis, however, none apply to private lands.
- 96% of the burned area is forestland.
- 3% of the burned area is privately owned.
- 46% of the burned area is located on >20% slope.
- 33 acres of private forestlands were identified for reforestation treatment.
- 4 structures were identified as at risk of post-fire flooding. These structures are considered a public safety risk.
- 112 acres of private forestlands were identified for nesting bird habitat protection.
- 3% of area is privately owned (176 acres).
Prioritized Actions

The Idaho Soil and Water Conservation District coordinated a meeting with representatives from Idaho County, the Idaho Soil and Water Conservation Commission, and the Idaho Department of Lands to review the assessment findings and prioritize actions. This group did not identify any immediate concerns or actions needing addressed. The group identified the following actions:

1. Weed control through Idaho County. Some areas have already been reseeded.
2. Tree planting in areas identified for reforestation – 89 acres or private lands.
Burn Scar Flash Flooding Analysis

The National Weather Service (NWS) conducts flash flooding and debris flow risk analysis in burn scars.

Locations downhill and downstream from burned areas are very susceptible to flash flooding and debris flows, especially near steep terrain. Rainfall that would normally be absorbed will run off extremely quickly after wildfire, as burned soil can be as water repellent as pavement. As a result much less rainfall is required to produce a flash flood.

No increased flash flooding or debris flow risk areas were identified by the NWS for this fire area.
Burn Severity Characterization

Description: The burn severity map is developed from remote sensing (Burned Area Reflectance Classification (BARC)) derived data layer of post-fire vegetation condition and validated and adjusted during field surveys. The maps show the burn severity of soils and watersheds by categories of unburned, very low, low, moderate, and high. These ratings indicate the level of post-fire conditions for the soil and ground surface that is likely to affect water infiltration, runoff, and soil erosion.

Culverts/Bridges at Risk

No culverts or bridges were identified as at risk for flooding or debris flow damages.
Debris Flow – Basin Hazard

Legend
- Roads
- Idaho Streams
- Noble Fire Boundary
- Low (5,612 AC)

25 Year Debris Flow Basin Hazard, Noble Fire
Source: Preliminary Hazard Assessment by USGS
Map Generated by Cody Dawes, Nez Perce Soil and Water Conservation District. January 2016
Debris Flow – Segment Hazard

Legend

- Low (29 mi.)
- Roads
- Idaho Streams
- Noble Fire Boundary

25 Year Debris Flow Segment Hazard, Noble Fire
Source: Preliminary Hazard Assessment by USGS
Map Generated by Cody Dawes, Nez Perce Soil and Water Conservation District. January 2016
Erosion Hazard

Legend

GeoWEPP Hillslope Erosion Potential

- 0 to 1 tons/acre (2,311 Acres)
- 1 to 10 tons/acre (1,633 Acres)
- 10 to 50 tons/acre (506 Acres)

Source: Potential hillslope erosion as estimated from the GeoWEPP model. GeoWEPP is a geo-spatial interface for WEPP (Water Erosion Prediction Project). Model Runs completed by Mary Miller, Michigan Tech Research Institute and USFS Rocky Mountain Research Station, Moscow, Idaho.

Map Generated by Nikki Lane, Nez Perce Soil and Water Conservation District, June 2016
Farm Infrastructure Damages

An analysis was completed and no infrastructure damages were identified for the Noble Fire.
Fire Suppression Restoration Needs

No analysis was completed for the Noble Fire.
Fish Habitat at Risk

Legend
- Idaho Streams
- High (542 AC)
- Low (2,286 AC)
- Moderate (1,436 AC)
- Unburned (2,087 AC)
- NobleFireBoundary

Burn Severity, Noble Fire

Source: Imagery provided by BLM, field verification completed by USFS. September 2015.
Map Generated by Cody Dawes, Nez Perce Soil and Water Conservation District. January 2016
**Flooding Hazard**

No flooding hazard analysis was completed and is not planned for the Noble Fire.
FS BAER Analysis

The Noble fire was analyzed as part of the Red River Complex fire.

Four values were identified as at risk on Forest Service lands.

- **Infrastructure – Roads: Risk = High**
  Roads were ranked high due to the risk of post-fire erosion and elevated peak flows on the slopes, four stream crossings and 2 cross-drain pipes are threatened by the fire.

- **Infrastructure – Trails: Risk = Very High**
  Trails were ranked very high due to approximately 42 miles of trails being affected by the fire.

- **Water Quality: Risk = Very High**
  Water quality was ranked high due to the risk of erosion on the steep slopes and roads increasing sediment in the stream.

- **Native Vegetation Communities: Risk = High**
  Native vegetation was ranked very high due to rapid expansion of noxious weeds within the burn area.

The following activities are planned to occur one to two years following the fire:

- 250 acres invasive weed treatment ($17,750)
- 45 miles trail and 28 miles road treatment ($75,036)
Hazard Trees

No physical inventory was completed to identify the geographic locations of hazard trees. The potential for hazard trees to pose a risk to public safety is moderate to high depending upon the stability of the near proximity to homes and roads and climate conditions over the next several years. Burned areas with trees adjacent to homes and roads will need continuous monitoring over the next three to five years and any trees posing a risk removed. Following the fire, many trees adjacent to homes were removed the Fall of 2015. Trees identified as hazards on USFS and IDL lands were removed.

