United States Department of Agriculture

Six Rivers Aquatic Restoration Project

Decision Notice & Finding of No Significant Impact

Forest Service | Pacific Southwest Region | Six Rivers National Forest | R5-MB-317 June 2019

Cover photo: Large wood in Monkey Creek, Smith River National Recreation Area / Gasquet Ranger District, Six Rivers National Forest. USDA Forest Service photo.

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Del Norte, Siskiyou, Humboldt, and Trinity Counties, California

Responsible Official: Ted O. McArthur, Forest Supervisor
Six Rivers National Forest
1330 Bayshore Way
Eureka, CA 95501
(707) 441-3534
ted.mcarthur@usda.gov

For Information Contact: Carolyn Cook, Natural Resource Staff Officer
Six Rivers National Forest
1330 Bayshore Way
Eureka, CA 95501
(707) 441-3551
carolyn.cook@usda.gov

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Decision Notice

Introduction

This *Decision Notice and Finding of No Significant Impact* (DN and FONSI) documents my decision and rationale for selecting Alternative 2, as disclosed in the *Six Rivers Aquatic Restoration Project Final Environmental Assessment* (final EA pp. 25-60). The final EA discloses the predicted environmental and social effects of Alternative 2 and Alternative 1 (No Action), providing a comparison of what could happen without management (final EA Chapter 3).

The social context for advancing the Six Rivers National Forest's (SRNF or forest) watershed and fisheries program for anadromous and native resident fish, warm-water game fish and their habitats, and other aquatic species is key—as the successful implementation of restoration is dependent upon acceptance by those who live near and care for streams and their floodplains. The *Six Rivers Aquatic Restoration Project (Aquatic Restoration Project)* exemplifies a shared vision embraced by forest leadership and dedicated collaborators and stakeholders. Since 2012, local tribes, landowners, the California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS) and watershed restoration groups have worked side-by-side to select the site locations and co-design the assortment of condition-based, rehabilitation activities found in Alternative 2 for North Coast fisheries habitat (final EA pp. 21-23).

The *Aquatic Restoration Project* includes riparian, stream, pond and lake aquatic habitats across all administrative units on the SRNF, as well as on the Ukonom Ranger District (RD) of the Klamath National Forest (KNF) under SRNF delegated administrative authority. It was designed in compliance with standards and guidelines (S&Gs) in the 1995 SRNF and KNF land and resource management plans (LRMPs or forest plans), the *Aquatic Conservation Strategy* (ACS), and other federal, state, and local laws and requirements (final EA pp. 7-13).

Purpose and Need

The Purpose and Need for the *Aquatic Restoration Project* is to improve instream and riparian habitats to accelerate the recovery of North Coast federally listed threatened coho salmon, steelhead and Chinook salmon and other USDA Forest Service (Forest Service) aquatic species, thereby fulfilling tribal trust responsibilities, obligations to local communities, recreation and commercial fishing industries (final EA p. 7).

This project responds to the following needs:

- Restore and improve instream conditions sufficient to support all life stages of salmonids and other aquatic species;
- Restore upstream and downstream passage conditions for all life stages of salmonids, where blocked;

- Restore continuous paths for wood dispersal, nutrient cycling, sediments and other vegetative material essential for productive fish habitat;
- Maintain or restore native plant communities and structure impacted by invasive plants and pathogens, while rehabilitating eroding or artificially diverted streambanks to maintain water quality and increase shade, large wood (LW) recruitment in streams, ponds, lakes and riparian areas for quality macroinvertebrate habitats; and
- Maintain, repair, or remove ineffective instream and lake structures.

Decision

Based upon my review of the analysis disclosed in the December 2018 *Aquatic Restoration Project* final EA, the project record, best available science and consideration of public comments, I have decided to select Alternative 2 (Selected Alternative), as described in Chapter 2 of the final EA (pp. 25-60) with one modification. I have decided to limit cutting to small trees up to a 9-inch dbh (diameter at breast height) to maintain existing meadows in northern spotted owl (NSO) dispersal habitat only. Other activities under Alternative 2 within NSO nesting, roosting and foraging habitats, including planting conifers, deciduous trees and shrubs; placing sedge and/or rush mats; and gathering and planting willow cuttings are approved as designed (final EA p. 53).

My decision to select Alternative 2 will trigger phased, forest-wide instream and riparian restoration activities, such as using large wood (LW) that creates complex habitat as seen in Figure 1, to enhance and restore instream processes benefitting aquatic species, riparian habitats and water quality.

Figure 1. Large wood (LW) material that could be used to create complex wood structures. Horse Linto Creek, Lower Trinity RD. USDA Forest Service photo by Eli Boone.

