Finding of No Significant Impact
Greater Mill Creek Ecosystem Restoration Project
Redwood National and State Parks
Del Norte County, California
June 2020

Introduction

The National Park Service (NPS) prepared an Environmental Assessment (EA) as part of a joint Initial Study/Negative Declaration and EA (ISND/EA) for the Greater Mill Creek (GMC) Ecosystem Restoration Project (the Proposed Action or Selected Action) within Redwood National and State Parks (RNSP). This Finding of No Significant Impact, together with the Draft ISND/EA (dated April 2019) and Final ISND/EA (dated October 2019), constitute a complete record of the conservation planning and environmental impact analysis process for this proposal. Also attached, pursuant to the NPS Management Policies, is the park manager's determination that the Proposed Action will reduce the existing impairment to Redwood National Park forests and no impairment to other park resources will result from the Proposed Action.

NPS will implement the Proposed Action, which was identified and analyzed in the ISND/EA as the NPS preferred alternative. No comments were received that required changes to the Proposed Action and only one comment was received that required additions to the ISND/EA, reflecting a project that is generally well understood and supported by agencies, stakeholders, organizations, and the general public throughout the local area and region. Two alternatives were evaluated in the ISND/EA: the Proposed Action and the No Action Alternative.

There is a history of legislation applicable to management of second-growth forests in the project area. Redwood National Park was established by Congress in 1968 to "preserve significant examples of the coastal redwood… forests and the streams and seashores with which they are associated for purposes of public inspiration, enjoyment, and scientific study" (Public Law 90-545). The legislation that established Redwood National Park directed NPS to minimize human-induced impacts to terrestrial and aquatic resources within the park (Public Law 90-245 Section 3[e]). In 1978, Congress expanded the national park to encompass 50,000 acres in the lower one-third of the Redwood Creek watershed that had been privately owned timber lands. The 1978 expansion legislation authorized NPS to implement a program of watershed rehabilitation within and upstream of the park and directed NPS to develop a comprehensive general management plan (GMP) with objectives, goals, and proposed actions designed to assure the preservation and perpetuation of a natural redwood forest ecosystem (Public Law 95-250 Section 104[b][1]). Since 1978, NPS has been conducting watershed restoration activities in accordance with this legislation.

Del Norte Coast Redwood State Park (DNCRSP) is one of four parks that makes up RNSP, which is jointly administered by the California Department of Parks and Recreation (CDPR) and NPS to more efficiently protect resources and serve visitors. The agencies worked together to prepare the RNSP *1999 Final General Management Plan/General Plan* to guide joint management of the parks for 15 to 20 years (GMP/GP[1]). The original DNCRSP, founded in 1927, more than doubled in size in 2002 with the addition of the 25,000-acre Mill Creek property known as the Mill Creek Addition (MCA). The MCA was acquired to restore late-seral forest characteristics and associated natural functions that maximize benefits to the salmonid species and wildlife associated with late seral forest. In 2005, Congress approved the expansion of the RNSP boundary and the GMP/GP was amended in 2010 to include the MCA (CDPR 2010).[2] The General Plan Amendment established a comprehensive framework that directs ongoing management activities and projects, determines appropriate public uses, and guides future development decisions in the MCA.

The Proposed Action is consistent with the direction in the GMP/GP approved through the 2000 Record of Decision, which directs that forest restoration activities in the park emphasize use of silvicultural methods in second-growth forests to re-attain old-growth characteristics in the shortest time possible, and that watershed restoration activities in the parks emphasize landform restoration through removal of abandoned logging roads that pose the greatest threat to park resources. Management goals in the GMP/GP that are relevant to the Proposed Action include protecting and preserving the natural resources of the parks and restoring lands, ecosystems, and processes that have been altered by modern human activities. Natural resource management and protection strategies from the GMP/GP that guide forest restoration include supporting the perpetuation of ecosystem processes and components, including the redwood forest ecosystem as the prime RNSP resource, and restoring and maintaining RNSP ecosystems as they would have evolved prior to European American settlement of the region in 1850.

It is NPS policy to strive to restore the integrity of park resources that have been damaged or compromised in the past, per the Management Policies 2006, which allow NPS intervention in natural biological and physical processes to restore natural ecosystem functioning that has been disrupted by past or ongoing human activities.

In 2005, the Department of the Interior published a final rule (48 Code of Federal Regulations [CFR] 1437 and 1452) under the authority found in the NPS Organic Act (16 United States Code 1) outlining procedures to allow service contractors the option to remove woody biomass by-products generated as a result of NPS land management activities whenever ecologically appropriate.

[1] NPS/CDPR (National Park Service and California Department of Parks and Recreation), 1999. *General Plan/General Management Plan, Redwoods National and State Parks, Humboldt and Del Norte Counties, California.* Available at: https://www.parks.ca.gov/?page_id=24851.

[2] CDPR, 2010. *Del Norte Coast Redwoods State Park Final General Plan Amendment/Environmental Impact Report, Mill Creek Addition.* Available at: https://parks.ca.gov/pages/21299/files/mill_creek_final_gpa_08_10_11.pdf.

Ecological benefits of removing woody biomass include improved forest health, wildlife habitat, and watershed protection.

Purpose and Need for Ecosystem Restoration

The purpose of the Proposed Action is to rehabilitate the GMC watershed and restore ecosystem processes that have been degraded by historical, pre-park land use. Rehabilitation would be accomplished through thinning second-growth forests to reduce stand density and alter species composition to promote growth of remaining trees and understory vegetation, and development of multi-story canopy; maintaining sensitive plant communities; managing invasive species and pathogens; reducing erosion and sedimentation into streams; restoring instream habitat complexity; and managing vegetation within riparian corridors. These actions are needed to build resiliency through accelerating development of forest characteristics more typical of late-seral forests, reducing fire hazards and chronic sediment inputs to streams, and enhancing habitat for aquatic and terrestrial species.

NPS has identified the following project objectives:

- Vegetation Management
  - Forest restoration objectives: create conditions to put impaired forests on a trajectory that expedites the development of late-seral forest structure; protect and connect existing, fragmented old-growth forest; create and buffer habitat for threatened, endangered, and sensitive species as appropriate given the historic range of habitat conditions; implement treatments that contribute to the desired species composition and vegetation structure while considering the historical range of variability and the resiliency needed to face future challenges such as climate change and altered fire regimes; and reduce the potential for large and unnaturally high-intensity wildfires.
  - Uncommon and sensitive natural community objectives: control conifers and other vegetation encroaching into uncommon and sensitive natural communities where they would not normally occur; facilitate the expansion of underrepresented habitats to more closely resemble the extent that existed prior to logging and fire exclusion; and protect and manage sensitive plant populations and natural communities in the GMC area, creating additional habitat and buffering existing habitat for special-status plant species.
  - Non-native plant and pathogen management objectives: prevent the expansion or new establishment of invasive non-native plant and pathogen populations within the GMC area; prioritize control efforts of existing invasive non-native plant species based upon their potential to spread, especially into sensitive and uncommon habitats, and the feasibility of their successful control; and control the spread of non-native pathogens.

  - Cultural vegetation management objectives: provide for the protection, preservation, and management of culturally important plant communities; and reestablish and maintain the relative prevalence of savannas and other uncommon habitat types that support culturally significant species that existed prior to European American contact.
- Aquatic Restoration
  - Improve fish habitat, restore floodplain function, and expand and improve riparian forest.
- Road Removal
  - Reduce erosion and sediment delivery from existing infrastructure into streams, reduce mass wasting, reestablish natural stream morphology, restore surface and shallow subsurface hydrology, restore stream function, and reduce terrestrial habitat fragmentation.

Selected Action

The Selected Action is the Proposed Action, or the GMC Ecosystem Restoration Project. There are no changes to the description of the Proposed Action as presented in the ISND/EA, except for the minor change to the dates for which raptor nesting surveys would be conducted, as noted in PSR-BIO-8 in the Final ISND/EA.

Under the Proposed Action, NPS is proposing to complete forest and aquatic restoration and road removal activities over 34,080 acres within the GMC watersheds. Restoration activities would occur in phases over time. Forest restoration would entail forest thinning to reduce stand density and enhance forest health using three operational methods: lop and scatter, biomass removal, and mastication. Other vegetation management actions include snag creation, crown manipulation, manual removal, tree planting, complete conifer removal, and invasive species management. The Proposed Action would include the removal of logging roads and related road infrastructure that threaten aquatic resources through the recontouring of these disturbed areas to pre-logging conditions. The construction of approximately 2.5 miles of temporary roads would be required, but these roads would be removed after treatment. Finally, proposed aquatic restoration would include placement of large wood in streams. These actions are needed to accelerate development of forest characteristics more typical of late-seral forests, prevent chronic and catastrophic sediment inputs to creeks, and enhance habitat for populations of aquatic and terrestrial species.