The Nez Perce – Clearwater National Forests Road, Administrative and Recreation Site Maintenance Project (Decision and FONSI 8/20/2016) proposed hazard tree removal along 133 miles of road and within nine administrative and recreation sites on USFS lands. The purpose of the project is to provide safe and unimpeded access along National Forest System roads, and around administrative facilities and recreational sites.

On Forest Service Lands, 3.0 miles of road and one administrative/recreation site would be treated within the Noble Fire. The Forest Service proposes to fell structurally weakened trees, dead trees, and those likely to die that have the potential to impact forest users or employees traveling on the road prism. Additionally trees that are determined to have the ability to negatively impact the road, administrative, or recreation site, or users of those roads/sites would be felled. Generally, hazard trees meeting the mortality guidelines within one tree length of ht road or site would be felled.
Land Cover Characterization

Legend
- Idaho Streams
- Noble Roads
- Noble Fire Boundary

Land Cover
- Emergent Herbaceous Wetlands (8 AC)
- Evergreen Forest (6,090 AC)
- Grassland/Herbaceous (5 AC)
- Shrub/Scrub (209 AC)
- Woody Wetland (39 AC)

Description: Land Cover classes include: Developed, Open Space - Mix of constructed materials, but mostly lawn grasses. Impervious surfaces < 20% of total cover. Deciduous Forest - >20% deciduous trees. Evergreen Forest - >20% evergreen trees. Mixed Forest - >20% trees with mix of deciduous and evergreen trees. Shrub/Scrub - >20% shrub vegetation. Grassland/Herbaceous - >80% grass/other herbaceous vegetation. Pasture/Hay - Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Cultivated Crops - Areas used for the production of annual crops and/or being annually tilled. Woody Wetlands - Soils that are periodically saturated or covered with water and contain >20% forest or shrubland vegetation. Emergent Herbaceous Wetlands - Soils that are periodically saturated or covered with water and vegetation is >80% herbaceous.

Map generated by Cody Dawes, Nez Perce Soil and Water Conservation District.
Land Ownership Characterization

Legend
- Idaho Streams
- Noble Fire Boundary
- Ownership
  - Federal (6,176 AC)
  - Private (176 AC)

Description: Land ownership classes include BLM = Bureau of Land Management, Federal agency; IR = Indian Reservation, designated as tribal ownership; Private = non-governmental ownership; State = State of Idaho; USFS = United States Forest Service, federal agency; Federal = federal agency.

NRCS EWP Analysis

A damage survey report and analysis for the NRCS Emergency Watershed Protection Program was not completed for this fire.
Reforestation Needs

Legend
- Roads
- Idaho Streams
- Noble Fire Boundary
- Forest (89 AC)

Forested Acres on Private Land, Noble Fire

Source: BLM ownership layer, National Land Cover Database

Map Generated by Cody Dawes, Nez Perce Soil and Water Conservation District, January 2016
Road Characterization

Legend
- Dirt (7.4 mi)
- Gravel (2.9 mi)
- Streams
- Noble Fire Boundary

Roads by Surface, Noble Fire
Source: Idaho County
Map Generated by Cody Dawes, Nez Perce Soil and Water Conservation District. March 2016
Road Erosion Hazard

Over 10 miles of road are located within the burn area. No road erosion hazards were identified.
Salvage Analysis

No analysis was completed for the Noble Fire.
Slope Characterization

Legend
- Idaho Streams
- Noble Roads
- Noble Fire Boundary

Slope Category
- 0 - 20% (3,415 AC)
- 20 - 40% (2,634 AC)
- >40% (303 AC)

Description: Slopes were identified using Digital Elevation Model data. Slopes were divided into 3 categories 0–20%, 21–40%, and >40%.


Map generated by Cody Dawes, Nez Perce Soil and Water Conservation District.
Stream Characterization

Legend
- Noble Fire Boundary
- Noble Streams
  - Intermittent (0.7 mi)
  - Perennial (13.9 mi)

Description: Stream segments are classified by perennial or intermittent. Perennial segments have water flowing throughout the calendar year. Intermittent segments contain water flow on a seasonal basis.

Structures at Risk

Description: A review of structures at risk of damage from post fire hydrologic effects was done using Google Earth and the burned area severity maps. Structures that were located in the floodplain or alluvial fans (generally at the base of steep draws) were located and mapped. Many of these properties have an existing risk of flooding and debris torrents that have been elevated to varying degrees due to the fires of 2015 and are represented by yellow dots.

Water Systems at Risk

Legend
- BIG MALLARD CREEK (2)
- GROUSE CREEK (1)
- SPRING (2)
- Roads
- Idaho Streams
- NobleFireBoundary

Water Systems At Risk, Noble Fire

Source: Idaho Department of Water Resources; Licensed or Decreed Points of Diversion GIS layer. 2015. (http://www.idwr.idaho.gov/GeographicInfo/GISdata/water_rights.htm)

Map Generated by Cody Dawes, Nez Perce Soil and Water Conservation District. January 2016
Weed Invasion Analysis

The Idaho County Weed Department identified 60 acres of weeds needing monitoring and potential treatment. The majority of the weeds are considered 3H in priority.

Data Description: Weed treatment needs by management priority group. Categories are 1 to 5, with 1 being the highest priority and 5 the lowest priority.

Wildlife Habitat at Risk