

**Finding of No Significant Impact
North Fork Lost Man Creek Bridge
Redwood National Park
Humboldt County, California
August 2009**

This Finding of No Significant Impact (FONSI) should be attached to the North Fork Lost Man Creek Bridge Environmental Assessment (EA) dated July 2009. This FONSI together with the EA constitutes a complete record of the conservation planning and environmental impact analysis process for this proposal.

No comments were received that required any changes to the EA, which describes a project that is well understood and supported by agencies, stakeholders, and the general public throughout the local area and the region. Thus, there are no changes to the EA or to the selected action as a result of public review.

The NPS will implement as its selected action Alternative 2 of the EA, which was also the proposed action and the environmentally preferred alternative. The selected action is one of two alternatives presented in the EA; the no action alternative was also considered.

Under the selected action, the NPS will remove failing culverts on Geneva Road over the North Fork Lost Man Creek and replace them with a bridge. Geneva Road is maintained for park administrative access to previously logged areas that are being restored through the watershed restoration program. The Lost Man Creek Trail was established on Geneva Road as a hiking and bicycle trail. Replacing the culverts with a bridge will improve access for threatened fish species to spawning areas upstream.

The legislation establishing (PL 90-245) and expanding (PL 95-250) Redwood National Park directs the NPS to rehabilitate areas within the park "contributing significant sedimentation because of past logging disturbances and road conditions, and to the extent feasible, to reduce the risk of damage to streamside areas..." (16 USC 79j) Since 1978, the NPS has been conducting watershed restoration activities in accordance with the legislation. This project is fully consistent with the legislative direction.

The 1999 Redwood National and State Parks Final General Management Plan/General Plan, Final Environmental Impact Statement/Environmental Impact Report (RNSP GMP/FEIS) described a program to remove or upgrade abandoned logging roads to reduce the potential for erosion at stream crossings and from unstable road segments. The selected action would be implemented as part of the national park watershed restoration program described in the GMP. This EA is tiered off the GMP/FEIS.

The GMP included the following natural resource management goals and strategies that are relevant to this project intended to improve habitat for threatened fish by removing failing drainage structures:

- Protect and preserve the natural resources of the parks.
- Restore lands, ecosystems, and processes that have been altered by modern human activities.
- Protect threatened species.

Purpose and Need for the North Fork Lost Man Creek Bridge Project

The purpose of this project is to remove two damaged undersized culverts and associated road fill from the stream crossing on Geneva Road across the North Fork of Lost Man Creek and to replace the culverts with a bridge. This project is needed to improve access to spawning habitat for threatened fish species and to prevent additional damage to fish habitat from sediment associated with failure of these drainage structures. The bridge is needed to ensure the Lost Man Creek Trail continues to provide a safe and enjoyable experience for hikers and bicyclists and the road provides administrative access needed for watershed restoration and other resource management projects in Redwood National Park.

Selected Action

The selected action is Alternative 2: Remove Culverts and Replace with a Bridge which is identified in the EA as the proposed action. There are no changes in actions, mitigations, or other key elements of the selected action described in the EA.

Under the selected action, the NPS will remove two side-by-side 48-inch-diameter corrugated metal pipe culverts through which the North Fork Lost Man Creek flows. About 2,100 cubic yards of road fill will be excavated from the stream crossing from along about 70 feet of the channel immediately upstream of the crossing. Sediment accumulated in the channel immediately upstream of the existing culverts will be excavated to restore channel grade and form. About 60 feet of road will be treated as part of the crossing treatment. The stream crossing and the upstream streambank will be reshaped to resemble the original topography as closely as possible.

A bridge will be installed across North Fork Lost Man Creek in the same location as the current roadway. The bridge would be 60 feet long with a minimum rating to accommodate a live load of 80,000 pounds, and 14 to 16 feet in width, with handrails on each side. Concrete bridge abutments approximately 8 feet by 16 feet will be poured in place on each side of North Fork Lost Man Creek outside of the channel.

The road surface on either side of the bridge will be graded and graveled. Bare soils will be covered with vegetation salvaged during excavation or with locally obtained mulch to reduce surface erosion following treatment.

All excavated earthen material will be placed in stable locations near the work site where the material will not erode into the stream. The material will be shaped to blend with the surrounding topography and covered with vegetation removed during excavation or other locally obtained mulch to reduce post-excavation erosion. Native vegetation salvaged from the excavation site will be replanted after the bridge is installed and the road is graveled. The trail will be closed from mid-September through mid-October while heavy equipment work is underway.

Alternatives Considered in the Environmental Assessment

The July 2009 EA described two alternatives:

- Alternative 1: No Action.
- Alternative 2: Remove Culverts and Replace with a Bridge (NPS Proposed Action).

Under the No Action alternative (Alternative 1), the NPS would perform maintenance of the existing culverts by periodically removing debris that accumulates at the culvert inlets and grading the road to maintain road surface drainage and safe access for administrative vehicles, hikers, and bicyclists.

The proposed action in the EA was Alternative 2: Remove Culverts and Replace with a Bridge, the same action described above as the selected action.

Environmentally Preferred Alternative

The environmentally preferred alternative is the action that best promotes the environmental policies outlined in the National Environmental Policy Act. These policies include fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations; attaining the widest range of beneficial uses of the environment without degradation or risk to health or safety; and preserving important historic, cultural, and natural aspects of our national heritage.

The NPS determined that the selected action described in the EA as Alternative 2: Remove Culverts and Replace with a Bridge is the environmentally preferred alternative. This alternative will improve habitat and reduce adverse effects on three species of anadromous salmonids listed as threatened by

- improving fish passage to upstream spawning areas by removing a stream crossing culverts that partially block the stream channel;
- restoring the original topography of the stream channel and banks by removing excess sediment;
- improving water quality by reducing input of fine sediment; and
- reducing the threat of sediment delivery to the stream from unstable road fill.

The selected action will also improve visitor safety by installing a bridge with handrails.

The no action alternative is not the environmentally preferred alternative because it would not reduce the potential for eventual failure of the stream crossing. The culverts would continue to degrade and the stream crossing would gradually erode or eventually fail massively in a storm. The sediment delivered to the stream would move downstream and further degrade the quality of spawning habitat for threatened salmonids. The culverts would continue to limit fish passage to habitat upstream of the crossing.