Summary of Adverse Effects on Resources and Project Requirements
GMC Ecosystem Restoration Project

Resource	Effect	Project Requirement (Responsible Party)
Air Quality	Minor temporary localized dust and vehicle emissions during implementation. Potential for reducing long-term emissions of air pollutants by lessening the incidence and severity of fires and reducing fugitive dust from removing unpaved roads.	Applying water and grading restrictions to reduce dust. Proper equipment maintenance. Restrictions on vehicle idling. (Contractor)
Greenhouse Gas Emissions	Short-term GHG emissions from use of diesel- and gas-powered equipment and forest thinning. Restored project area will be more diverse, resilient, and robust in the long term.	Proper equipment maintenance. Restrictions on vehicle idling. (Contractor)
Geology and Soils	Minor temporary erosion associated with forest thinning, culvert replacement, and road removal activities. Moderate benefit from reduced erosion potential from historic logging road removal.	Implementation timing restrictions. Mulching exposed soils. General erosion control measures. Avoiding unstable areas. Requirements for when to consult with an earth sciences/physical science professional. Implementing new landing and winterization requirements. (NPS Geologist and Contractor)
Hydrology and Water Quality	Short-term likelihood of water quality impacts from increased turbidity from forest thinning, culvert replacement, and road removal activities. Minor temporary wetland impacts during road reoccupation and removal and large wood placement. Moderate benefit to hydrology from road removal. Minor benefit from reducing sediment input into wetlands and creating additional wetland and riparian areas from culvert and road removal.	Implementation timing restrictions. Mulching exposed soils. General erosion control measures. Implementing riparian buffers, water drafting requirements, and drainage structure maintenance requirements. Monitoring stream crossings. Preparing and implementing a spill prevention plan. Requirements for equipment decontamination. Avoiding trees contributing to bank stability. Isolating in-water work areas. (NPS Geologist and Contractor)
Biological Resources	<u>Vegetation:</u> Minor impacts on young dense redwood, Douglas-fir, tanoak, Sitka spruce, and alder forests from thinning. Long-term benefits from improving overall forest health.	Conducting pre-implementation surveys for special-status plants. Buffers to avoid special-status plants. (Contractor and NPS Biologist)

Resource	Effect	Project Requirement (Responsible Party)
	Fish: Minor impacts from increasing sediment delivery to streams that support special-status fish during and immediately following implementation. Long-term benefits from improving fish passage at culverts, removing legacy roads and stream crossing, and improving habitat conditions from large wood placement.	Isolating in-water work areas. Implementation timing restrictions. Implementing a fish rescue and relocation protocol, equipment exclusion zones, and water drafting requirements. Following all Endangered Species Act requirements. Mulching exposed soils. Reusing large wood encountered for aquatic restoration. (Contractor and NPS Biologist)
	Amphibians: Minor impacts from implementation activities occurring in winter months.	Conducting pre-implementation surveys for foothill-yellow legged frog. Implementation timing restrictions. Isolating in-water work areas. Implementing equipment exclusion zones. Following all Endangered Species Act requirements. Mulching exposed soils. (Contractor and NPS Biologist)
	Birds: Minor impact from implementation activities affecting bird habitat and causing noise disturbances. Long-term benefits from the accelerated development of late successional conditions and improved nesting and foraging habitat.	Implementation timing restrictions. Conducting bird surveys and implementing buffers or other restrictions. Retaining wildlife trees. Following all Endangered Species Act requirements. (Contractor and NPS Biologist)
	Mammals: Negligible short-term impacts during implementation. Long-term benefits from encouraging large trees with hollows, snags, and complex structure and recruiting habitat fragmentation.	Retaining portions of intermediate trees or snags and the largest trees. Avoiding old-growth trees and wildlife trees with cavities, hollows, and snag tops.
Cultural Resources	Potential ground disturbance from road removal activities and ground-based and skyline forest thinning operations.	Conduct historical and archaeological resources surveys. Suspend work for inadvertent discoveries. Establish buffers around archaeological resources. Aerial suspension removal requirements within culturally sensitive areas. (Contractor and NPS Cultural Resources Specialist)
Recreation	Short-term access restrictions on some hiking, biking, and equestrian trails during implementation.	

Resource	Effect	Project Requirement (Responsible Party)
Aesthetics	Minor impacts on scenic quality during and immediately after implementation. Minor long-term benefit from increasing the park's aesthetic value.	
Socioeconomics	Negligible short-term impacts on Crescent City community during implementation. Minor short-term benefit from increased employment opportunities. Minor long-term benefit from increased tourism.	

Modifications to the Selected Action

The Draft ISND/EA described the road extension, reoccupation, and removal activities to be undertaken as part of the Proposed Action. Since that time, it has become clear that the Proposed Action will require minor reoccupation beyond that identified in the Draft ISND/EA in the form of drainage reconstruction (eight culvert replacements) on existing open roads that access restoration areas. These permanent administrative roads were previously identified as a CDPR maintenance program responsibility. However, because the drainage reconstruction and use of these roads is also a prerequisite for implementation of the Proposed Action, the project description is modified to incorporate reoccupation of these additional roads.

The potential for environmental impacts associated with the reoccupation of abandoned or unmaintained logging roads (whether for temporary or permanent administrative purposes) was fully evaluated in the Draft ISND/EA. The project description as presented in the Draft ISND/EA included the replacement of hundreds of culverts; therefore, the addition of eight culverts is negligible and would not increase potential environmental impacts. All the project requirements would apply to the reoccupation of these additional administrative roads and the impact determinations presented in the Draft ISND/EA remain accurate with this addition. This addition was incorporated into the Endangered Species Act Section 7 and National Historic Preservation Act consultations completed for the Proposed Action.

Alternatives Considered in the ISND/EA

The April 2019 ISND/EA considered two alternatives:

- **Proposed Action: GMC Ecosystem Restoration Project.** Under the Proposed Action, vegetation management, aquatic restoration, and road removal activities would occur throughout the approximately 34,080-acre project area over the course of the next 30 years.

- **No Action Alternative.** Under the No Action Alternative, large-scale vegetation management activities to accelerate the development of old-growth characteristics would not occur, sensitive plant communities would not be maintained; invasive species and pathogens would not be managed; instream habitat and riparian corridors would not be restored or reestablished; and road removal/repair would not occur to reduce erosion and sedimentation into streams. Within the project area, existing vegetation conditions would change on their current trajectory, existing abandoned logging roads would remain, and fill material would remain in streams. In other portions of the project area, ecosystem restoration projects could occur on a project-by-project basis. Regular monitoring and maintenance activities would continue as they historically have throughout the project area.

Preliminary Options Considered and Dismissed

NPS considered a number of options to restore ecosystems in the project area, but determined that the options either would not meet the purpose and need for the Proposed Action or would be inconsistent with the GMP/GP. Preliminary options considered but dismissed include the following:

- **Lop-and-Scatter Only.** A lop-and-scatter only alternative would involve lop-and-scatter operations throughout the entire project area, with no biomass removal. This alternative was dismissed because it would increase fire hazard from increased fuels on the ground and would prohibitively increase the costs of restoration. It would not meet management objectives for forest restoration or fire management in the project area and was not carried forward for full analysis.
- **Low-Intensity Thinning from Below.** A basal area reduction of 25 to 30% (low-intensity thin from below) was considered. Results from past thinning efforts in the project area show that thinning from below would not release the dominant and co-dominant trees because this method concentrates on cutting trees in the intermediate and suppressed crown classes. Low-intensity thinning from below would not generate the growth response desired to accelerate the development of old-growth characteristics in as short a time as the Proposed Action. Therefore, this alternative would not meet the purpose and need and was not carried forward for full analysis.
- **Removal of Crossings Only (on NPS Land).** This alternative would involve removing blocked stream crossings but retaining all roadways in the project area. It would reduce the amount of fill removed as part of partial road removal activities; however, it would leave in roadways that would continue to erode and cause sedimentation issues in the watershed. Therefore, this alternative would not meet the purpose and need and was not carried forward for full analysis.
- **Reduced Project Area (on CDPR Land).** CDPR and NPS considered an alternative consisting of a smaller project area, including only Phase 1. A smaller project area would not accomplish

the stated ecosystem restoration objectives; therefore, this alternative was not carried forward for full analysis.

Environmentally Preferable Alternative

The Council on Environmental Quality's (CEQ's) National Environmental Policy Act (NEPA) regulations and the NPS NEPA guidelines require that "the alternative or alternatives which were considered to be environmentally preferable" be identified (40 CFR 1505.2). The CEQ defines "environmentally preferable" as "the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources." The environmentally preferable alternative is based on an evaluation of the alternative using the criteria in Section 101 of NEPA, as follows:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
- Achieve a balance between populations and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- Enhance the quality of renewable resources and approach maximum attainable recycling of depletable resources.

