USDA

Decision Memo
Storrie Fire Aquatic Organism Passage Project

USDA Forest Service
Lassen National Forest, Almanor Ranger District
Plumas County, California

Background

The Storrie Fire ignited near the town of Storrie, Plumas County, CA on August 17, 2000. The fire burned over 55,000 acres before being fully contained on September 27, 2000. Approximately 27,000 acres of Lassen National Forest lands were burned. Vegetation loss and exposure of bare mineral soil promoted increased sediment delivery to streams within and downstream of the Storrie Fire burn area. The increase in sediment delivery has degraded aquatic habitat for native fish species including rainbow trout (*Oncorhynchus mykiss*). The majority of streams affected by the Storrie Fire are located within the Yellow Creek 5th-field watershed, and all proposed project sites drain into Yellow Creek.

The Sierra Nevada Forest Plan Amendment Record of Decision (Sierra Nevada ROD) (USDA Forest Service 2004) includes watershed connectivity strategies with the following riparian conservation objectives (RCOs) and management direction pertaining to stream crossings:

- maintain or restore hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species (riparian conservation objective 2, page 33)
- identify and implement restoration actions to maintain, restore, or enhance habitat for riparian and aquatic species (riparian conservation objective 6, page 34),
- design new stream crossings and replacement stream crossings for at least the 100-year flood, including bedload and debris (appendix A part D, page 59), and
- ensure that culverts and other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species (appendix A, page 63).

Existing conditions at the three described road-stream crossings are not in line with management direction outlined in the Sierra Nevada ROD (2004). Culverts currently installed at the three road-stream crossing sites do not allow for aquatic organisms to move freely between habitats upstream and downstream of the crossing structures. There are approximately 0.8 miles of perennial aquatic habitat upstream of the Water Creek crossing, 1.2 miles of perennial aquatic habitat upstream of the Miller Ravine crossing, and 0.5 miles of perennial aquatic habitat upstream of the Rock Creek crossing (see figure 1 in attachment). Existing culverts at each site are undersized for their respective streams, and contribute to gradually degrading aquatic and riparian conditions downstream of the crossing structures via channel incision and bank erosion. In addition, the existing culverts at each site are considered incapable of successfully passing a 100-year storm design flow. Aquatic habitats downstream of the crossings are vulnerable to catastrophic degradation if the existing road-stream crossing structures failed to pass a 100-year storm flow.

Purpose and Need

There is a need to remove and replace the existing road-stream crossing structures with structures that allow for free passage of aquatic species upstream and downstream of the crossings. The new structures need to be capable of passing water and debris at the 100 year storm design flow, and designed to reduce stream channel incision and bank erosion downstream of the crossings. There is also a need to continue to provide water drafting sites at the Rock Creek and Water Creek crossings.

Proposed Action

Remove and replace the existing culverts at the crossings of National Forest System roads 26N08/Water Creek, 26N35/Rock Creek, and 26N08/Miller Ravine with structures that permit free passage of aquatic organisms above and below the road-stream crossings and are capable of passing water and debris at the 100 year storm design flow. Crossings are designed to reduce channel incision and bank erosion rates downstream of the structures. Integrated design features are elements of the project design that would be applied in the areas impacted by the proposed action (see attachment 1). These features were developed to reduce or avoid adverse environmental effects of the proposed action on forest resources. Field surveys determined specifications needed for each new road-stream crossing structure.

The new crossing design at the Rock Creek site would maintain the existing water drafting site and access for continued use following project implementation, and would be designed to meet guidelines set forth for best management practices at water drafting sites (best management practice 2.5; USDA Forest Service 2011).

The new crossing design at the Water Creek site would continue to provide a water drafting site. The water drafting site at Water Creek would be designed following the guidelines established under best management practice 2.5 – Water Source Development and Utilization (USDA Forest Service 2011).

Detours during the replacement of the culverts would be necessary. The length of time a detour would be in place is determined by many factors including the structure type, other work in the area, weather, site conditions, and the size of the construction crew. Based on past experience, box culverts generally take 3-5 weeks and metal culverts 2-4 weeks. Project implementation would begin in summer 2016 and would be complete by fall 2016. Roads closed to through traffic as a result of project implementation would be signed with alternate routes for accessing Forest lands and trailheads potentially impacted by temporary road closures. Closures would be coordinated to the extent practicable to minimize impacts to commercial operations, e.g. timber harvest.