Public Involvement

This project on North Fork Lost Man Creek is similar to the much more extensive watershed restoration project in other parts of the Lost Man Creek watershed that is expected to be completed in 2011. Public comment received on the programmatic proposal for watershed restoration in the 1999 GMP/EIS, the 2006 environmental assessment for the Lost Man Creek restoration project, a 2007 environmental assessment for a similar culvert removal project on the StreeLOW Creek Hike-Bike Trail, and other similar projects in and around the parks and in the region directed at restoration of salmonid habitat indicates broad public support for such projects. Therefore, no specific public scoping was conducted for this project. The impact topics addressed in this EA are the same for natural and cultural resources as those addressed in the similar watershed restoration projects.

The EA was available for review from July 22 through August 24, 2009. A copy of the EA was sent to 11 federal, state, and local agencies and organizations, and four local libraries. A letter or e-mail announcing the availability of the EA was sent to an additional 52 elected and tribal officials, organizations, and individuals. A press release was sent to the park media list, which includes local newspapers, radio, and television stations. All letters and the press release provided the internet address where the EA was posted on the park homepage and the NPS PEPC public site. There was no media interest in this specific project although other local stream restoration projects are occasionally covered in local newspapers. One comment was received in support of the project and requesting information on the design of the bridge. No additional requests for copies of the document or comments were received on the EA.

Clean Water Act and Endangered Species Consultations

The project will be conducted under the U.S. Army Corps of Engineers (Corps) San Francisco District's Regional General Permit No. 12 (RGP 12, Corps File No.: 27922N) in compliance with Section 404 of the Clean Water Act. The RGP was issued on September 9, 2004 and expires on December 1, 2009; it is being renewed for an additional five years. RGP 12 covers all projects funded by the California Department of Fish and Game (CDFG) Fisheries Restoration Grant Program for the purpose of restoring salmonid fisheries habitat in non-tidal reaches of rivers and streams, improving watershed conditions impacting salmonid streams and improving the survival, growth, migration and reproduction of native salmonids.

Three federally listed threatened salmonids occupy the project area—the Southern Oregon/Northern California Coast coho salmon (*Oncorhynchus kisutch*), California Coastal Chinook salmon (*O. tshawytscha*) and the Northern California steelhead (*O. mykiss*). Effects on listed salmonids and their designated critical habitat from activities authorized under RGP12 have been analyzed in NOAA Fisheries' RGP 12 Biological Opinion, dated May 21, 2004 (151422SWR03AR8912:FRR/JTJ) in accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA; 16U.S.C.1521 et seq.). NOAA Fisheries' RGP 12 Biological Opinion provides section 7 consultation coverage for the potential effects to listed salmonids from the North Fork Lost Man Creek Bridge project.

NOAA Fisheries determined in the Biological Opinion that the location and proposed timing of projects authorized under the RGP would not affect the California Coastal Chinook salmon and are not likely to jeopardize the continued existence of the Southern Oregon/Northern California Coast coho salmon or Northern California steelhead. NOAA Fisheries anticipates that take of listed species as a result of projects authorized under the RGP will be in the nature of temporary displacement and/or reduction in feeding rates (with a possible minimal level of mortality) and will have no long-term negative effects on the survival and recovery of listed species.

The effects on northern spotted owls and marbled murrelets from activities described in this EA have been analyzed in Mill Creek and Lost Man Creek Trails Culvert Replacement Biological Assessment sent to the U.S. Fish and Wildlife Service (USFWS) on June 6, 2005. The NPS determined that the selected action may affect but will not adversely affect northern spotted owls due to minor amounts of habitat degradation. Nesting marbled murrelets will be adversely affected by noise disturbance occurring within a quarter mile of nine acres of suitable low to medium quality nesting habitat. Pacific fishers may be affected but the effects will be negligible within the local population due to minor amounts of habitat degradation. The USFWS Biological

Opinion, dated July 14, 2005 (Ref. Doc. No. 8-14-2005-2558) concurred with the NPS determination.

Cultural Resource Consultations

The NPS notified the SHPO in February 2009 that an environmental assessment was being prepared and outlined the project. This correspondence also sought concurrence from the California SHPO that NPS had taken sufficient measures to identify resources eligible for or listed on the National Register of Historic Places within the project area of potential effect. The SHPO responded April 13, 2009 with concurrence that these steps were adequate.

NPS policies require consultation with affected American Indian groups. Consultation with the Yurok Tribe Heritage Preservation Officer was submitted by NPS for review for this project under 36 CFR 800 in February 2009 seeking concurrence that NPS had taken sufficient measures to identify resources eligible for or listed on the National Register of Historic Places within the project area of potential effect.

Ethnographic interviews were conducted in 2000 that provided information about the project area being used for resource procurement and fishing along the lower reaches of the Lost Man Creek watershed. Consultation with the Yurok Tribes Culture Committee about the entire Lost Man Creek watershed occurred on August 26, 2005 and November 18, 2005 in the Klamath Tribal office. The initial consultation with the Yurok Tribe Culture Committee resulted in the recommendation to speak in detail with a Yurok elder who has knowledge of the history of trails and logging history of the area and a traditional Yurok basket maker with resource knowledge of the area, particularly a bear grass area close to the coast used by Yurok basket makers. Consultations specific to this project were conducted with the Yurok Tribe Culture Committee on June 27, 2008. No concerns specific to this project site were expressed.

Why This Project Will Not Have a Significant Effect on the Environment

This section summarizes effects on resources in the context of the project area and the parks as a whole, and documents that none of these effects is significant, highly controversial, or uncertain, nor will the selected action adversely affect public health and safety. Further, the selected action is not part of a larger action and will not establish a precedent for future actions.

The EA contains descriptions of the mitigation and best management practices to protect resources including water quality, riparian wetlands, and threatened fish species known to be present that might be affected by the project. Potential effects to other resources have been determined to be negligible and will not require mitigation on the part of the NPS to avoid or reduce the effects discussed below.

