

**Finding of No Significant Impact
Streelow Creek Fish Passage
Redwood National and State Parks
Humboldt County, California
July 2007**

This Finding of No Significant Impact (FONSI) should be attached to the *Streelow Creek Fish Passage Environmental Assessment* (EA) dated May 2007. This FONSI together with the EA constitute a complete record of the conservation planning and environmental impact analysis process for this proposal. No comments were received on 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 and replace them with a footbridge on an abandoned logging road that has been converted to the Streelow Creek Trail used by hikers and bicyclists in Redwood National Park. Replacing the culverts with a footbridge will improve habitat for threatened fish species. Several other failing drainage structures will be replaced and unstable road sections will be removed to prevent future damage to fish habitat.

The legislation establishing (PL 90-245) and expanding (PL 95-250) 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). This project is fully consistent with the legislative direction.

The Streelow Creek Fish Passage EA is tiered off the Redwood National and State Parks 1999 *Final General Management Plan/General Plan, Environmental Impact Statement / Environmental Impact Report* (GMP/EIS). The GMP directed that watershed restoration work within the parks should emphasize partial landform restoration with limited removal of minor roads that pose the greatest threat to the parks' resources.

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 roads and 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 Streelow Creek Project

The purpose of this project is to remove undersized damaged culverts, a failing log bridge, and unstable road fill from old logging roads that contribute to erosion and sedimentation of a stream occupied by salmonid fish. This action is needed to improve fish passage to upstream spawning areas, to control erosion from unstable road fill, and to restore watershed functions affected by failing drainage structures. The three culverts near the confluence of the North Fork and main

stem of Streelow Creek will be replaced with a trail bridge to ensure that the Streelow Creek Trail continues to provide a safe and enjoyable experience for hikers and bicyclists.

Selected Action

The selected action is Alternative 2: Improve Fish Passage, which is identified in the EA as the proposed action. There are no changes in actions, mitigations, or other key elements of the proposed action described in the EA.

Under the selected action, the NPS will remove three damaged undersized culverts at the trail crossing on the North Fork of Streelow Creek to improve passage to upstream spawning habitat for salmonids listed as threatened species and replace the culverts with a trail bridge to improve visitor experience and safety on the Streelow Creek Trail. The new trail bridge is a prefabricated wooden bridge 8 feet wide and 80 feet long that completely spans the active channel of the stream and can be installed without needing to excavate within the stream banks. The NPS will also remove 900 linear feet of road fill from a former logging road, a log stringer bridge and an earth-fill stream crossing to prevent their eventual failure, which would cause further damage to fish habitat on the North Fork of Streelow Creek. All excavated earthen material will be placed in stable locations near the work sites where the material will not erode into the stream. Under the direction of the NPS fish biologist who monitors the project, the log stringers and any large woody debris that might be within the earth-fill stream crossing will be placed in locations along the stream where they will provide fish habitat. The damaged culverts and wash rack will be removed and disposed with other similar materials from other work sites throughout the park. The trail will be closed from mid-September through mid-October.

Alternatives Considered in the Environmental Assessment

The May 2007 EA described two alternatives

- Alternative 1: No Action
- Alternative 2: Improve Fish Passage

Under the No Action alternative (Alternative 1), the NPS would perform regular but minimal maintenance of the existing culverts by periodically removing debris that accumulates at the culvert inlets and wash rack upstream of the culverts. Holes and slumps in the trail surface across the culverts would be marked as trail hazards to warn hikers and bicyclists and repaired if the trail becomes impassable. The log stringer bridge has never been repaired or received any routine maintenance because of its location on an unmaintained logging road that was abandoned after the area became part of the national park. Another stream crossing would continue to deteriorate until it fails completely.

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 has determined that Alternative 2 (the selected action) is the environmentally preferred alternative. This alternative will improve habitat for threatened salmonid fish by replacing damaged undersized culverts and a log stringer bridge that impede upstream passage to spawning areas. The selected action will also reduce the threat of erosion and sedimentation of stream and

spawning habitat by removing unstable segments of old logging roads and sediment that has accumulated in the stream channel behind undersized drainage structures.