Preliminary crossing designs resulting from field surveys conducted in June 2015 for each of the three aquatic organism passage sites are attached as appendix A. These designs may be slightly modified following further design and modeling analysis, but project area footprints would remain unchanged.

Standards and guidelines for the Butt Creek Management Area (management area 37) include protecting fish habitat for resident fish of the Yellow Creek drainage (Land and Resource Management Plan Ch. 4, Sec. G, p. 4-231, B, FI #1). Actions taken at the three road-stream crossings would be designed to meet this standard and guideline. In addition, crossing design

would take into account recreation-specific standards and guidelines as described in the Lassen National Forest Land and Resource Management Plan for the recreation opportunity spectrum and visual quality objectives prescribed to the three road-stream crossing locations (attachment 1).

Specifically, the replacement structures to be installed are as follows for Miller Ravine, Rock Creek and Water Creek.

Miller Ravine

Crossing structure would consist of an open-bottom arch culvert with footings approximately 16 feet wide, with 1.5 to 2 foot diameter bank rocks located on the inside walls of the structure. A bridge or other structure type may also be considered, pending further engineering analysis. A headwall or wingwalls may be installed at the structure inlet to allow for a shorter structure length. Alignment for the new crossing structure may be shifted slightly (approximately 10 feet) to the south/southeast to allow for proper channel alignment. The channel would be regraded from 50 to 100 feet downstream of the road crossing, and 300 to 400 feet upstream of the crossing to an existing high-stability control feature. Control features are in-channel structures that can stop gully formation and bed erosion from moving upstream. Examples of natural control features include large boulders armored in the streambed, large channel-spanning logs firmly embedded in stream banks, and bedrock.

Rock Creek

Crossing structure would consist of a low-profile aluminum box or other similar low-profile structure approximately 11 feet wide, with 1.5 to 2 foot diameter bank rocks located on the inside walls of the structure. Crossing structure alignment would remain unchanged compared to existing crossing structure. To provide full aquatic organism passage, the channel would be lowered via regrading up to 200 feet downstream of the crossing to a high-stability control feature, and up to 100 feet upstream of the crossing.

Water Creek

Crossing structure would consist of a low-profile aluminum box or other similar low-profile structure approximately 10 feet wide, with 1.5 to 2 foot diameter bank rocks located on the inside walls of the structure. Crossing structure alignment would remain unchanged compared to existing crossing structure. To maintain existing wetland upstream of crossing, the stream channel would be raised downstream in order to achieve full aquatic organism passage and full embedment of the structure. Regraded channel would be designed to reflect existing channel morphology and extend from approximately 50 feet upstream of the crossing structure inlet downstream to a high-stability control feature. The downstream control feature would be located less than 200 feet from the road crossing.

Decision

I have decided to remove and replace the existing culverts at the crossings of National Forest System roads 26N08/Water Creek, 26N35/Rock Creek, and 26N08/Miller Ravine with structures that permit free passage of aquatic organisms above and below the road-stream crossings and are capable of passing water and debris at the 100 year storm design flow, as described under the proposed action.

This project, as proposed, falls within 36 CFR 220.6(e)(18)

> Restoring wetlands, streams, riparian areas or other water bodies by removing, replacing, or modifying water control structures such as, but not limited to, dams, levees, dikes, ditches, culverts, pipes, drainage tiles, valves, gates, and fencing, to allow waters to flow into natural channels and floodplains and restore natural flow regimes to the extent practicable where valid existing rights or special use authorizations are not unilaterally altered or canceled. (FSH 1909.15 Sec. 32.2).

I find that there are no extraordinary circumstances that would warrant further analysis and documentation in an environmental impact statement or an environmental assessment. I took into account resource conditions identified in agency procedures that should be considered in determining whether extraordinary circumstances might exist. The mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion. It is the degree of the potential effect of a proposed action on these resource conditions that determines whether extraordinary circumstances exist.

- Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species were considered and potential effects analyzed. The analyses determined:
    - The Storrie Aquatic Organism Passage Project would not affect the gray wolf or its habitat (Moser and Bustillos 2016).
    - The Storrie Aquatic Organism Passage Project may affect, and is likely to adversely affect the Sierra Nevada yellow legged frog (*Rana. Sierra*) (Olegario 2016). Sierra Nevada yellow legged frog are considered to be at low risk of coming into direct contact with construction equipment due to the lack of confirmed sightings within the project area. Best Management Practices would be used during and after construction that would reduce and mitigate effects. Habitat for this species would be functional after project implementation. The reasoning for the May Affect, Likely to Adversely Affect determination comes from the Biological Opinion issued by the U.S. Fish and Wildlife Service in 2014, which determined that road maintenance activities (which the Storrie Aquatic Organism Project falls under) were not likely to jeopardize the continued existence of the Sierra Nevada yellow-legged frog, but were likely to adversely affect the species and/or its suitable habitat. Surveys for Sierra Nevada yellow-legged frogs have not encountered the species in any of the three streams affected by the project, but the surveys did not meet requirements in the Biological Opinion to confirm that the habitats were unutilized by the frog.
    - The Storrie Aquatic Organism Passage Project may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability in the planning area for Cascades frog (*Rana cascadae),* black juga (*Juga nigrina)*, and Pacific fisher (*Pekania pennant)* (Olegario 2016; Moser and Bustillos 2016).
    - The Storrie Aquatic Organism Passage Project will have no effect on any Threatened, Endangered or Forest Service Sensitive plant species, because the project area includes neither occurrences nor suitable habitat for any of these species (Lepley 2015).

- Migratory birds would not be affected by the Storrie Aquatic Organism Passage Project (Moser 2016).

- Flood plains, wetlands, or municipal watersheds – The project would not involve the construction of any structures which could impede or redirect flood flows, nor any ground surface modifications which could change drainage patterns, impervious surfaces, soil permeability, or other hydrological characteristics such as surface water volumes. The project would not expose people or property to a risk of flooding nor increase the risk of flooding for existing development in floodplains in the project area. The project would not place housing or other structures within a flood hazard area. The project would not involve a change in water use, affect a private or public water supply, or affect the quantity or quality of groundwater recharge, aquifer volume or cause a lowering of the local groundwater table level. The project would not involve an increase in impervious surfaces. The project does not involve discharges of storm water or wastewater (McNamara 2016).
- Congressionally designated areas such as wilderness, wilderness study areas, or national recreation areas – no Congressionally designated areas are located near the project vicinity.
- Inventoried roadless areas or potential wilderness areas – no inventoried roadless areas or potential wilderness areas are located near the project vicinity.
- Research natural areas – no Research natural areas are located near the project vicinity.
- American Indians and Alaska Native religious or cultural sites – no known religious or cultural sites are located within the area of potential effects. On July 15, 2015, this undertaking was approved in accordance with stipulations in the Regional Programmatic Agreement Among the USDA Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer and Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region (2013) (Morris 2015).
- Archaeological sites, or historic properties or areas – In August 2014, cultural resource surveys were conducted in the area of the proposed culvert removals. No historic properties were identified at this time. Three isolated finds were identified, and 3 sites were previously recorded with one being located in close proximity to the planned Rock Creek crossing, outside the area identified for ground disturbance. The known site would be avoided and no new disturbance would occur to the site. On July 15, 2015, this undertaking was approved in accordance with stipulations in the Regional Programmatic Agreement Among the USDA Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer and Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region (2013). The undertaking may be implemented as planned. No additional measures are needed to identify or protect historic properties unless the undertaking's Area of Potential Effect is modified in ways that may have an effect on historic properties. Modification of the Area of Potential Effect will require additional review and approval by the District Archaeologist.

Public Involvement

This action was originally listed as a proposal on the Lassen National Forest Schedule of Proposed Actions on April 1, 2015, and updated periodically during the analysis. Letters were sent to interested and affected parties on September 30, 2015. A legal notice announcing the project was published in the *Chester Progressive* newspaper on September 30, 2015. One response was received from Greenville Rancheria, concerned with protection of archaeological and cultural resources. The project includes integrated design features to protect archaeological and cultural resources through avoidance.

Findings Required by Other Laws and Regulations

This decision is consistent with the Lassen National Forest Land and Resource Management Plan. The project was designed in conformance with the Butt Creek (MA37) management area direction. Actions taken at the three road-stream crossings would be designed to meet the Standards & Guidelines (S&G) for MA37 including protecting fish habitat for resident fish of the Yellow Creek drainage (LRMP Ch. 4, Sec. G, p. 4-231, B, FI #1).