Air Quality—The selected action will have very localized adverse effects on air quality for approximately one month from vehicle emissions and fugitive dust from excavation of road fill while heavy equipment is working. Dust suppression equipment and clean water will be used to reduce excess airborne particulates from exposed soils if needed. Under the no action alternative, the road would continue be used by equipment and vehicles for access to watershed restoration, forest management, and fire management programs. Vehicles and heavy equipment are licensed under state regulations to meet state air quality standards for vehicle emissions. Air quality will quickly return to very good to excellent when heavy equipment work is completed and vehicles no longer access the project area. There will be no long-term adverse effects on air quality in the project area under either no action or the selected action.

Cumulative Effects on Air Quality—Air quality in the parks and the region will continue to be very good to excellent over the long-term. The only potentially significant source of air pollution is from wildfires, which could have significant adverse effects on air quality for the duration of a fire. Potential adverse effects on air quality from planned fire ignitions are negligible to moderate. The North Coast Air Quality Management District coordinates planned ignitions in Humboldt, Del Norte, and Trinity Counties to minimize cumulative adverse smoke effects on sensitive areas (local communities and highways). The cumulative effect on air quality in the parks from prescribed fires conducted on adjacent private timber lands to reduce logging slash will be short-term, adverse, localized and could range from negligible to moderate depending on wind conditions and how close the prescribed fires are to park boundaries.

Effects on Soils and Topography—Under the selected action, an estimated 2,100 cubic yards of soils will be excavated from an area of about 8,000 square feet (0.2 acre) to remove the stream crossing and restore the channel form. All these soils are either sediment that has aggraded in the stream channel upstream of the crossing or road fill within the crossing. The selected action will reduce the potential for erosion by excavating unstable road fill and moving it to more stable locations, and reshaping the slope to resemble original topography as closely as possible. Newly excavated slopes will be covered with mulch obtained on-site to reduce erosion until vegetation regrows from the seed bank in topsoil that will be repositioned when the road segment is stabilized. The selected action will have a minor localized benefit to soils and topography in the project area from moving soils to a more stable location, repositioning top soil, restoring the landform, and reducing the potential for landslides and erosion. The overall adverse effect on soils and topography is negligible because of the very small area that will be excavated and because this area was altered by the original road construction.

The effects on soil and topography are judged to be beneficial and minor from restoration of topography in the North Fork Lost Man Creek stream channel, and beneficial and moderate for reduction of sediment threat to Lost Man Creek posed by failing culverts and road fill. The benefit to North Fork Lost Man Creek would be greater than the benefit to Lost Man Creek because the North Fork Lost Man Creek channel would be directly impacted if the stream crossing fails and because North Fork Lost Man Creek is smaller than Lost Man Creek so that a given volume of soil has a proportionately greater impact on the smaller stream.

The no action alternative would not have any project-related construction effects to topography or soils in the project area, all of which were previously disturbed by road construction. The road fill and soils adjacent to the stream crossing would continue to gradually erode in rain storms. The erosion rate would increase as the culverts, stream crossing and road fill degrade. Eventually, the culverts would fail completely, causing erosion of an estimated 1,050 cubic yards of road fill that would be delivered directly into North Fork Lost Man Creek.

Cumulative Effects on Soils and Topography—The selected action will have a negligible cumulative benefit to soils and topography in the North Fork Lost Man Creek; most of the creek is upstream of the project area. Removal of the stream crossing in North Fork Lost Man Creek will have no direct effect on topography and soils in other sub-basins in the Redwood Creek watershed. Topography in the other sub-basins of Redwood Creek will remain altered by presence of logging roads. Soils will continue to erode in unstable areas along roads in the rest of the watershed. Landslides related to the presence of untreated roads will occasionally alter topography, particularly after major storms.

Around 1,400 miles of forest roads and over 5,000 miles of skid trails are estimated to have been built within the Redwood Creek watershed for logging prior to the area becoming a national park. About 445 miles of former logging roads and 3,000 miles of skid trails are included within the national park boundaries. Replacement of a culvert with a bridge on about 60 feet of old logging road under the selected action will have negligible short-term or long-term benefits to the watershed as a whole. There will be negligible benefits to the mainstem of Redwood Creek and Redwood Creek estuary and minor benefits to Prairie Creek from the selected action. Over the very long-term, if failing roads within the park are removed and if roads upstream and outside the park are maintained and effective erosion control implemented prior to major storms, there will be a major benefit to soils and topography in the Redwood Creek watershed from preventing unnaturally high levels of erosion. The long-term benefit to the Redwood Creek estuary from reducing the influx of sediment will be a moderate benefit to estuary function because the Redwood Creek levees would continue to alter the hydrology and function of the estuary.

Effects on Hydrology and Water Quality—Water quality at the stream crossings will be protected during excavation through best management practices (BMPs) to reduce soil erosion at excavation sites and prevent petrochemical or other contaminant spills. A spill prevention plan has been prepared. The BMPs are prescribed in the US Army Corps of Engineers RGP 12, NOAA Fisheries RGP 12 Biological Opinion, and the California Department of Fish and Game's mitigation measures to minimize adverse effects on listed fish species from projects funded under the CDFG Fisheries Restoration Grant Program found in the CDFG California Salmonid Stream Habitat Restoration Manual.

Under the selected action, there will be short-term adverse effects on water quality from erosion of sediment from excavation of 2,100 cubic yards of road fill to remove culverts and stream crossing to expose the natural channel elements and side banks. Erosion will be reduced by working during low flow periods in September, using silt fences and other standard best management practices for erosion control, mulching of newly exposed soils, and by completing the project prior to the onset of the rainy season. The mitigation measures to minimize degradation of water quality will reduce the short-term effects on water quality from increased sediment in the stream and higher turbidity to minor.

The selected action will have short-term adverse effects on water quality from increased turbidity in Lost Man Creek for 1-5 years following excavation as any remaining fill material is flushed out during winter storms as the stream channels readjust to the restored configuration. Turbidity is highest in the first large storm after excavation and declines with each successive storm. The short-term adverse effects on water quality from increased turbidity are outweighed by the long-term benefits to hydrology from restoring drainage patterns; long-term benefits from removing 2,100 cubic yards of fill from and immediately adjacent to the stream channel; and long-term benefits from reducing erosion potential associated with about 1,050 cubic yards that could enter Lost Man Creek or damage aquatic habitat as road fill erodes and roads fail.