The No Action alternative (Alternative 1) is not the environmentally preferred alternative because the culverts would continue to impede fish access to spawning habitat upstream. Furthermore, as the culverts continue to age, the potential for failure would increase. The logging roads adjacent to the stream would continue to erode gradually or eventually fail massively in a storm. Sediment would be delivered into streams either slowly through gradual erosion or in massive slope and stream-crossing failures. On road segments high above streams or in between stream crossings, the risk of road-related landslides that destroy vegetation would increase. The sediment delivered into streams would move downstream and further degrade the quality of spawning habitat for threatened coho and Chinook salmon and steelhead trout.

Public Involvement

Watershed restoration was a major topic in the 1999 GMP/EIS, which received full public review beginning with scoping in 1996 and continuing through 2000, when the signed Record of Decision was distributed to everyone who commented on the draft EIS. In June 2006, the NPS released an environmental assessment for a more extensive watershed restoration project in Lost Man Creek, a different tributary of Prairie Creek located a few miles east of the Streelow Creek project site. Comments on the Lost Man Creek project expressed support for watershed restoration projects that reduce sediment threats to protect water quality and improve habitat for endangered species, especially salmonids.

This project is similar to the watershed restoration project that is underway in Lost Man Creek although the Streelow Creek project is on a much smaller scale. Public comment received on the watershed restoration proposal in the 1999 GMP/EIS, the Lost Man Creek restoration project, 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 preliminary scoping was conducted specifically for this project.

The EA was available for review from May 17 through June 22, 2007. Letters were sent to 31 local elected officials; federal, state, and local agencies; organizations; and individuals announcing the availability of the EA. Copies of the EA were sent to four local libraries. A press release was sent to the park media list, which includes local newspapers, radio, and television stations. In 2006, a reporter for the local newspaper of record visited the project site as part of a tour of sites included in the parks' integrated watershed strategy covering all of Redwood Creek. There was no media interest in this specific project although other more visible local stream restoration projects have been covered recently in local newspapers. All letters and the press release provided the internet address for the park website where the EA was posted. 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. 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.*). The NOAA Fisheries RGP 12 Biological Opinion analyzed the effects of the RGP 12 authorized activities on six populations of threatened salmonids occupying coastal streams in northern and central California. The NOAA Fisheries' RGP 12 Biological Opinion provides section 7 consultation coverage for the potential effects to listed salmonids from the North Fork of Streelow Creek fish passage improvement project.

NOAA Fisheries determined in the May 21, 2004 Biological Opinion that the location and proposed timing authorized through the RGP would not affect the California Coastal Chinook salmon. NOAA Fisheries also determined that the proposed RGP 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.

NPS wildlife biologists determined that no suitable habitat or designated critical habitat for northern spotted owls or marbled murrelets will be affected by the proposed 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 and the NPS did not consult with the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act.

Cultural Resource Consultations

The NPS initiated government-to-government consultations on the proposal with the Yurok Tribe in May 2006 via a letter informing them of the proposed project and requesting information about cultural resources that might be affected by the proposal. The contract archeologists also solicited comments about the proposal from local tribes as part of the survey process. No comments were received on the proposal.

The NPS notified the SHPO under Section 106 of the National Historic Preservation Act (35 CFR 800) and under the 1995 Programmatic Agreement Among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, Section V that an environmental assessment was being prepared and outlined the project in a letter dated May 26, 2006. The SHPO did not respond to the letter describing the NPS determination that the appropriate finding for this project is No Adverse Effect, with conditions outlined in the NPS recommendations. No response from the SHPO is assumed to be concurrence with the proposed action, especially when surveys indicate that no historic resources will be affected by the proposed action.

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 that are known to be present and 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 in active construction areas if needed. Heavy equipment is 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.