Administrative Review Process

This project is not subject to legal notice and opportunity to comment process per 36 CFR 218.23(a).

Implementation Date

Project implementation is expected to begin in summer 2016 and would be complete by fall 2016

Contact

For additional information concerning this decision, contact: Chris Mayes, fisheries biologist, Almanor Ranger District, Lassen National Forest, P.O. Box 767, 900 East Highway 36, Chester, California 96020 (530)-258-5176

Kathleen Nelson — June 9, 2016

KATHLEEN NELSON — Date
Almanor District Ranger

Attachment 1

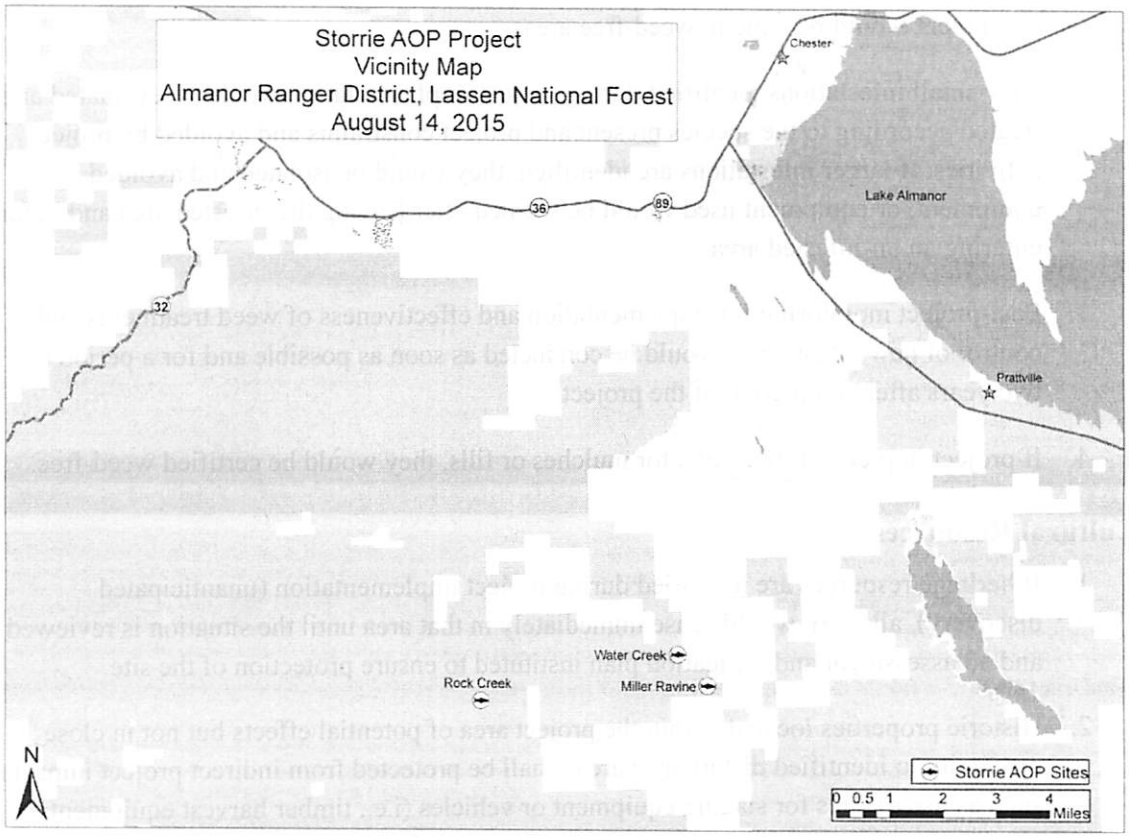

Figure 1 Storrie Aquatic Organism Passage Locations

Integrated Design Features

Integrated design features are elements of the project design that would be applied in the areas impacted by the proposed action, in addition to current Forest Plan management direction, standards and guidelines (S&G). These features are developed to reduce or avoid adverse environmental effects of the proposed action on forest resources. The following integrated design features would be applied in conjunction with management actions proposed for the Storrie AOP Project:

Botany

Threatened, Endangered, Sensitive (TES) Plant Species

1. There are no known occurrences of Threatened, Endangered, or Forest Service Sensitive (TES) plant species at the proposed road-stream crossing locations. New occurrences of TES plant species discovered before or during ground-disturbing activities would be protected through flag-and-avoid methods.