There would be long-term beneficial effects to water quality and hydrology in the North Fork and main stem of Lost Man Creek from removal of failing undersized culverts and from removing accumulated sediment that would gradually erode, especially during high flows following storms. The benefit is judged to be minor to moderate, depending on the intensity and duration of storms.

Thus, the selected action will have negligible to minor short-term adverse effects on water quality and minor to moderate long-term benefits to hydrology and water quality from restoring drainage patterns and reducing potential for road failures that introduce sediment into streams.

Under the no action alternative, there would be no construction-related effects on water quality from excavation to remove the culverts or the stream crossing and install a bridge. The culverts and stream crossing would gradually degrade as these drainage structures continue to age and deteriorate. Gradual failure would release small quantities of sediment into the streams during storms. Major storms would cause more sediment to enter the streams. Eventually, the culverts and stream crossing would fail completely, which would most likely occur during a major storm. Complete failure would release an estimated 1,050 cubic yards of road fill directly into North Fork Lost Man Creek and Lost Man Creek. Gradual delivery of small volumes of sediment into the streams would have a long-term adverse effect on water quality from increased turbidity and sedimentation. This long-term chronic turbidity would be a minor adverse effect most noticeable after rainstorms. Complete failure of the stream crossing would have a moderate to significant adverse effect on water quality in Lost Man Creek that could persist for decades, based on effects on other park streams where stream crossings and roads have failed catastrophically.

Cumulative Effects on Hydrology and Water Quality—The overall cumulative effects on hydrology and water quality in the park relate to past logging and road building, both within what is now the national park and in the Redwood Creek basin upstream of current park boundaries.

Lost Man Creek is a tributary of Prairie Creek, which is the largest tributary of Redwood Creek. Both Lost Man Creek and Prairie Creek enter the larger stream low in their respective drainages. Therefore, these tributaries have a relatively small effect on the hydrology and water quality of the larger stream because most of the drainage basin lies upstream of the confluence of the larger stream and the tributary.

Redwood Creek has been identified as a sediment-impaired and temperature-impaired stream by the U.S. Environmental Protection Agency (EPA) and as water-quality limited due to clean sediment loading by the North Coast Regional Water Quality Control Board. The EPA established a Total Maximum Daily Load (TMDL) for sediment for Redwood Creek under Section 303(d) (1) (A) of the Clean Water Act. The Redwood Creek TMDL is used as a reference to ensure that watershed restoration activities in the Lost Man Creek watershed are consistent with the TMDL recommendations to protect the beneficial uses of Redwood Creek, particularly the cold water fishery. The Redwood Creek TMDL is primarily concerned with the conditions on the mainstem of Redwood Creek that result from the effects of land use and natural conditions on the mainstem and all the tributaries. Redwood Creek TMDL hillslope targets will be met or exceeded under the selected action but water quality of Redwood Creek within the park will not improve significantly because the confluence of Redwood Creek with Prairie Creek is downstream of the park. There will be a negligible reduction in sediment that might be delivered to the Redwood Creek estuary (some of which is located within the park) by implementing the selected action in the North Fork Lost Man Creek. The water quality in Redwood Creek within the park will continue to be adversely affected by logging roads on unstable slopes upstream of the park and abandoned failing roads within other Redwood Creek subwatersheds in the park. As this sediment erodes, it will continue to adversely affect hydrology and water quality within the reaches of Redwood Creek within the park, and in the estuary.

The erosion potential for Redwood Creek upstream of its confluence with Prairie Creek would remain at about 5 million cubic yards. Long-term improvement to the main stem of Redwood Creek from reducing sediment associated with stream crossings on the North Fork Lost Man Creek will be negligible because of the small amount of sediment removed under the selected action compared to the erosion potential remaining in the Redwood Creek watershed. A major

storm would cause erosion in unrestored areas in the Redwood Creek basin; the contribution of the North Fork Lost Man Creek to improved conditions in Redwood Creek would be negligible in comparison to the magnitude of adverse effects throughout the basin.

The effect of stream crossing removal and associated minor watershed restoration will be a benefit to the water quality of Prairie Creek and Redwood Creek but the benefit will be negligible because of the adverse effects of remaining abandoned roads and numerous unrestored stream crossings. The removal of the stream crossing road fill on North Fork Lost Man Creek will not improve hydrological conditions or water quality in Redwood Creek upstream of its confluence with Prairie Creek.

Effects on Floodplains and Wetlands—Under the no action alternative, the floodplain of North Fork Lost Man Creek near its confluence with Lost Man Creek would continue to be altered by undersized culverts and road fill within the stream channel. When the culverts eventually fail, an estimated 1,050 cubic yards of road fill would be delivered directly into North Fork Lost Man Creek. This volume of sediment would move downstream and be delivered to Lost Man Creek, where it could fill in the channel (aggrade). This could cause floodwaters to move into the floodplain of Lost Man Creek, and cause loss of riparian wetland vegetation, primarily red alder. Delivery of sediment to the mainstem of Lost Man Creek following catastrophic failure of the stream crossing on North Fork Lost Man Creek would be a long-term adverse effect that would vary from minor to severe, depending on the intensity of the storm and the volume of the flood flows. A storm of sufficient intensity to cause catastrophic failure of roads in Lost Man Creek would cause similar effects on other tributaries of Prairie Creek, which would cause severe damage to the Prairie Creek floodplain through scour and aggradation of the stream channel and loss of riparian vegetation.

Under the selected action, there would be temporary adverse effects to the riparian wetlands adjacent to excavation areas from removal of about 1,500 square feet of riparian vegetation, primarily red alders and understory plants. This adverse effect would be negligible because the riparian vegetation would recover in one to two growing seasons, and all the riparian vegetation present is regrowth following the original disturbance from road construction. There would be an immediate benefit to the floodplain of North Fork Lost Man Creek at its confluence with the mainstem of Lost Man Creek and a long-term benefit to riparian wetlands along Lost Man Creek from removal of undersized drainage structures and restoration of the original stream channel. This benefit would be negligible in the short-term but minor to moderate in the long-term from prevention of future catastrophic failure of the drainage structures and road fill that could bury riparian zones and fill in the floodplain.