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, about 4900 cubic yards of soil will be excavated over an area of about 9,280 square feet (0.21 acres) to remove culverts, the log stringer bridge and the associated unstable road segments. All soils affected by the project are previously disturbed from original road construction and logging. The selected action will reduce the potential for landslides caused by failing roads 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 effect on soils and topography is minor because of the very small area of road segment that will be excavated.

Cumulative Effects on Soils and Topography—The selected action will have a minor cumulative benefit to soils and topography in the Streelow Creek watershed, and no effect on soils or topography in other watersheds. 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 basin within and upstream of the park. About 445 miles of roads and 3,000 miles of skid trails were included within the national park boundaries. Removal of a few hundred feet of abandoned logging road and three stream crossings under the proposed action would have negligible short- or long-term benefits to soils

and topography in the watershed as a whole, and minor benefits to soils and topography in the project area over the long-term. There would be negligible benefits to the main stem of Redwood Creek and Redwood Creek estuary and minor benefits to Prairie Creek from the proposed action. Over the very long-term, as failing roads within the park are removed, roads upstream and outside the park are maintained, and effective erosion control is implemented prior to major storms, there would be a major benefit to soils and topography in the Redwood Creek basin from preventing unnaturally high levels of erosion. The long-term benefit to the Redwood Creek estuary from reducing the influx of sediment within the entire Redwood Creek basin would be a moderate benefit to estuary functioning because the Redwood Creek levees would continue to alter the hydrology and functions 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*.

The selected action will have short-term adverse effects on water quality from increased turbidity in the North Fork of Streelow 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 4900 cubic yards of fill from and immediately adjacent to the stream channel; and long-term benefits from reducing erosion potential associated with about 2500 cubic yards that could enter streams 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 Streelow Creek from removal of failing undersized culverts and from removing accumulated sediment. 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.

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.

Streelow Creek is a tributary of Prairie Creek, which is the largest tributary of Redwood Creek. Both Streelow 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 in Lost Man Creek is consistent with the recommendations of the TMDL 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 (which is located within the park) by implementing the selected action in the North Fork of Streelow 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 of Streelow Creek would be negligible because of the small amount of sediment removed under the proposed 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 of Streelow Creek to improved conditions in Redwood Creek would be negligible in comparison to the magnitude of adverse effects throughout the basin.

Effects on Floodplains and Wetlands—There are no well-developed floodplains in the project area because the area has steep slopes and confined stream channels. Floodplains are present lower in the drainage below the project area along the main stem of Streelow Creek and along Prairie Creek.

The short-term effects on riparian wetlands from the selected action will be negligible to minor and adverse from disturbance to the streambanks and removal of 1500 square feet of riparian vegetation. This adverse effect would be negligible because the riparian understory vegetation would recover in one to two growing seasons, and all the riparian vegetation present has regrown following the original disturbance from road construction and logging.

There will be an immediate benefit to the floodplain of Streelow Creek at its confluence with Prairie Creek and a long-term benefit to riparian wetlands along Streelow Creek from removal of undersized drainage structures and restoration of the original stream channel. This benefit will 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 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— Under the proposed action, less than 10,000 square feet of vegetation (about ¼ acre) that has regrown following the original disturbance from road construction and logging will be cut or grubbed for excavation of culverts, stream crossings, and adjacent road corridor. The largest trees that will be cut are red alders and Douglas-fir less than 18 inches in diameter at breast height. No large residual old-growth trees will be removed. The effects on vegetation are short-term, adverse, and negligible because all vegetation to be removed has regrown after logging and will quickly reestablish in the newly excavated soils.

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 10,000 square feet (less than ¼ acre) 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 wildlife species that are present have been affected by the high degree of disturbance that has occurred on site and will recolonize newly excavated areas as vegetation regrows in 1-10 years.

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.

NPS wildlife biologists determined that no suitable habitat or designated critical habitat for spotted owl or marbled murrelets will be affected by the proposed 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 through out 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 reattain 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 historic resources listed or eligible for listing on the National Register of Historic Places will be affected by the selected action.