The Proposed Action is the environmentally preferable alternative because, overall, it would best meet the requirements in Section 101 of NEPA. Compared with the No Action Alternative, it more effectively fulfills the responsibilities of each generation as trustee of the environment for succeeding generations. While the No Action Alternative would result in fewer short-term implementation-related impacts than the Proposed Action, it would also maintain the current level of chronic legacy effects and degraded conditions of previous timber and road management actions. The Proposed Action would accelerate the development of late-seral forest characteristics more quickly than the No Action Alternative.

Public Involvement

Public scoping for the Proposed Action was conducted from August 9 through September 7, 2018. To initiate the public scoping process, NPS sent a brochure describing the planning process, purpose

and need, alternatives under consideration, and general description of the Proposed Action to 102 recipients, including individuals, agencies, and organizations. The brochure was also emailed to 62 addresses. During the public scoping period, two public scoping meetings were held. The first was held at the Crescent Fire Protection District in Crescent City, California, on August 22, 2018, and the second was held at the Arcata Community Center in Arcata, California on August 23, 2018. Both meetings presented information about the purpose, need, and objectives of the Proposed Action in an open-house format. Members of the public were able to submit comments by mail, in person at the meetings, or electronically at the NPS Planning, Environment, and Public Comment (PEPC) website (https://parkplanning.nps.gov/GreaterMillCreek). Comments were received from a total of seven individuals, agencies, and organizations through the public scoping process. Comments primarily related to the following: requesting details of the project description; voicing support for the Proposed Action; suggesting the addition of out-of-scope elements to the Proposed Action; and suggesting that NPS and CDPR coordinate and consult with organizations as part of the Proposed Action.

The joint Draft ISND/EA was made available for a 30-day public review at the reference desks of three Humboldt County Library branches (Eureka, Arcata, and McKinleyville), the Humboldt State University Library, and the Del Norte County Library in Crescent City. It was also available at the public information desks of the CDPR Northern Service Center, CDPR North Coast Redwoods District Headquarters office, RNSP Headquarters office, Thomas H. Kuchel Visitor Center, and NPS South Operations Center, as well as on the NPS website (http://parkplanning.nps.gov/greatermillcreek) and CDPR website (https://www.parks.ca.gov/?page_id=980). NPS and CDPR sent 102 letters and 79 emails announcing the availability of the document for review to federal, tribal, state, and local agencies; elected officials; organizations, businesses, and individuals. Hardcopies of the Draft ISND/EA were also provided to select agencies and organizations. A press release was sent to the Redwoods National Park media list, which includes local and regional newspapers, radio, and television stations. A separate notice was published in the Del Norte Triplicate. All notifications provided the physical and online locations where the Draft ISND/EA was available for review.

Response to Comments

Six comments were received on the Draft ISND/EA. Two comments were posted to the NPS PEPC website and four comment letters were received via U.S. Mail. Four comments supported the Proposed Action as described in the ISND/EA without raising any other concerns, one comment supported the Proposed Action and requested additional information, and one comment asked questions without voicing support or opposition for the Proposed Action. Responses to substantive comments are provided below.

The North Coast Regional Water Quality Control Board (NCRWQCB) acknowledged the agency's support of the Proposed Action and requested additional information related to permitting

requirements. The requested information has been included in the permit applications prepared for the Proposed Action.

The Environmental Protection Information Center (EPIC) requested that NPS and CDPR eliminate all mechanical noise within marbled murrelet nesting buffers during the marbled murrelet breeding season. As disclosed in the ISND/EA, the Proposed Action would comply with all federal and state requirements for protecting marbled murrelet (as required by PSR-BIO-7). Adherence to the work window would only allow work to occur over approximately 1 month per season (September 16 to October 15), which is not enough time to complete the planned work in areas adjacent to marbled murrelet habitat and would cause additional years of disturbance to the adjacent habitat. An overall benefit of the Proposed Action is that it would improve habitat conditions for marbled murrelet in the long term.

EPIC requested that NPS and CDPR evaluate the Proposed Action's impacts on the California condor (*Gymnogyps californianus*). The California Condor Reintroduction Project and associated cumulative impact analysis have been added to Sections 3.1.3 and 3.6.2 of the Final ISND/EA, respectively, in response to EPIC's comment. Including this information did not result in any change of the determination of environmental effects, and no new mitigation measures were necessary.

EPIC requested more detail on how the most current habitat suitability and connectivity modeling for the Humboldt marten (*Martes caurina humboldtensis*) will be used to determine the on-the-ground vegetation management design and urged NPS and CDPR to conduct treatments in a manner that disperses the activities over space and time to minimize impact on individuals. The Humboldt marten is associated with mid- to advanced successional stands of conifer with complex structure near the ground and dense canopy closure. The forest stands proposed for treatment under the Proposed Action generally do not meet the characteristics preferred by martens. The Proposed Action would thin dense stands, allowing them to develop mid-to advanced successional characteristics and ground vegetation structure at a more rapid rate than if untreated. The expected increase in the forest floor shrub layer would provide increased habitat for small mammal species (e.g., voles and woodrats) that provide the prey base for species such as Pacific fisher and Humboldt marten.

EPIC requested that NPS and CDPR coordinate with the Tolowa, Yurok, and other affected tribes regarding the Proposed Action. Significant consultation has occurred with Native American tribes. NPS and CDPR have communicated with the Elk Valley Rancheria, Big Lagoon Rancheria, Karuk Tribe, Resighini Rancheria, Tolowa Dee-ni' Nation, Trinidad Rancheria, and Yurok Tribe. NPS and CDPR have met with interested tribes in person regarding the Proposed Action numerous times since May 2017. Both the Tolowa Dee-ni' Nation and Elk Valley Rancheria were provided the opportunity to send tribal cultural monitors along on the survey that was conducted as part of Phase 1 inventory. A tribal representative from the Elk Valley Rancheria met with archaeologists and CDPR staff prior to survey and accompanied crews during field work. The Yurok monitors were involved in the survey kick-off

meeting but did not participate in the archeological field survey. Consultation under Section 106 of the National Historic Preservation Act is ongoing.

Lastly, EPIC encouraged NPS and CDPR to approach implementation of the Proposed Action in a manner that prioritizes resource protection and adaptively incorporates lessons learned. EPIC noted that leaving areas (such as an existing degraded road) as "no-treat" can create opportunities for controls from which future restoration activities can be informed. CDPR has monitored the response of forest stands to thinning treatments associated with the Mill Creek Young Forest Restoration Project that began in 2006. Monitoring information and lessons learned generated from that project helped inform the development of the Proposed Action. NPS and CDPR would conduct reporting and monitoring of restoration activities undertaken as part of the Proposed Action. Annual reports, in which progress would be evaluated, would be submitted to regulatory agencies, including the U.S. Army Corps of Engineers, National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), NCRWQCB, and the California Department of Fish and Wildlife. If any adaptive approaches to restoration activities are required, these would be determined through agency consultation.

Consultations with Agencies and Tribes

NPS determined that the Proposed Action may affect and is likely to adversely affect coho salmon and its designated critical habitat, and that the Proposed Action may affect but is not likely to adversely affect the marbled murrelet and northern spotted owl. NMFS issued a Biological Opinion, file number WCRO-2020-00560, dated June 15, 2020, that concurred with the NPS determination. USFWS issued a letter of concurrence, file number AFWO-20B0034-20I0152, dated April 9, 2020, that concurred with the NPS determination.

NPS initiated consultation under Section 106 of the National Historic Preservation Act (NHPA) with the California State Historic Preservation Officer (SHPO) by letter on September 21, 2018; requested review of the Area of Potential Effects (APE) by letter on February 25, 2019; and has also coordinated with SHPO staff by phone. SHPO staff asked NPS for additional information about the depth of ground disturbance via email and NPS responded with that information via emails on April 18 and May 20, 2019. SHPO concurred with the APE in correspondence dated May 22, 2019.

Standard protection measures and project specific recommendations to protect cultural resources in the APE for GMC include recommendations for unanticipated or inadvertent discoveries of archeological resources or human remains. To resolve adverse and unknown impacts on cultural resources from future phases of the GMC project, NPS signed a Programmatic Agreement with the California SHPO and CDPR on September 24, 2019, in accordance with 36 CFR 800.14(b)(3) for phased identification of historic properties. The Elk Valley Rancheria signed the Programmatic Agreement on January 21, 2020. The Advisory Council on Historic Preservation respectfully declined participation in the Programmatic Agreement, but were provided a copy of the final signed

agreement in accordance with 36 CFR 800.6(b)(1)(iv). The California SHPO had no objections to NPS's finding of No Adverse Effects to Historic Properties from GMC Phase 1.