Cumulative Effects on Floodplains and Wetlands—Restoration within the project area would have negligible short-term adverse effects and minor long-term benefits to the floodplain of Prairie Creek. Removal of stream crossings and associated road removal under the selected action will have a negligible benefit to the Redwood Creek floodplain, because Prairie Creek enters the Redwood Creek floodplain at a point where the floodplain is confined by flood control levees. As watershed restoration projects are completed within and outside the parks, and new logging roads upstream of the parks are constructed and maintained to modern standards in the state Forest Practice Act, there would be a long-term moderate benefits to the floodplain of Redwood Creek.

There will be short-term minor adverse effects on riparian wetlands outside the project area when logging roads are removed from stream crossings in watershed restoration projects. There will be

long-term minor to moderate benefits to riparian wetlands as the riparian zones recover after watershed restoration is completed in other areas of the park.

Effects on Vegetation—The vegetation in the project area is intact old growth forest surrounding the road and stream crossing. Under both the no action alternative and the selected action, vegetation growing along the road would be trimmed occasionally and downed trees and limbs removed to maintain an open corridor. No other vegetation would be removed under the no action alternative. Therefore, the no action alternative would have a negligible effect on vegetation in the short-term.

Under the selected action, approximately 1,500 square feet (0.03 acre) of vegetation will be cut or grubbed for excavation of the stream crossing, culverts and adjacent road segment. The largest trees that would be cut will be red alders and Douglas-fir less than 18 inches in diameter at breast height. All vegetation that will be removed is common in the project area and is routinely cut or trimmed to maintain an open corridor. Understory vegetation will re-grow within several months depending on the severity of the following winter and will be completely regrown within a few years.

Newly disturbed soils will be covered with locally-obtained mulch to reduce erosion. To avoid importing unwanted exotic plants, vegetation removed along the roadsides during excavation will be salvaged and placed on the excavation sites following treatment. Revegetation will occur naturally from the seed bank in the mulch and from the adjacent areas. Natural revegetation occurs quickly in the moist heavily vegetated project area.

Vegetative matter and mud will be cleaned from all vehicles and equipment used in this project prior to entering the park to prevent transmission of exotic species, including plants or plant pathogens especially *Phytophthora lateralis* that causes Port-Orford-cedar root disease and *Phytophthora ramorum* that causes Sudden Oak Death [SOD].

Under the selected action, the primary impact to vegetation is the removal of trees that have regrown following construction of the road. Roadside understory vegetation would be removed in conjunction with the crossing excavation, but most of the disturbed area is road surface that does not support vegetation or that has been routinely cleared. Road construction and maintenance have continuously disturbed all vegetation adjacent to the road for many years.

Cumulative Effects on Vegetation—Cumulative adverse effects on vegetation in the parks and the surrounding region result from logging and associated road construction, and residential, commercial, industrial, agricultural, and transportation development and use. The most significant cumulative effect on vegetation in the parks occurred prior to park establishment and expansion from the logging of about 50,000 acres of original coniferous forest, mostly in the Redwood Creek watershed. Park projects that remove vegetation include other watershed restoration projects, maintenance of roads and trails, and restoration of the Bald Hills grasslands and oak woodlands through removal of encroaching Douglas-fir. Areas of the park with Port-Orford-cedar are being managed to reduce the spread of Port-Orford-cedar root disease, in cooperation with the U.S. Forest Service and the Bureau of Land Management over the range of Port-Orford-cedar. Sudden Oak Death, caused by a pathogen closely related to the root disease agent, is also expected to adversely affect park vegetation but the degree of effect is not yet known. The NPS is developing a strategy to protect vegetation from Sudden Oak Death.

Effects on Wildlife—There will be short-term localized adverse effects on wildlife from noise, disturbance, and loss of 1,500 square feet (0.03 ac) of vegetation that provides wildlife habitat. Individuals of small sedentary species will be killed or displaced by excavation and vegetation removal. Mulching of newly excavated areas will provide immediate shelter for small animals. The effect on wildlife will be negligible over the long-term because vegetation to be removed is a very small amount of poor quality habitat adjacent to a road.

Cumulative Effects on Wildlife—Cumulative adverse effects on wildlife in the parks relate primarily to activities outside the parks including loss or conversion of habitat for agricultural, residential, commercial, and transportation development; mortality from vehicle collisions along U.S. Highway 101; and illegal poaching of elk and deer. These effects are negligible to significant, depending on the species and its degree of mobility and tolerance of human presence and disturbance. Some individual animals benefit in the short-term from the presence of humans who leave trash that serves as a food source, and from disturbance due to logging, which increases forage for some species as vegetation regrows. However, in the long-term, human food sources have a moderate to significant adverse effect on individual animals that become accustomed to unhealthy food sources or are killed if they become a nuisance or cross highways to get to food sources. Other park actions that affect wildlife include second growth forest management, control of non-native plants, and maintenance of facilities. The cumulative effects on wildlife from park actions in the short-term will be adverse, localized, and negligible. Park resource management projects have long-term minor to moderate benefits on wildlife species from restoration of habitat and because the parks serve as a refugium from disturbance.

Effects on Rare, Sensitive, Threatened, and Endangered Species—There are no rare, sensitive, or listed plants that will be affected by the selected action.

NOAA Fisheries determined that the location and proposed timing authorized through the Biological Opinion for US Army Corps of Engineers RGP 12 will not affect California Coastal Chinook salmon and is not likely to jeopardize the continued existence of the Southern Oregon/Northern California Coast coho salmon or Northern California steelhead. NOAA Fisheries anticipates that take of listed species as a result of projects authorized under the RGP will be in the nature of temporary displacement and/or reduction in feeding rates (with a possible minimal level of mortality) and will have no long-term negative effects on the survival and recovery of listed species.

Short-term adverse effects on listed salmonids and their habitat from instream work and increased turbidity in the first season following restoration activities will be minimized by application of mitigation measures required for projects funded through the CDFG Fisheries Restoration Grant Program; these mitigation measures were described in appendices A and B of the July 2009 EA. The short-term adverse effects would be negligible to minor. The long-term effects on listed salmonids in the North Fork of Lost Man Creek from improving fish passage and reducing the threat of erosion would be beneficial and moderate.