Cumulative Effects on Cultural Resources—Other on-going and proposed activities in the parks that might affect cultural resources include fire management, watershed restoration, management of second growth forests and non-native plants, and maintenance and construction of trails and other facilities. The cultural sensitivity of the coniferous forest where watershed restoration and second growth forest management will occur is very low because these areas were logged or affected by road construction, which very likely damaged or destroyed any cultural resources originally present.

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 under the 1995 PA 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.

Effects on Visitor Experience and Visual Quality—Visitor experience and visual quality will be improved under the selected action because the trail bridge that will replace the culverts is a wooden structure that will blend into the surrounding area and provide a more aesthetically pleasing experience than the present stream crossing. Removing the broken trash rack that is half-buried in accumulated sediment and the rusted, bent culverts will also improve visual quality. Visitor experience will also improve because the new bridge and trail surface will be safer, with handrails on the bridge and a level trail surface without holes and slumps. Short-term adverse effects from trail closure will persist for about one month during construction.

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 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.

Conclusion—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. All work will be performed by park staff and all mitigations are the responsibility of the RNSP-NPS maintenance or resource management and science (RMS) divisions. The maintenance division (M) will provide the heavy equipment and the operator who will conduct the excavations. An RMS division 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

<i>Resource</i>	<i>Effect</i>	<i>Mitigation/Responsible Party</i>
Air Quality	short term adverse effects from vehicle emissions	park vehicle maintenance emissions regulated to state standards (M)
Soils & Geological Resources	less than ¼ acres of soils previously disturbed by logging and road construction	mulching for erosion control (RMS supervision, M implementation)
Hydrology & Water Quality	instream excavation to remove culverts and accumulated sediment; BMPs to protect fish-bearing streams will avoid or minimize run-off into stream during & after excavation; spill prevention plan (SPP) required	develop SPP (RMS); implement BMPs to reduce short-term adverse effects (RMS supervision, M implementation)
Floodplains & Wetlands	adverse effects to riparian wetlands from removal of 1500 ft ² vegetation adjacent to culverts and fill from stream channels	implement BMPs during operations; comply with SPP (RMS supervision, M implementation)
Vegetation	vegetation previously disturbed by logging; salvage on-site vegetation 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, M implementation)
Wildlife	no mitigation prescribed for disturbance to species tolerant of on-going human disturbance; short-term noise disturbance; removal of less than ¼ acre of vegetation (habitat)	remove all food scraps and trash to avoid attracting scavengers and habituating wildlife to people and human food sources (RMS, M)
Sensitive Species	BMPs required during construction to protect fish from erosion into stream; long-term benefit restoring drainage and reducing erosion potential	monitor work for application of BMPs including work at low flow periods (RMS), mulch slopes adjacent to streams (RMS supervision, M implementation)

<i>Resource</i>	<i>Effect</i>	<i>Mitigation/Responsible Party</i>
Visitor Experience & Safety	direct short-term effect on visitors from trail closure for one month; heavy equipment operations require standard safety precautions	visitor centers notified of trail closures (RMS); weekly press releases announce trail closures (NPS interpretation division); signs requiring hard hats and high visibility clothing in heavy equipment operations areas (RMS)

Non-Impairment of Park Resources and Values

Non-Impairment of Air Quality—Air quality will be adversely affected primarily by dust raised from excavation and vehicle emissions. Dust will be negligible because of the small area that will be excavated. 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 associated with park maintenance operations on road and trail is negligible. Therefore, the selected action will not impair air quality or air quality related values in the parks.

Non-Impairment of Soils and Topography—Approximately 1/4 acre of soils will be affected by excavation of stream crossings and associated slopes. These soils were previously disturbed by the original road construction and by logging. The selected action will protect soils from further disturbance caused by erosion and failure of unstable slopes and will uncover and return topsoil to more or less its original position along the short segment of road to be treated. The original topography of the stream crossings will be fully 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 crossings.