NPS initiated government-to-government and NHPA consultation with federally recognized Native American tribes, including the Elk Valley Rancheria, Karuk Tribe, Resighini Rancheria, Tolowa Dee-ni' Nation, Trinidad Rancheria, and Yurok Tribe, on September 21, 2018. NPS requested comments from participating tribes on the APE for the Proposed Action by letter on February 25, 2019, and requested comments from tribes on the NPS recommendation of No Adverse Effects to Historic Properties from Phase 1 via letter on February 28, 2020, in accordance with Section 106 of the NHPA. In addition, tribes were notified of the release of the IS/EA for comment and invited to request additional government to government consultation meetings about the project in correspondences dated April 10, 2019. No responses were received. The Karuk Tribe respectfully declined participation.

Government-to-government meetings among NPS and CDPR officials have occurred with the Elk Valley Rancheria, Tolowa Dee-ni' Nation, and the Yurok Tribe. An informal meeting with a CDPR staff representative and Trinidad Rancheria Tribal Preservation Officer also occurred. Consultations with tribes are ongoing. No written comments have been received from the tribes regarding the Proposed Action.

NPS determined that the Proposed Action would have no impact on coastal zone resources and prepared a Coastal Zone Management Act Negative Determination. The California Coastal Commission concurred with the NPS determination on July 23, 2019.

NPS is in the process of securing several federal and state permits for the Proposed Action. A Clean Water Act Section 404 Regional General Permit will be obtained from the U.S. Army Corps of Engineers for the Proposed Action. Coverage under Category B of the Waiver of Waste Discharge Requirements for Nonpoint Source Discharges Related to Certain Federal Land Management Activities on National Forest System Lands in the North Coast Region and a Clean Water Act Section 401 Water Quality Certification will be issued by NCRWQCB.

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

In considering the criteria for significant impact as defined by CEQ regulations (40 CFR 1508.27), NPS determined that the Selected Action will not have a significant effect on the human environment. The "human environment," as defined in 40 CFR 1508.14, includes the natural and physical environment and the relationship of people with that environment. Specifically, there are no highly uncertain or controversial impacts, unique or unknown risks, elements of precedence, or cumulatively significant effects identified. Implementation of the Selected Action, including the minor modification identified in this document, will not result in the loss or destruction of significant

natural, cultural, or historic resources. Implementation of the Selected Action will not violate any federal, state, or local laws.

The ISND/EA contains descriptions of adverse effects on aesthetics; air quality; greenhouse gas (GHG) emissions; geology and soils; hydrology and water quality; biological resources; recreation; aesthetics; and socioeconomics. Potential adverse effects to these resources have been determined to be less than significant and will not require mitigation on the part of NPS to avoid or reduce the effects. The ISND/EA contains descriptions of project requirements (standard project requirements [SPRs] and project-specific requirements [PSRs]) to be implemented as part of the Selected Action to avoid significant project-related impacts to the environment. The Selected Action will not directly affect floodplains, old-growth forests, or cultural resources.

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 are significant.

Effects on Air Quality

The intermittent and short-term use of heavy equipment and torching would emit criteria air pollutants, toxic air contaminants, and fugitive dust. In addition, grading and soil movement has the potential to generate dust, including asbestos mineral dust. The Selected Action includes project requirements to control fugitive dust, including requirements for proper maintenance of equipment, watering during implementation to minimize fugitive dust, 5-minute maximum idling restrictions, fugitive dust-related excavation/grading restrictions, naturally occurring asbestos (NOA) soil watering requirements prior to any ground disturbance in serpentinitic soils, and NOA notification requirements to workers. While the Selected Action would generate emissions during implementation activities, emissions would be short term, localized, and minor, and would not violate air quality standards.

Cumulative effects on air quality from emissions from other past, present, and future forest restoration and maintenance activities, which include emissions from implementation or logging equipment, could occur. However, these emissions would be short term, localized, and minor, and would not violate air quality standards. Forest management activities in general have the potential to reduce long-term emissions of air pollutants by lessening the incidence and severity of fires, which are a major source of periodic air emissions in the state. The Selected Action would also reduce the number of unpaved roads in the area, thereby reducing fugitive dust.

No significant air quality related values would be affected outside of the immediate area where equipment is operating. Dust and emissions would be temporary. The overall effects on air quality under the Selected Action would be adverse, temporary, localized, and minor.

Effects on Greenhouse Gas Emissions

Short-term GHG emissions from implementation activities involving use of diesel- and gas-powered equipment, forest thinning, and controlled burning techniques would occur. The goals of the project are to rehabilitate the project area and restore ecosystem processes that have been degraded by historical land use activities. In the long-term, restoration would lead to a more diverse, resilient, and robust ecosystem that can offset Selected Action implementation emissions, store carbon, resist insect disease, and decrease the risk of accelerated carbon loss through severe fires.

Cumulative effects could result from other projects in the region that emit GHGs, which, because of the nature of climate change, would be additive. The Selected Action's GHG emissions would be limited to implementation activities and would represent a less-than-significant cumulative contribution to climate change because the Selected Action would result in a net decrease in GHG emissions in the long term through sequestration.

Effects on Geology and Soils

The Selected Action includes a set of treatments to prevent erosion and control sediment during implementation activities. Restoration actions would avoid unstable areas or areas that could become unstable, and nearby substantial earthquakes would trigger consultation and approval with an earth sciences/physical sciences professional before any treatment year. Extensive winterization, seasonal-use requirements, and dispersing cut vegetation across exposed soils would prevent erosion and concentrated runoff. Roads, landings, and skid trails would be maintained, upgraded, and constructed to engineering and geologic standards to ensure site stability.

New landings would be constructed to the minimum size needed and existing landings would be used as much as practicable to reduce sediment erosion. Yarding would be restricted to using equipment capable of one-end log suspension to reduce ground surface disturbance. Existing roads and landings selected for reuse would be evaluated by an earth sciences/physical sciences professional who would provide necessary erosion prevention and sediment control prescriptions. Equipment operators at road construction and removal sites would minimize exposure to unstable slope with the potential to cause soil erosion. Erosion prevention and sediment control measures would be implemented on skid trails and disturbed soils with the potential for erosion and sediment delivery to waterbodies, floodplains, and wetlands. The Selected Action would not result in substantial soil erosion or the loss of topsoil. In addition, road removal work included in the Selected Action is specifically being implemented to address existing and future erosion related to legacy logging uses, resulting in an overall benefit related to soil erosion and topsoil loss.

In terms of cumulative effects, historic timber management practices (clearcut tractor logging, road building, and minimal road maintenance) have had substantial direct adverse effects on soils and led

to erosion. Combined with other past present and future forest restoration and maintenance activities, the Selected Action would restore natural systems, resulting in a long-term benefit.

Effects on Hydrology and Water Quality

For forest thinning activities, the Selected Action includes streamside protection zones in which no heavy equipment would be permitted and traditional ground-based heavy equipment would be prohibited from operating on slopes greater than 40%, except for cable-assisted equipment (e.g., tethered harvesters and forwarders), which would be allowed on slopes up to 85% as long as the equipment stays on designated trails covered with a minimum of 6 inches of slash and operations within the riparian management zone are restricted. Short-term sediment discharge would be managed by the inclusion of streamside and wetland buffers and prescriptions, timing restrictions on road reconstruction and/or removal, and avoidance of trees contributing to streambank stability as part of the Selected Action. The Selected Action would thin trees within riparian areas to promote the development of late successional conditions (e.g., taller trees with greater canopy complexity) at a more rapid rate than is currently occurring. This would improve the ability of the riparian area to provide cool microclimates to area streams at a more rapid rate than if treatments were not conducted. The potential for short-term increases in water temperature is minor because the Selected Action includes retention of a minimum of 60% to 80% of canopy cover adjacent to perennial streams.

Approximately 2.5 miles of temporary roads may need to be constructed to access restoration areas; these temporary roads would all be constructed on upper slopes, outside of all intermittent and larger drainages, and would be designed for dry season use only. The Selected Action would remove existing and temporary roads, crossings, cross drains, and other impediments to drainage patterns, which would help restore a natural drainage pattern and reduce the potential for chronic and catastrophic erosion and sediment delivery to streams. There is the potential for the newly completed treatment sites to experience minimal erosion and sediment delivery during the recovery phase. The Selected Action includes timing restrictions for road reconstruction and/or removal, in-water work area isolation requirements, drainage structure and stream crossing maintenance requirements, and erosion control adjacent to stream channels to manage erosion and sediment delivery. Any upgraded roads needed to access thinning areas would be upgraded to current standards to reduce the hydrologic connectivity and potential for concentrated surface runoff. Cut vegetation would be spread and left on-site across skid trails and erosion control measures would be implemented on skid trails. The Selected Action also includes the potential to install temporary bridges to access treatment areas. Temporary bridges would fully span the creeks and not require encroachment into the channels and would not impede or redirect flood flows.