Noxious Weeds

1. All off-road equipment would be weed-free prior to entering the Forest. Staging of equipment would be done in weed-free areas.

2. New small infestations identified during project implementation would be evaluated and treated according to the species present and project constraints and avoided by project activities. If larger infestations are identified, they would be isolated and avoided by equipment, or equipment used would be washed after leaving the infested area and before entering an un-infested area.

3. Post-project monitoring for implementation and effectiveness of weed treatments and control of new infestations would be conducted as soon as possible and for a period of two years after completion of the project.

4. If project implementation calls for mulches or fills, they would be certified weed-free.

Cultural Resources

1. If heritage resources are identified during project implementation (unanticipated discovery), all work would cease immediately in that area until the situation is reviewed and an assessment and mitigation plan instituted to ensure protection of the site.

2. Historic properties located within the project area of potential effects but not in close proximity to identified disturbance areas shall be protected from indirect project impacts such as use of sites for staging equipment or vehicles (i.e., timber harvest equipment; water trucks; road construction, reconstruction or maintenance equipment; Forest Service vehicles etc.) or any other activities. The Forest Service project manager will be apprised of all site locations to ensure protection from direct as well as indirect effects.

Recreation

1. Access to trailheads and trailhead parking areas would be kept open and free of debris. Alternate routes to trailhead access potentially affected by the project would be advertised and made available to the public.

Watershed

Restrictions on proposed actions would be implemented to protect aquatic resources to the extent practicable while also meeting the objectives of the proposed action. Standards and Guidelines relevant to the proposed actions are included in the list of integrated design features below, and are designated by "S&G" followed by the S&G's number as described in the 2004 SNFPA and Lassen National Forest LRMP. The following integrated design features would be applied to the Storrie AOP Project:

1. Turning of mechanical equipment not located on a road prism would be kept to a minimum.
2. Riparian species (alder, willow, cottonwood, aspen, etc.) would not be removed to the extent practicable.

3. No storage of fuels or other toxic materials within RCAs. No refueling of equipment would occur within RCAs, unless no other alternative exists. Ensure that spill plans are reviewed and up-to-date (S&G #99).
4. Fish and other aquatic vertebrates encountered within the project area would be netted and removed from the project area. Block nets would be placed in the stream above and below the project area to prevent aquatic organisms from re-entering the project area during implementation. Block nets would be removed from the stream following project implementation.
5. Any piles of excavated material that remain on-site following project implementation would be placed outside of RCAs to the extent practicable.
6. Erosion control measures would be implemented on any exposed soils following project implementation that were the result of project activities. These measures may include (but are not limited to) spreading of pine needles and woody debris, spreading of weed-free grass seed, and/or placement of straw waddles on exposed soils. Tightly woven fiber or plastic monofilament netting, or other similar material shall not be used for erosion control or other purposes at any of the three AOP sites.
7. Whirling Disease (an infectious disease that adversely affects trout and can be spread through water and mud/silt transport to other water bodies) is confirmed present in Yellow Creek, and may be present in tributaries to Yellow Creek. This includes all road-stream crossings proposed for replacement in the Storrie AOP project. All mud or silt must be washed from equipment prior to the equipment being moved to another road-stream crossing work site. All equipment that comes into contact with stream water must be allowed to completely dry before being moved to another road-stream crossing work site.
8. Screening devices would be used for water drafting pumps. Pumps would have low entry velocity to minimize removal of aquatic species, including juvenile fish, amphibian egg masses and tadpoles, from aquatic habitats (S&G #110).

Wildlife

1. A California spotted owl Limited Operating Period from March 1st to August 15th would apply to the Rock Creek site. The Limited Operating Period would remain in effect unless surveys determine that no spotted owl nesting or activity is occurring within 0.25 mile of the site.
2. A northern goshawk Limited Operating Period from February 15th to September 15th would apply to the Rock Creek site. The Limited Operating Period would remain in effect unless surveys determine that no northern goshawk nesting is occurring within 0.25 mile of the site.
3. A Pacific fisher Limited Operating Period (LOP) from March 1st to June 30th would apply to all three project sites to prevent disturbance to possible den sites in the area. The LOP would remain in effect unless surveys determine that no Pacific fisher denning activity is occurring within 0.25 mile of each site.

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