Non-Impairment of Hydrology and Water Quality—Streelow Creek is a tributary of Prairie Creek. Prairie Creek is one of the largest tributaries of Redwood Creek and the last major tributary to join Redwood Creek at their confluence about four miles upstream of the Pacific Ocean. Redwood Creek has been identified as a sediment-impaired and temperature-impaired stream by EPA and as water-quality limited due to clean sediment loading by the North Coast Regional Water Quality Control Board. The Redwood Creek TMDL for sediment established by the EPA is used as a reference to ensure that watershed restoration in Lost Man Creek is 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. The position of Prairie Creek low in the Redwood Creek watershed means that restoration in Streelow Creek contributes less to the reduction of sediment in the mainstem of Redwood Creek than restoration of other tributaries higher in the drainage. The proposed restoration work in Streelow Creek is fully consistent with the recommendations in the Redwood Creek TMDL for improving water quality through reduction of sediment related to human activities, although the small volume of sediment that will be removed will have a negligible benefit to restoration of Redwood Creek.

Potential adverse effects on water quality during excavation of stream crossings will be avoided through 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

Salmonid Restoration Grant Program. The selected action will result in short-term adverse effects on water quality 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. In the long-term, restoration will protect and improve water quality from removing fill from the North Fork of Streelow Creek and moving road fill to a stable location where it will not erode into the stream.

The selected action will restore the hydrological pattern of the North Fork of Streelow Creek that existed prior to the construction of the roads. The project area will be considered "hydrologically transparent" following the excavation of road fill from stream channels and restoration of topography that will restore original drainage patterns. Therefore, the selected action will not impair hydrology or water quality in Streelow Creek; will reduce the potential for impairment to the North Fork of Streelow Creek from eventual stream crossing failures and from chronic erosion along the stream channel; but will have a negligible effect on reducing the sediment impairment in the Redwood Creek estuary.

Non-Impairment of Floodplains and Riparian Wetlands—The steep, narrow stream channels in the project area do not have well-developed floodplains. The selected action will benefit the floodplain of Streelow Creek and Prairie Creek downstream of the project area by restoring hydrological patterns upstream and eliminating the potential for culvert failures that could deliver sediment into the floodplain in a major storm.

About 1500 square feet of riparian wetlands along the North Fork of Streelow Creek will be adversely affected during excavation of stream crossings. Riparian vegetation will regrow along streams within a few years after excavation. Removal of fill from the stream channel will improve the hydrological functioning of the North Fork of Streelow Creek, which will benefit the riparian zones of Streelow Creek downstream of the project area. Therefore, the selected action will not impair floodplains or wetlands.

Non-Impairment of Vegetation Resources—The project area was logged between the 1950s and the 1960s. The original vegetation community was impaired by logging. The existing vegetation is second-growth forest and shrubs that have regrown following logging, with scattered individual residual trees that were not cut. The selected action will redisturb the second-growth vegetation on less than ¼ acre. No trees larger than 18" diameter at breast height will be removed. 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 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 ¼ acre. Therefore, the selected action will not impair wildlife resources.

Non-Impairment of Rare, Sensitive, Threatened, and Endangered Species—The NPS determined that the selected action will not affect any listed terrestrial species or their habitat. 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 *Streelow Creek Fish Passage Environmental Assessment* dated May 2007.

It is the determination of the National Park Service that the selected action for removal of culverts, a portion of an associated logging road, and installation of a footbridge across the North Fork of Streelow 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 will further the goals for visitor use in this area called for in the 1996 Finding of No Significant Impact for the Davison Ranch Development Concept Plan/Environmental Assessment and in the 1999 GMP/EIS 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 program as soon as practicable.

Recommended: Steve W. Chaney 8 JUL 2007
Steve W. Chaney Date
Superintendent
Redwood National Park

Approved: Jonathan B. Jarvis 7/10/07
Jonathan B. Jarvis Date
Regional Director
Pacific-West Region