The Selected Action could temporarily impact state or federally protected wetlands in the project area during road reoccupation and removal. and large wood placement. However, implementation

activities would have a long-term benefit on wetlands by reducing sediment input, and stream crossing removal would result in additional wetland and riparian areas that were previously occupied by road prisms or culverts. Riparian and wetland plantings would also have a long-term benefit on wetlands in the project area. Work in wetland or riparian areas and stream channels may require heavy equipment to cross wetlands to access treatment sites. Crane mats or other appropriate cover material would be placed along the heavy equipment access routes that cross wetlands and herbaceous-dominated habitats (e.g., pasture, grasslands) to avoid wetland impacts.

The cumulative adverse effects on hydrology, water quality, and floodplains in and around the project area are related to past logging and road building practices. The Selected Action is designed to provide long-term benefits to instream water quality and hydrology by repairing some of the damage caused by past projects and practices.

Effects on Biological Resources

The Selected Action may cause limited short-term impacts to special-status species; however, habitat conditions for special-status species in the project area are expected to be substantially improved in the long term.

Vegetation

Redwood, Douglas-fir, tanoak, Sitka spruce, and alder forests occur in the project area and may be impacted during implementation activities. The forest stands that would be thinned during the Selected Action consist of unnaturally dense young forests that have been degraded by historical land use activities. The Selected Action also includes manual removal of vegetation adjacent to *Darlingtonia* fens to reduce the number of trees and cut back encroaching shrubs. Consistent with the GMP/GP, the Selected Action would rehabilitate sensitive natural communities within the project area and restore ecosystem function and processes to these degraded habitats.

The use of heavy equipment to assist in the thinning of dense second-growth forests and to reoccupy, construct extensions, and remove legacy roads and/or stream crossings could impact populations of special-status plants. Prior to the start of implementation activities, special-status plant surveys would be conducted and any individual or populations of rare, threatened, endangered plants, and those listed as California Native Plant Society Ranks 1 and 2 identified during pre-implementation special-status plant surveys would be clearly marked with an appropriate buffer and avoided. If avoidance is not possible, then the California Department of Fish and Wildlife would be consulted to determine a mutually agreeable strategy. For some species, the temporary disturbance associated with vegetation management activities would result in a net benefit to special-status plant populations, especially thinning that would create openings in the forest. Finally, implementation of

invasive plant and pathogen control would constrain the spread of invasive non-native plants and pathogens into adjacent populations of special-status plants.

Fish

The Selected Action would reduce the overall sediment load into streams, which would improve habitat conditions for special-status fish in the long-term. However, these actions could increase sediment delivery and could adversely affect spawning and rearing habitat for special-status fish species within the first year or two following road treatments as the re-established channels stabilize.

NPS determined, and NMFS concurred, that the Selected Action may affect and is likely to adversely affect Chinook salmon, coho salmon, and steelhead trout. Selected Action implementation activities associated with heavy equipment would occur during the non-rainy season. Stream crossing excavations and culvert replacements (including those added as part of the modified project description) would occur in dry channels or in channels where stream flow is diverted around the excavation site. Erosion control measures, such as placing mulch to reduce runoff into stream channels, would be implemented to reduce project-related sediment delivery into area streams. Large wood encountered during stream crossing excavations would be retained on site or used as in-channel habitat. Equipment exclusion zones would be set to buffer perennial, intermittent, and ephemeral streams from activities on dry lands (i.e., those not associated with stream crossings, instream large wood placement, and road removal operations). Large wood would be placed into channels to aid in the development of complex fish habitat by creating areas of lower velocity during higher flows, providing additional instream cover, scouring pools, and recruiting wood. The placement of large wood in streams would improve habitat conditions and be beneficial for fish.

Amphibians

Seeps, springs, streams, rivers, and riparian habitats that support amphibian species are present within the project area. Selected Action activities are anticipated to primarily occur during the dry season (i.e., summer and fall months). However, implementation activities may extend into winter. Amphibian survey requirements, habitat modification, and operational restrictions for all activities would be implemented in conformance with requirements. A foothill yellow-legged frog survey would be conducted prior to operations to determine whether frogs are occupying the project site. If foothill yellow-legged frogs or other amphibians are found to be occupying a site, then protection measures would be implemented to minimize take of individuals. Prior to implementation of activities on dry lands, (i.e., those not associated with stream crossings, instream large wood placement, and road removal operations) equipment exclusion zones would be established in areas near streams. At least 60% of canopy cover adjacent to streams would be retained so that sustained increases in water temperature would not occur in Pacific tailed frog and southern torrent salamander habitat.

Birds

Bird species would benefit from the forest thinning activities, which would promote the development of late successional conditions more rapidly than is currently occurring in the overstocked stands. However, implementation activities could affect habitat and cause noise disturbances, which could result in disturbance to or mortality of nesting birds. Potential impacts could include adult nest abandonment due to noise above ambient conditions or habitat removal resulting in physical harm to young or eggs.

NPS determined, and USFWS concurred, that the Selected Action may affect and is likely to adversely affect marbled murrelet. Improved late successional conditions would aid in connecting isolated marbled murrelet stands in Mill Creek to other occupied stands in RNSP. Forest restoration activities would retain all trees that are 30 inches in diameter at breast height or larger. The Selected Action also incorporates wildlife tree retention standards, which would preserve suitable nesting structure within the project area.

NPS determined, and USFWS concurred, that the Selected Action may affect but is not likely to adversely affect northern spotted owl. The Selected Action would result in improvements in northern spotted owl habitat by increasing the forest floor shrub layer, which would provide habitat for small mammal prey species (e.g., voles and woodrats). Forest restoration activities would retain all trees that are 30 inches in diameter at breast height or larger. The Selected Action also incorporates wildlife tree retention standards, which would preserve suitable nesting structure within the project area. There is the potential that nesting northern spotted owl could be affected by noise or habitat removal resulting from the Selected Action. Active northern spotted owl nests would be buffered from implementation activities, with the buffer widths and any associated thinning activities within the buffers determined through agency consultation.

Forest thinning is expected to result in higher-quality nesting habitat for special-status raptor species through the development of an advanced-successional conifer forest at a more rapid rate than if treatments were not conducted. There is a potential that noise created from thinning operations and habitat improvement actions could impact these species if they are breeding in the area. Implementation activities would not occur within raptor temporal and spatial buffers.

Thinning of overstocked stands would result in higher-quality nesting habitat for migratory birds, such as Vaux's swifts, which nest in tree holes or cavities found in late-successional forest. However, there is a potential for habitat removal through tree removal or noise disturbance as a result of implementing the Selected Action. There is the potential that instream wood placement could also affect willow flycatcher, if present. Project activities that modify or disturb vegetation would not occur during the peak nesting season between May 1 to June 30 to avoid nesting migratory birds, and if any vegetation manipulation or road removal is deemed necessary during the typical breeding

period (May 1 to July 31), an RNSP biologist would conduct weekly breeding bird surveys within the area of potential disturbance. If occupied nests are detected, work would either be suspended until the birds have fledged, or a spatial buffer would be applied to protect the nest.

Mammals

The Selected Action would promote tree species composition and structural changes that together favor the development of a late-seral forest conditions. Features such as hollows in large trees, snags, and complex structure would benefit habitat for special-status mammals. A portion of intermediate trees or snags would be retained; the largest trees in the stand would be retained; striking residual old-growth trees would be avoided; and wildlife trees that have characteristics such as cavities, hollows, and snag tops would be retained. All snags that do not pose a threat to human safety would be retained. In addition, road removal activities would result in reduced habitat fragmentation, reduced generalist carnivores that prey on forest specialists such as the Humboldt marten and Pacific fisher and reduced human disturbance of these species. The expected increase in the forest floor shrub layer would provide increased understory habitat for small mammal species that are the prey base for larger animals such as the Humboldt marten and Pacific fisher.

In terms of cumulative effects on biological resources, the Selected Action is designed to result in improved habitat features for terrestrial- and aquatic-dependent species in the long term. Any adverse effect resulting from implementation activities would be short term and minor.

Effects on Cultural Resources

In the GMC Phase 1 project area where archaeological survey occurred, the following resources were identified:

- Five archaeological sites: four historic and one prehistoric
- Seven isolated historic-era items

No historic-era built environment resources (buildings or other structures) were identified. Only two of the identified archaeological resources were recommended eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). One (site GMC-10) is a precontact lithic scatter occurring at a named ethnographic location. GMC-10 is recommended as NRHP-eligible under Criterion A (CRHR 1) because it may represent an important ethnographic Tolowa gathering place. GMC-8 is a segment of the 1894 Crescent City-Trinidad Wagon Road. GMC-8 is recommended eligible to the NRHP under Criterion A (CRHR Criterion 1) for its importance to state and local history.