Under the no action alternative, there would be no short-term effects on listed fish species from construction. The Lost Man Creek watershed contains some of the best remaining spawning habitat and fish populations in the national park. Long-term adverse effects to three species of anadromous salmonids from lack of access to upstream spawning habitat in the North Fork of Lost Man Creek would continue. This is considered a moderately adverse impact to fish within the Lost Man Creek watershed because the North Fork is one of the major tributaries of Lost Man Creek, and a minor adverse effect to fish populations in the park. As the culverts and the

associated road fill continue to degrade, chronic turbidity in Lost Man Creek would gradually increase and the chance of culvert and road failure increases. Culvert and road failure could have significant adverse effects on fish and stream habitat depending on the magnitude of the storm that causes road failure. Therefore, the no action alternative would result in minor adverse effects to fish populations in the park and potentially significant adverse effects to fish in Lost Man creek.

NPS wildlife biologists determined that no suitable habitat or designated critical habitat for spotted owl or marbled murrelets will be affected by the selected action. The project will be conducted after September 15 and completed prior to February 1, so there will be no noise or disturbance effects on either northern spotted owls or marbled murrelets. Therefore, there will be no effects on northern spotted owls and marbled murrelets from this project.

Cumulative Effects on Rare, Sensitive, Threatened, and Endangered Species—Almost all activities in RNSP affect federally listed threatened species because the forests and streams in the parks are occupied by northern spotted owls or marbled murrelets, and coho and Chinook salmon, and steelhead trout. Fire management throughout the parks will have minor long-term benefits to sensitive species from reduction in fuel levels that reduce the potential for catastrophic wildfires. Management of second growth forests in RNSP will have minor to moderate benefits as forests regain characteristics more typical of old growth forest and the habitat for forest-dwelling bird species improves. On-going and planned projects and activities for which the NPS consults with either USFWS or NMFS for potential effects on listed, proposed, and candidate species include road, trail and facility maintenance and construction; non-native plant management; helicopter and off-road vehicle use; and beach management. The NPS has been authorized incidental take of listed species, primarily northern spotted owls, marbled murrelets, and juvenile anadromous salmonids, by the USFWS and/or NMFS for some of these activities. On-going and reasonably foreseeable NPS actions will not jeopardize the continued survival of any listed threatened species.

Outside the parks, the primary activities that affect listed threatened and endangered species are loss of habitat from logging, residential, industrial, and agricultural development; dams for power development, flood control, and water supply for domestic, industrial, and agricultural activities; and residential, commercial, industrial, agricultural, and recreational development projects that reduce the quality of habitat or decrease the quantity of habitat. For anadromous fish, sport and commercial fishing also affect fish populations over both the short- and long-term. The cumulative effects on some species and their habitat are widespread, adverse, long-term, and significant, and have resulted in the listing of these species as threatened.

Effects on Cultural Resources—No adverse impacts to cultural resources are expected from either the no action or the selected action to improve fish passage.

Cumulative Effects on Cultural Resources—The cultural sensitivity of the coniferous forest in the Lost Man Creek watershed occurs is very low because these areas were logged or affected by road construction, which very likely damaged or destroyed any cultural resources originally present. Although cultural resources that may occur in the vicinity of the Lost Man Creek watershed may be important cultural resources, no known significant cultural resources are located within the project area. No future actions are expected that have the potential for adverse impacts to cultural resources in this vicinity.

Other on-going and proposed activities in the parks that might affect cultural resources include fire management, watershed restoration outside the Lost Man Creek area, management of second growth forests and non-native plants, and maintenance and construction of trails and other facilities.

Cultural resource surveys are conducted prior to any work involving ground disturbance. Cultural resources in areas of known cultural sensitivity are protected by avoiding or minimizing ground disturbance. The NPS consults with affiliated American Indian groups and/or the SHPO/YTHPO as required on all projects that have the potential to affect cultural resources. No significant adverse effects to cultural resources are anticipated from any reasonably foreseeable park actions.

In addition, the selected action would not change the treatment and/or management of archeological resources in Redwood National Park. Cultural resources throughout the remainder of the Redwood National Park would be unaffected.

Effects on Visitor Experience and Visual Quality—Visitor experience and visual quality will be slightly improved under the selected action because the bridge that will replace the culverts will provide a more aesthetically pleasing experience than the present stream crossing. Visitor experience will also improve because the new bridge and trail surface will be safer, with handrails on the bridge and a level road surface without holes and slumps. Short-term adverse effects from trail closure will persist for about one month during construction.

Under the no action alternative, there would be no short-term adverse effects on visitors from trail closure. The adverse effects on visitors from trail closure due to eventual failure of the stream crossing would persist longer while the NPS procures and installs a bridge. As the road and crossing continue to deteriorate, the visitor experience and visitor safety would gradually worsen as the road surface develops more holes and slumps.

Cumulative Effects on Visitor Experience and Visual Quality—The selected action will ensure that a recreational trail continues to be available to park visitors. Other recreational opportunities in the vicinity include sport fishing in area rivers, especially the Smith, Trinity and Klamath Rivers, and the Pacific Ocean; water contact sports including sea kayaking, surfing, and whitewater boating; camping, hiking, biking and equestrian opportunities in other parts of RNSP, Six Rivers National Forest, BLM lands, and numerous state parks; scenery, wildlife viewing and photography in these public lands; and many additional recreational activities available on the north coast and inland areas.

Effects on Adjacent Communities—The selected action will have a minor long-term indirect economic benefit to local communities from providing a safe trail for biking and hiking that will attract recreational users to the area.

Cumulative Impacts on Adjacent Communities—It is not possible to describe all the past, present, and reasonably foreseeable actions that have affected or might affect communities adjacent to the parks, particularly the community of Orick. The most significant factor in the economy of Orick is the decline of timber-based economy following the establishment and expansion of Redwood National Park, gradual decrease in timber supply available to local mills, and increased regulation of timber operations to protect watersheds and endangered species. The NPS is providing technical assistance to the community of Orick, and participating with other public and private

entities for planning for watershed protection for Redwood Creek, including development of a community wastewater system.