Planned Phase 1 activities in the vicinity of GMC-8 include forest thinning via ground-based operations and skyline operations. This work has the potential for ground disturbance of up to 1 foot. An environmentally sensitive buffer area will be established around the site, which will prevent

vehicles from traversing it or trees being felled towards it. This will result in avoidance of adverse effects.

Planned Phase 1 activities in the vicinity of GMC-10 include forest thinning via ground-based operations and skyline operations. The site is located within the Childs Hill 3-1-1-1 road, and that road is not planned for removal or other modification. Avoiding use of the road would result in avoidance of disturbance to the site. If avoiding use of the Childs Hill 3-1-1-1 road is not possible, mats will be laid over the road within the site boundaries to avoid damage to GMC-10, and vehicles will be required to stay on the mats. This will result in avoidance of adverse effects.

The remaining resources were found to not be significant and are not recommended as eligible for listing in the NRHP and CRHR. They have been thoroughly recorded in the field and their data potential has been exhausted. Only the Phase 1 project area was inventoried for cultural resources. NPS has entered into a Programmatic Agreement in accordance with 36 CFR 800.14(b)(3) for phased identification of historic properties, or will complete consultations in accordance with Section 106 of the NHPA (2008) and its implementing regulations (36 CFR 800), including consultation with the California SHPO and tribes as appropriate. Phases that occur only on CDPR land with no NPS funding or approval would be governed by SPRs and PSRs developed to avoid significant project-related impacts. Therefore, future phases would be defined and implemented to avoid impacts on historical resources (as is the case for Phase 1).

Effects on Recreation

In the short term, public access to some hiking, biking, and equestrian trails within the project area would be prohibited due to implementation activities, but these restrictions would be temporary (seasonally over 2 to 4 years). Other trails would still be accessible to the public during these temporary closures. In the long term, ecosystem restoration activities, including forest thinning, would increase the aesthetic value of the park, thereby encouraging its recreational use, but not to a significant degree, because most of the project area is and would remain relatively inaccessible to and rarely used by visitors.

In terms of cumulative effects, historic timber management practices (clearcut tractor logging, road building, and minimal road maintenance) have limited some recreational activities because land that could potentially be used for recreation was off limits to the public. However, with the advent of the state and federal park systems, recreational opportunities in forested areas have increased and the Selected Action would maintain the availability of recreational activities.

Effects on Aesthetics

Scenic quality would be affected initially during thinning operations because spaces between trees and decomposing slash from thinning operations; excavation or grading from road reoccupation and

removal activities; and large wood placement activities could be visible in the short term to park visitors traversing the project area on hiking, biking, or equestrian trails, or viewing it from a scenic vantage point. No new permanent light sources would be introduced into the landscape as part of the Selected Action. Implementation activities would generally be limited to daylight hours, minimizing the need for construction work lights. Worker vehicles may travel through the project area before dawn or after dusk. Larger trees, which moderate light intensities and provide shade within the project area, would be preserved within the treatment areas.

The Selected Action is intended to enhance, among other values, the long-term aesthetic quality of the project area by facilitating the redevelopment of old-growth forests and aquatic ecosystems, thereby addressing past impacts of over-harvesting and road development. Scenic quality would likely improve over decades as thinned forests develop diverse understory vegetation and the forest canopy stratifies, although the project area would not be considered highly scenic until it achieves and maintains the characteristics of an old-growth forest.

Effects on Socioeconomics

Under the Selected Action, there would be negligible, short-term impacts related to implementation activities and potentially a positive impact to socioeconomics related to increased tourism in the region. There could be an economic benefit to the local economy from contracted services, such as temporary local worker employment to implement the Selected Action's implementation activities, and from the purchase of materials and plantings, such as seeds and trees. There could be positive long-term impacts on socioeconomics based on improving the condition of the forest and aesthetic value, which could lead to more tourism and visitors passing through Crescent City.

The historic timber industry was once a large and important part of the regional economy. The creation and expansion of the park in 1968 and 1978, the removal of most of the old-growth trees, and the enactment of laws protecting water quality and endangered species contributed to the decline of the logging industry as the principal source of income for the larger project area. However, even if logging was not limited by laws and regulation, the industry may have decreased due to declining resources. The Selected Action may contribute to an economic benefit to the local economy from contracted services, such as temporary local worker employment to carry out the implementation activities.

Conclusions

As summarized above, the effects of the Selected Action have been considered and are determined to be less than significant. These effects have also been considered under the criteria for significance listed in the CEQ regulations (40 CFR 1508.27) and found to be less than significant.

Basis for Decision

Based on the environmental assessment, analyses of issues and alternatives, together with consideration of the minimal public interest expressed; and the relation between public interest and laws, statutes, and regulations for managing NPS units, NPS will implement as its Selected Action the project described as the Proposed Action in the GMC Ecosystem Restoration ISND/EA dated April 2019.

It is the determination of NPS that the Selected Action to conduct forest and aquatic restoration and road removal in the GMC watershed neither constitutes 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 forest restoration, watershed restoration, and road removal described in the GMP/GP and Record of Decision. Therefore, in compliance with NEPA, NPS will not prepare an environmental impact statement, and will proceed with implementation of the project as soon as practicable.

Recommended: Steven N. Mietz Digitally signed by STEVEN MIETZ Date: 2020.06.18 14:40:28 -07'00'

Superintendent
Redwood National Park

Date

Approved: WOODROW SMECK Digitally signed by WOODROW SMECK Date: 2020.06.25 13:03:03 -07'00'

Regional Director
National Park Service
Interior Regions 8, 9, 10, and 12

Date

Errata

The following corrections, additions, and deletions have been made to the GMC Ecosystem Restoration Project Draft ISND/EA. Additions and corrections are underlined; strikeouts indicate a deletion.

Section 2.2.2, Road Extension, Reoccupation, and Removal (p 11), the following text was added. The project description and impact analysis as presented in the Draft ISND/EA included the replacement of hundreds of culverts; therefore, this addition represents a negligible change and would not increase potential environmental impacts.

Some abandoned logging roads would require temporary reoccupation to access areas for restoration. These roads have been planned for removal under the LSEP. These roads would first be improved to allow vehicles to use them and would then be removed once restoration treatments are completed in the area accessed by the roads. Reoccupation activities would also include replacement of failing culverts on permanent administrative roads needed to access forest restoration areas and installation of temporary bridges on existing open roads where current bridges do not have a load rating capable of withstanding highway-rated loads.

Section 3.1.3, Introduction, Cumulative Impact Scenario (p. 16). The following project was added to the list of past, present, and reasonably foreseeable future projects occurring in the vicinity of the Proposed Action:

- California Condor Reintroduction Project: NPS has partnered with the U.S. Fish and Wildlife Service (USFWS) and Yurok Tribe to reintroduce California condors in the Bald Hills region of Redwood National Park. The California condor was close to extinction in the 1980s. While the population of condors is increasing, the birds still face many environmental challenges. The purpose of the reintroduction program is to further the recovery of the California condor by establishing a new population in the species' historical range in the Pacific Northwest through captive releases at the park, while simultaneously reintroducing condors to Yurok Ancestral Territory. Reintroducing a new population of condors into the biologically diverse ecosystem in Redwood National Park and the surrounding area has the potential to aid in the species' long-term recovery. A draft EA for the project was released for public review in April 2019 and the project is anticipated to be implemented (with the release of the first condors) in fall 2020.

Section 3.6.2, Biological Resources, Proposed Action Impacts (p. 33). The following text was corrected:

The Proposed Action includes installing temporary stream crossings and bridges that have the potential to overlap with aquatic habitat that supports special-status fish. ~~All project locations are above the anadromous distribution of Pacific lamprey, coho salmon, Chinook salmon, and steelhead.~~

~~However, in~~ In-water activities have the potential to overlap with the distribution of coastal cutthroat trout, Pacific lamprey, coho salmon, Chinook salmon, and steelhead. ~~and if~~ If activities occur within the wetted stream channel, relocation would be implemented to reduce impacts on these species.

Section 3.6.2, Biological Resources, Proposed Action Impacts (p. 36). The following text was corrected with the revisions to PSR-BIO-8 (described below):

Raptors, including bald eagle, white-tailed kite, and peregrine falcons, have been documented in the project area. Bald eagle is known to nest in the project area and is occasionally observed foraging along Mill Creek. Peregrine falcon foraging habitat is present, but no nesting habitat is present; therefore, the species is not likely to be affected because it can move to other foraging habitats. Similar to marbled murrelet and northern spotted owl, thinning of overstocked stands would result in higher-quality nesting habitat for bald eagle and possibly white-tailed kite through the development of an advanced-successional conifer forest at a more rapid rate than if treatments were not conducted. There is a potential that noise created from thinning operations and habitat improvement actions (e.g., helicopter use) could impact these species, if they are breeding in the area. ~~Project activities that modify or disturb vegetation would not occur during the peak nesting season between May 1 to June 30 to avoid nesting migratory birds, and if any vegetation manipulation or road removal is deemed necessary during the typical breeding period (May 1 to July 31), an RNSP biologist would conduct weekly breeding bird surveys within the area of potential disturbance. If occupied nests are detected, work would either be suspended until the birds have fledged, or a spatial buffer would be applied to protect the nest. The size of the spatial buffer would be determined by the RNSP biologist based on the species found and the nest site specifics (PSR-BIO-6).~~ The Proposed Action would conform with all minimization measures and requirements identified in CESA documentation or USFWS's Biological Opinion (PSR-BIO-7) and restoration activities would not occur within raptor temporal and spatial buffers (PSR-BIO-8). The Proposed Action would have a less-than-significant impact as a result of noise disturbance or habitat removal on bald eagle and white-tailed kite and a beneficial impact on bald eagle as a result of developing late-successional forest conditions.

Willow flycatcher is a migrant to Del Norte County between early May through mid-October and has been documented in the project area (eBird 2019). Suitable habitat may include riparian vegetation along Mill Creek; however, occurrences of breeding willow flycatchers in Humboldt County are currently rare and localized (Hunter et al. 2005). This species is unlikely to be affected by upslope forest thinning, other vegetation management, and road rehabilitation operations because their preferred multi-storied deciduous riparian stands are generally located along the low-gradient habitats found along the main channel of Mill Creek. There is the potential that instream wood placement could affect this species, if present. Project activities that modify or disturb vegetation would not occur during the peak nesting season between May 1 to June 30 to avoid nesting migratory birds, and if any vegetation manipulation or road removal is deemed necessary during the

typical breeding period (May 1 to July 31), an RNSP biologist would conduct weekly breeding bird surveys within the area of potential disturbance. If occupied nests are detected, work would either be suspended until the birds have fledged, or a spatial buffer would be applied to protect the nest. The size of the spatial buffer would be determined by the RNSP biologist based on the species found and the nest site specifics (PSR-BIO-6). The Proposed Action would conform with all minimization measures and requirements identified in CESA documentation or USFWS's Biological Opinion (PSR-BIO-7). The Proposed Action would have a less-than-significant impact on willow flycatchers from noise disturbance or habitat removal.

Section 3.6.2, Biological Resources, Proposed Action Impacts, Cumulative Impacts (p. 40). The following text was revised to include reference to the additional reasonably foreseeable future project noted above:

Cumulative Impacts. The Proposed Action is designed to result in improved habitat features for terrestrial and aquatic species in the long term and less-than-significant impacts on biological resources in the short-term. Future regional projects considered as part of the cumulative analysis would also be subject to permitting and environmental review processes which would avoid, minimize, or mitigate impacts on biological resources. The Proposed Action, in conjunction with the California Condor Reintroduction Project, has the potential to result in improved conditions for the California condor. Foraging areas for condors are in open grasslands, beaches, and smaller meadows, and can be far from primary nesting sites, requiring substantial daily commutes. Condors glide and soar when foraging, so they depend on reliable air movements and terrain that enables extended soaring flight. They often use open, windy areas where they can run downhill or launch themselves from a cliff edge or exposed branch to get airborne. Roosting is also an important behavior and habitat need requiring certain sized trees conducive to landing and flying. These areas allow condors to rest in between flights. Condors nest mainly in natural cavities or caves in cliffs, although they sometimes also use trees, such as coast redwood and, historically, the giant sequoia. As the wild population grows, there is the possibility they may return to the redwood groves. With an increase in elk and deer populations, there would eventually be more carcasses providing foraging opportunities for condor, which would be beneficial. Therefore, the Proposed Action, when combined with future actions in the region, would result in a cumulative net benefit to biological resources.

Appendix C, Table 5, Standard Project Requirements and Project-Specific Requirements – The following text was corrected:

Element/ Title	Requirement
SPR-BIO-3	**Invasive plant and pathogen control.** All project activities that could spread invasive non-native plants and pathogens are subject to the Draft NCRD Invasive Species BMPs (within the Draft Mill Creek Vegetation Management Plan [CDPR 2019]) or the *Invasive Plant Management Plan for Redwood National Park* (NPS 2017a), and the Aquatic Invasive Species Management Plan (CDFG 2008).

Element/ Title	Requirement
PSR-BIO-8	**Raptor breeding temporal and spatial buffers.** Prior to the start of project-related work occurring from ~~May~~ February 1 through July 31, the on-site inspector/monitor would be responsible for implementing raptor temporal and spatial buffers around observed nests. No project activities would occur within temporal and spatial buffer zones. Temporal buffers are temporary buffers established around nest sites that restrict operations during the species critical nesting period. Spatial buffers are permanent habitat retention buffers established around a species nest site. Until the nest site is determined to be no longer active (normally after 3 years of no use), habitat modification is not allowed within the spatial buffer.

Determination of Non-Impairment
Greater Mill Creek Ecosystem Restoration Project
Redwood National and State Parks
Del Norte County, California

This determination of non-impairment has been prepared for the Greater Mill Creek (GMC) Ecosystem Restoration Project (Project), involving restoration activities including forest management treatments, use of diesel or gas powered heavy equipment, erosion prevention measures, and other activities as noted below.

Congress directed the U.S. Department of the Interior and the National Park Service (NPS) to manage units "to conserve the scenery, natural and historic objects, and wildlife in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wildlife in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 United States Code 100101). An action constitutes impairment when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values" (NPS Management Policies 2006 [Management Policies 2006], Section 1.4.5). To determine impairment, NPS must evaluate the "particular resources and values that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts" (Management Policies 2006, Section 1.4.5). Although Congress has given NPS the management discretion to allow certain impacts within the park, that discretion is limited by the statutory requirement that NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of these resources or values.

As stated in the Management Policies 2006 (Section 1.4.5), an impact to any park resource or value may constitute an impairment, but an impact would be more likely to constitute an impairment when there is a major or severe adverse effect upon a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values that are subject to the non-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. NPS's threshold for considering whether there could be an impairment is based on whether an action would have major (or significant) effects.

The following resource topics analyzed in the ISND/EA are applicable to evaluation of the Project for potential impairment: air quality, greenhouse gas emissions, biological resources, geology and soils, hydrology and water quality, cultural resources, and tribal cultural resources.

A non-impairment determination is not made for aesthetics, agriculture and forestry resources, hazards and hazardous materials, land use and planning, noise, recreation, socioeconomics, transportation, and wildfire because these are not considered to be park resources or values subject to the non-impairment standard established by the Organic Act and clarified further in Section 1.4.6 of the Management Policies 2006.

Air Quality

Implementing ecosystem restoration activities in the GMC project area will result in adverse impacts to air quality primarily through the emission of criteria air pollutants, toxic air contaminants, and fugitive dust. In addition, grading and soil movement has the potential to generate dust, including

asbestos mineral dust. The Project includes requirements to control fugitive dust, including requirements for proper maintenance of equipment, watering during implementation to minimize fugitive dust, 5-minute maximum idling restrictions, fugitive dust-related excavation/grading restrictions, naturally occurring asbestos (NOA) soil watering requirements prior to any ground disturbance in serpentinitic soils, and NOA notification requirements to workers. While the Project will generate emissions during implementation activities, emissions will be short term, localized, and minor, and will not violate air quality standards.

No significant air quality related values will be affected outside of the immediate area where equipment is operating. Dust and emissions will be temporary. As a result, there will be minor negligible impacts to air quality from implementing the Project. The minor and negligible long-term adverse effects on soils are acceptable because the impacts result from an action needed to achieve objectives for restoration outlined in the 1999 General Management Plan (GMP). As a result, there will be no impairment to air quality from implementing the Project.

Greenhouse Gas Emissions

Implementing ecosystem restoration activities in the GMC project area will result in short-term GHG emissions from implementation activities involving use of diesel- and gas-powered equipment and forest thinning. These short-term adverse effects on greenhouse gas emissions are negligible and necessary to achieve restoration objectives, and therefore acceptable. In the long-term, restoration will lead to a more diverse, resilient, and robust ecosystem and will result in a net decrease in greenhouse gas emissions through sequestration. As a result, there will be no new long-term impairment to greenhouse gas emissions from implementing the Project.

Biological Resources

Implementing ecosystem restoration activities in the GMC project area may cause limited short-term impacts to special-status species; however, habitat conditions for special-status species in the project area are expected to be substantially improved in the long term. Because short-term adverse effects to special-status species are necessary to achieve restoration objective and improvement of habitat conditions for special-status species in the long term, these short-term adverse effects are acceptable. The Project will result in long-term benefits to forest structure and its associated vegetation community, fish, amphibians, birds, and mammals. There will be no new long-term impairment to biological resources from implementing ecosystem restoration activities in the GMC project area.