Conclusions—As summarized above, the effects of the selected action have been considered and determined to be less than significant. These effects have also been considered under the criteria for significance listed in the Council on Environmental Quality regulations (40 CFR 1508.27) and found to be less than significant. Actions for which mitigation can be prescribed, the prescribed mitigation, and the responsible party are summarized in the following table. A park watershed restoration geologist and fish biologist will provide project oversight and supervision of excavation and instream work.

Summary of Adverse Effects on Resources and Mitigations

Resource	Effect	Mitigation/Responsible Party
Air Quality	Negligible short term adverse effects from vehicle emissions and dust	Vehicle maintenance emissions regulated to state standards (contractor)
Soils & Geological Resources	2,100 cubic yards of soils previously disturbed by logging and road construction	Bare soils mulched for erosion control (contractor)
Hydrology & Water Quality	Instream excavation to remove culverts and 2,100 cubic yards of road fill and accumulated sediment; BMPs to protect fish-bearing streams will avoid or minimize run-off into stream during & after excavation	Develop spill prevention plan (NPS); implement BMPs to reduce short-term adverse effects (contractor)
Floodplains & Wetlands	Long-term benefit to floodplain from restoration of stream channel; negligible adverse effects to riparian wetlands from removal of vegetation adjacent to culvert	Implement BMPs during operations; comply with SPP (RMS supervision, contractor)
Vegetation	1,500 sq.ft. (0.03 ac) affected; salvage for use as mulch; mulch and replacement of topsoil speeds natural revegetation	Salvage on-site vegetation and apply as mulch to slopes under direction of geologist (RMS supervision, contractor)
Wildlife	No mitigation prescribed for disturbance to species tolerant of on-going human disturbance; short-term noise disturbance during non-breeding season	Remove all food scraps and trash to avoid attracting scavengers and habituating wildlife to people and human food sources (NPS, contractor)
Sensitive Species	BMPs required during construction to protect fish from erosion into stream; long-term benefit restoring drainage and reducing erosion potential; project conducted outside noise restriction period established to avoid noise effects on threatened birds during nesting season	Monitor work for application of BMPs including work at low flow periods (RMS supervision), mulch slopes adjacent to streams (RMS supervision, contractor)
Visitor Experience &	Direct short-term effect on visitors	Visitor centers notified of trail

Resource	Effect	Mitigation/Responsible Party
Safety	from trail closure for one month; heavy equipment operations require standard safety precautions	closures (RMS supervisor); weekly press releases announce trail closures (NPS interpretation division); signs requiring hard hats and high visibility clothing in heavy equipment operations areas (NPS, contractor)

Non-Impairment of Park Resources and Values

Non-Impairment of General Watershed Functions and Resources—Some localized short-term adverse effects of culvert removal and channel restoration such as erosion and removal of riparian vegetation are unavoidable in order to reduce long-term threats from the existing culverts and road to hydrology, water quality, riparian resources and values, and threatened fish species. The short-term adverse effects on the stream system can be readily mitigated through accepted best management practices such as erosion control and timing of the project. More severe long-term adverse effects from not removing failing drainage structures under a no action alternative are considered unacceptable, particularly in the context of the legislation establishing and expanding Redwood National Park that directs the NPS to rehabilitate areas within the park “contributing significant sedimentation because of past logging disturbances and road conditions, and to the extent feasible, to reduce the risk of damage to streamside areas...” (16 USC 79j)

Non-Impairment of Air Quality—There will be negligible localized short-term adverse effects on air quality from dust and vehicle emissions. Vehicles will be licensed under California and federal emission standards. Air quality in the parks will return to very good to excellent condition after ground disturbance ceases to generate dust and equipment operations cease. The long-term effect of vehicle emissions and dust associated with park maintenance operations on the road is negligible. Therefore, the selected action will not impair air quality or air quality related values in the parks. The short-term localized adverse effects on air quality are acceptable.

Non-Impairment of Soils and Topography—Under the selected action, excavation of the stream crossing, channel, and associated road fill will affect about 0.2 acres of soils previously disturbed by the original road construction. The selected action will eliminate further erosion of the stream crossing and continued aggradation and sedimentation of the stream channel upstream; these adverse effects would continue under the no action alternative. The topography of the stream crossings will be restored to original channel shape and depth. Therefore, the selected action will not impair soils or topography in the parks and will eliminate or reduce impairment to soils and topography in the project area that resulted from construction of the logging roads and the stream crossing.

The adverse effects on soils under the selected action from removal of the culvert and associated road segment would not be significant because these soils are previously disturbed by the original road construction. These adverse effects on soils are acceptable because soils are a critical component of watersheds whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the park, and are identified in the park’s general management plan as being of significance.

Adverse effects on soils from chronic erosion of the stream crossing and aggradation of the stream channel upstream would continue under the no action alternative; these adverse effects are not considered significant because the soils were previously disturbed by original road construction. However, the adverse effects on soils under the no action alternative that could result from failure of the culvert and associated road segment could be significant depending on the extent of the failure. Failure of the culvert and associated road segment would contribute to the existing impairment of park watersheds. Therefore, these impacts on soils from culvert failure under no action would be unacceptable because soils are a critical component of watersheds whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the park, and are identified in the park's general management plan as being of significance.

Non-Impairment of Hydrology and Water Quality—Under the no action alternative, there would be continued adverse effects on water quality and hydrology of North Fork Lost Man Creek and Lost Man Creek during and following rain events large enough to cause erosion of stream banks that have been altered by previous logging and associated road construction. Water quality and hydrology in Lost Man Creek would be adversely affected by catastrophic failure of any of the stream crossing or the road. Water quality and hydrology are currently impaired from past logging and road-related erosion although the impairment is gradually lessening as watershed restoration projects are completed and vegetation regrows on soils exposed by road construction and clearcut logging. The no action alternative has the potential to worsen the impairment to water quality and hydrology that results from past logging and road construction. The adverse effects on hydrology and water quality from erosion and future failure of the stream crossing are unacceptable because hydrological functions including water quality are a critical component of watersheds whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the park, and are identified in the park's general management plan as being of significance.