Vegetation

The Project will use heavy equipment to assist in the thinning of dense second-growth forests and to reoccupy, construct extensions, and remove legacy roads and/or stream crossings, which could

impact populations of special-status plants. Consistent with the GMP, the Project will rehabilitate sensitive natural communities within the project area and restore ecosystem function and processes to these degraded habitats. The Project also includes manual removal of vegetation adjacent to Darlingtonia fens to reduce the number of trees and cut back encroaching shrubs. The effect of thinning will be a negligible short-term adverse effect from removal of individual trees and a moderate long-term benefit to forest community structure in the project area. Accordingly, implementing ecosystem restoration activities in the GMC project area will not further impair vegetation values or function and in the long term will reduce impairment to vegetation.

Fish

The Project will reduce the overall sediment load into streams, which will improve habitat conditions for special-status fish in the long-term. However, these actions could increase sediment delivery and could adversely affect spawning and rearing habitat for special-status fish species within the first year or two following road treatments as the re-established channels stabilize.

NPS determined, and the National Marine Fisheries Service concurred, that the Project may affect and is likely to adversely affect Chinook salmon, coho salmon, and steelhead trout. Project implementation activities associated with heavy equipment will occur during the non-rainy season. Stream crossing excavations and culvert replacements will occur in dry channels or in channels where stream flow is diverted around the excavation site. Large wood encountered during stream crossing excavations will be retained on site or used as in-channel habitat. Equipment exclusion zones will be set to buffer perennial, intermittent, and ephemeral streams from activities on dry lands (i.e., those not associated with stream crossings, instream large wood placement, and road removal operations). Large wood will be placed into channels to aid in the development of complex fish habitat by creating areas of lower velocity during higher flows, providing additional instream cover, scouring pools, and recruiting wood. The placement of large wood in streams will improve habitat conditions and be beneficial for fish.

Amphibians

Seeps, springs, streams, rivers, and riparian habitats that support amphibian species are present within the project area. The impacts of the Project on southern torrent salamanders and tailed frogs will be negligible. Planting of trees along streams in the project area will eventually provide future large wood for natural recruitment to the channel. These activities will neither encroach into the stream channel nor result in increased sediment delivery. Accordingly, implementing ecosystem restoration activities in the GMC project area will not cause further impairment to amphibian species.

Birds

Bird species will benefit from the forest thinning activities, which will promote the development of late successional conditions more rapidly than is currently occurring in the overstocked stands. However, implementation activities could affect habitat and cause noise disturbances, which could result in disturbance to or mortality of nesting birds. Potential impacts could include adult nest abandonment due to noise above ambient conditions or habitat removal resulting in physical harm to young or eggs.

NPS determined, and the U.S. Fish and Wildlife Service (USFWS) concurred, that the Project may affect and is likely to adversely affect marbled murrelet. Improved late successional conditions will aid in connecting isolated marbled murrelet stands in Mill Creek to other occupied stands in Redwood National and State Parks (RNSP). Forest restoration activities will retain all trees that are 30 inches in diameter at breast height or larger. The Project also incorporates wildlife tree retention standards, which will preserve suitable nesting structure within the project area.

NPS determined, and USFWS concurred, that the Project may affect but is not likely to adversely affect northern spotted owl. The Project will result in improvements in northern spotted owl habitat by increasing the forest floor shrub layer, which will provide habitat for small mammal prey species (e.g., voles and woodrats). Forest restoration activities would retain all trees that are 30 inches in diameter at breast height or larger. The Project also incorporates wildlife tree retention standards, which would preserve suitable nesting structure within the project area. There is the potential that nesting northern spotted owl could be affected by noise or habitat removal resulting from the Project. Active northern spotted owl nests will be buffered from implementation activities, with the buffer widths and any associated thinning activities within the buffers determined through agency consultation.

Forest thinning is expected to result in higher-quality nesting habitat for special-status raptor species through the development of an advanced-successional conifer forest at a more rapid rate than if treatments were not conducted. There is a potential that noise created from thinning operations and habitat improvement actions could impact these species if they are breeding in the area. Implementation activities will not occur within raptor temporal and spatial buffers.

Thinning of overstocked stands will result in higher-quality nesting habitat for migratory birds, such as Vaux's swifts, which nest in tree holes or cavities found in late-successional forest. However, there is a potential for habitat removal through tree removal or noise disturbance as a result of implementing the Project. There is the potential that instream wood placement could also affect willow flycatcher, if present. Project activities that modify or disturb vegetation will not occur during the peak nesting season between May 1 to June 30 to avoid nesting migratory birds, and if any vegetation manipulation or road removal is deemed necessary during the typical breeding period

(May 1 to July 31), an RNSP biologist will conduct weekly breeding bird surveys within the area of potential disturbance. If occupied nests are detected, work will either be suspended until the birds have fledged, or a spatial buffer will be applied to protect the nest.

Accordingly, implementing ecosystem restoration activities in the GMC project area will not cause further impairment to bird species and in the long term will reduce existing impairment.

Mammals

The Project will promote tree species composition and structural changes that together favor the development of a late-seral forest conditions. The expected increase in the forest floor shrub layer will provide increased understory habitat for small mammal species that are the prey base for larger animals such as the Humboldt marten and Pacific fisher. Therefore, the Project will have a negligible benefit to mammals in the project area and will not cause further impairment to mammals.

Geology and Soils

Historic timber management practices (clearcut tractor logging, road building, and minimal road maintenance) have had substantial direct adverse effects on soils and led to erosion. The Project includes treatments to prevent erosion. Combined with other past present and future forest restoration and maintenance activities, the Project will address restoration of natural systems. In addition, it will not increase exposure of people or structures to loss, injury, or death for seismic or other geological events. As a result, there will be reduced impairment to geology and soils from implementing the Project as more natural conditions are reestablished.

Hydrology and Water Quality

The Project is designed to provide benefits to instream water quality and hydrology by repairing some of the damage caused by past projects and practices. Combined with other present and future forest restoration and maintenance activities, the Project will have a cumulative benefit to hydrology and water quality, because it is designed to provide long-term benefits to instream habitats and water quality. Therefore, the Project will reduce impairment to hydrology or water quality in the project area.

Cultural Resources

In the GMC Phase 1 project area where archaeological survey occurred, the following resources were identified:

- Five archaeological sites: four historic and one prehistoric
- Seven isolated historic-era items

No historic built environment resources (buildings or other structures) were identified. Only two of the identified archaeological resources were recommended eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). One (site GMC-10) is a precontact lithic scatter occurring at a named ethnographic location. GMC-10 is recommended as NRHP-eligible under Criterion A (CRHR 1) because it may represent an important ethnographic Tolowa gathering place. GMC-8 is a segment of the 1894 Crescent City-Trinidad Wagon Road. GMC-8 is recommended eligible to the NRHP under Criterion A (CRHR Criterion 1) for its importance to state and local history.

Planned Phase 1 activities in the vicinity of GMC-8 include forest thinning via ground-based operations and skyline operations. This work has the potential for ground disturbance of up to a foot. An environmentally sensitive buffer area will be established around the site, which will prevent vehicles from traversing it or trees being felled towards it. This will result in avoidance of adverse effects. Planned Phase 1 activities in the vicinity of GMC-10 include forest thinning via ground-based operations and skyline operations. The site is located within the Childs Hill 3-1-1-1 road, and that road is not planned for removal or other modification. Avoiding use of the road would result in avoidance of disturbance to the site. If avoiding use of the Childs Hill 3-1-1-1 road is not possible, mats will be laid over the road within the site boundaries to avoid damage to GMC-10, and vehicles will be required to stay on the mats. This will result in avoidance of adverse effects. The remaining resources were found to not be significant and are not recommended as eligible for listing in the NRHP and CRHR. They have been thoroughly recorded in the field and their data potential has been exhausted. The Project will have no adverse effect on historic properties and will not result in impairment of cultural resources.

Tribal Cultural Resources

No tribal cultural resources have been identified in the Phase 1 project area, and Phase 1 will not result in impacts to any potential tribal cultural resources (the precontact sites or ethnographic location). For future phases of the Project, tribal consultation will occur throughout and prior to implementation planning. Projects will be defined and implemented to avoid impacts to tribal cultural resources. The Project will not result in impairment of tribal cultural resources because there are no known resources present in the project area and monitoring will detect any currently unknown tribal cultural resources.

Summary

NPS has determined that implementing ecosystem restoration activities in the GMC project area will not constitute an impairment of the resources or values of the park. It is anticipated that the Project will result in an overall reduction of impairment to a number of key resources. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the

environmental impacts described in the environmental assessment, comments provided by the public and others, and the professional judgment of the decision maker guided by the direction of the Management Policies 2006.