The selected action will partially restore the hydrological pattern of Lost Man Creek downstream of the North Fork by excavation of road fill from the stream channel and restoration of topography to restore original drainage patterns. The selected action will result in short-term adverse effects on water quality in Lost Man Creek downstream from the project area from increased turbidity in first few years following excavation of the stream channel as small quantities of sediment remaining after excavation are flushed out in storm events. Potential adverse effects on water quality during excavation of stream crossings will be minimized through application of BMPs prescribed in the NOAA Fisheries RGP 12 Biological Opinion and the California Department of Fish and Game mitigation measures required for projects funded through the Fisheries Restoration Grant Program. Over the long-term, removal of road fill and sediment from the stream channel and moving road fill to a stable location where it will not erode into the Lost Man Creek will protect and improve water quality.

Therefore, the selected action will not impair hydrology or water quality in Lost Man Creek and will reduce the existing impairment from blockage of the channel of the North Fork Lost Man Creek and from chronic erosion. The selected action will reduce the potential for impairment to Lost Man Creek from eventual stream crossing failures but will have a negligible effect on reducing the impairment to hydrology and water quality in the mainstem of Redwood Creek.

The short-term adverse effects on water quality from removal of the culverts and associated road fill and emplacement of a bridge are unavoidable in order to prevent more severe adverse effects from failure of the culvert and road fill and are therefore acceptable. The short-term adverse

effects on water quality from erosion of small amounts of sediment remaining after excavation acceptable because good water quality is a critical component of watersheds whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the park, and are identified in the park's general management plan as being of significance.

Non-Impairment of Floodplains and Riparian Wetlands—The selected action will benefit the floodplain of Lost Man Creek downstream of the project area by restoring hydrological patterns upstream in the North Fork Lost Man Creek and by eliminating the potential for failure of the culvert and stream crossing that could deliver sediment directly into the floodplain in a major storm. Removal of fill from the stream channel will improve the hydrological functioning of the North Fork Lost Man Creek, which will benefit the riparian zones of Lost Man Creek immediately downstream of the project area. Therefore, the selected action will not impair floodplains or wetlands. Short-term adverse impacts from removal of about 1,500 square feet of riparian wetland vegetation are acceptable because of the small amount of vegetation will grow back quickly and because this removal is needed to avoid more serious adverse effects.

Non-Impairment of Vegetation Resources—The project will affect 0.03 acre of vegetation that has regrown in a road corridor. The seedbank in topsoil that was buried beneath road fill will be exposed in repositioned topsoil and will speed revegetation with local species. Native shrubs, alder, and Douglas-fir will re-establish on excavated areas in several years.

Therefore, the selected action will not cause further impairment to park plant communities or vegetation but it will not eliminate or reduce the impairment to the original plant communities caused by logging in the vicinity of the project area and other areas of the park prior to park establishment.

Non-Impairment of Wildlife Resources—Some wildlife species that occur in the project area will be adversely affected by noise and disturbance at work sites during heavy equipment operations, or loss of habitat from removal of vegetation. On-site vegetation removed by excavation will be used for mulch and will provide immediate shelter for small animals. All trash and human food will be removed daily from the project area to avoid habituating park wildlife to human food sources. Loss of habitat from vegetation removal will be a short-term adverse effect on small sedentary animals that cannot move out of work sites but the selected action will not affect any populations of wildlife or the long-term persistence of any wildlife species. The total area of wildlife habitat that will be affected by the project is less than 0.1 acre. Therefore, the selected action will not impair wildlife resources.

Non-Impairment of Rare, Sensitive, Threatened, and Endangered Species—NOAA Fisheries determined that the location and proposed timing authorized through the US Army Corps of Engineers RGP 12 will not affect the California Coastal Chinook salmon. NOAA Fisheries also determined that work conducted under RGP 12 is not likely to jeopardize the continued existence of the Southern Oregon/Northern California Coast coho salmon or Northern California steelhead, and is not likely to destroy or adversely modify designated critical habitat of these species. Therefore, the selected action will not cause impairment to threatened or endangered species.

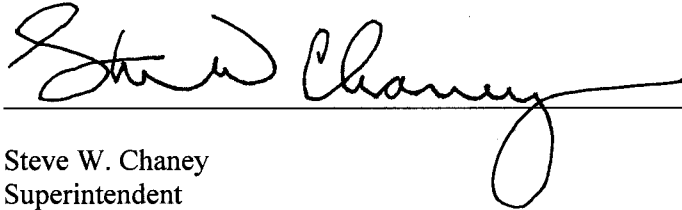
Non-Impairment of Cultural Resources—There are no historic properties that will be affected by the selected action. Therefore, the selected action will not impair cultural resources.

Basis for Decision

Based on the environmental assessment, analyses of issues and alternatives, together with consideration of public interest and the relation between public interest and laws, statutes, and regulations for managing NPS units, the ability of the mitigation measures to reduce or eliminate adverse impacts, and the concurrence of agencies that funded similar projects for restoration of salmonid habitat in California, the NPS will implement as its selected action the project described as Alternative 2 in the North Fork Lost Man Creek Bridge Environmental Assessment dated July 2009.

It is the determination of the National Park Service that the selected action for removal of culverts and associated road fill, and installation of a bridge across the North Fork of Lost Man Creek does not constitute a major federal action significantly affecting the quality of the human environment, nor is this project without precedent or similar to ones that normally require an environmental impact statement. The selected action to replace culverts with a bridge on about 60 feet of former logging road to improve passage for anadromous fish to upstream spawning areas and reduce the threat of erosion into the North Fork Lost Man Creek and Lost Man Creek will further the goals for watershed restoration and management of threatened and endangered species described in the 1999 GMP/FEIS and 2000 Record of Decision. Therefore, in compliance with the National Environmental Policy Act, the National Park Service will not prepare an environmental impact statement, and will proceed with implementation of the project as soon as practicable.

Recommended:

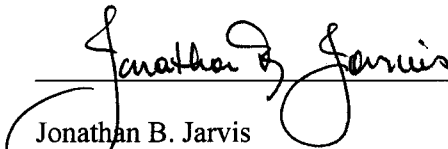


Steve W. Chaney
Superintendent
Redwood National Park

8/26/09

Date

Approved:



Jonathan B. Jarvis
Regional Director
Pacific-West Region

8/27/09

Date