I am authorizing an assortment of condition-based, manual and mechanical riparian and in-stream restoration activities along a maximum of 1,234 stream miles of fisheries spawning, rearing, and over-wintering habitats associated with the Smith, Klamath, Trinity, Salmon, Mad, North Fork Eel and Van Duzen rivers and their tributaries, as well as 1,156 acres of lakes and ponds. The extent and intensity of the individual project activities within and alongside these streams and associated riparian areas will typically be less than 5 acres, completed over a few days or a couple of weeks, and spread throughout the forest to avoid measurable impacts and potential for significant impacts.

Within the project area, a combination of manual and heavy equipment methods will incrementally occur within and alongside approximately 35 stream miles at specific sites identified through collaboration (final EA Appendix D). Along the remaining 1,199 stream miles, manual methods will occur at specific sites informed and identified by stream surveys. Manual restoration techniques will occur within and around ponds and lakes, with the exception of Fish Lake on the Orleans Ranger District (RD), which may require the use of heavy equipment to rehabilitate fisheries spawning, rearing, and over-wintering stream habitats (final EA p. 26, Appendix D). Invasive plant species management (i.e., My decision will apply resource-specific General Aquatic Conservation Measures (GACMs) and project design criteria (PDC) from the *Watershed and Fisheries Restoration Program Biological Assessment* (WFRPBA) and corresponding biological opinion (BO) from the National Marine Fisheries Service (NMFS 2015), to mitigate minor unavoidable short-term impacts (final EA Appendix B), and avoid any potential for significant effects (final EA Appendix C).

The programmatic condition-based planning and implementation tactics under Alternative 2 will function to optimize community collaboration and effective designs to benefit multiple resources (final EA Appendix A). Alternative 2 applies set annual limits for the number of projects that can be implemented (final EA Table 2-4 p. 41). These limits address the potential for negative cumulative effects of sediment and potential for harassment of Endangered Species Act- (ESA) listed salmonids in the long-term. Ultimately, the number and types of activities will likely be substantially below these thresholds, based on other resource design features, opportunities, current staffing levels and projected funding.

Each restoration project will be subject to the interdisciplinary *Aquatic Restoration Project* development, review and compliance process prior to implementing ground-disturbance operations. This project implementation process and checklist, found in Appendix C of the final EA and attached to this document, will be implemented. This process provides for flexibility in design, placement and timing to account for changing conditions associated with future natural events (e.g., fires and floods), or where resource damage is occurring or has the potential to occur. I will review and approve compliance documentation before any on-the-ground restoration work occurs. This includes ensuring techniques and project locations are thoroughly vetted through the interdisciplinary team (IDT) process, public input is sought and considered, tribal consultation is completed, and partner agency concurrence is sought based on the level of impacts.

The following summarizes the activity categories under Alternative 2 (final EA pp. 30-37), responsive to the Purpose and Need and public comments:

Fish Access to Habitat/Habitat Connectivity

1. **Fish Passage Restoration:** This restoration activity can reconnect downstream movement of habitat components (e.g., instream/flow related, weir modification) by providing physically unobstructed routes to areas critical in fulfilling all life stages of aquatic and riparian-dependent species.

Instream Habitat Enhancement

2. **Large Wood and Boulder Placement** (e.g., adding wood and/or boulders, engineered logjams, boulder weirs)**:** These restoration activities would occur in stream channels and adjacent floodplains to increase channel stability, rearing habitat, pool formation, spawning gravel deposition, channel complexity, hiding cover, low-velocity areas and floodplain function.
3. **Legacy/Existing Structure Improvements or Removal** (e.g., instream enhancements, water-flow controls/diversions)**:** These restoration activities would reconnect stream corridors, floodplains and estuaries; reestablish wetlands; improve aquatic organism passage; and promote natural channel and flow conditions. Activities would also include adding components and modifying existing legacy structures that are no longer functioning properly (e.g., fenced rock gabions or log weirs that have been undercut and may be a low-flow barrier to juvenile salmonids).
4. **Beaver Habitat Restoration** (installing structures to mimic beaver-created habitat)**:** This restoration activity would include installation of in-channel structures to encourage beavers to build dams in incised channels and across potential floodplain surfaces. The dams are expected to entrain substrate, aggrade the bottom, and reconnect the stream to the floodplain. Like natural beaver dams, these beaver dam analogs (i.e., beaver dam support (BDS) structures or post-assisted woody structures (PAWS)) are temporary features on the landscape. These structures would aid in the development of beaver dams where beavers are present.
5. **Gravel Augmentation** (clean weed-free gravel from existing approved sites)**:** This restoration activity would place gravel directly into the stream channel, at tributary junctions, or other areas in a manner that mimics natural debris flows and erosion. Augmentation will only occur in areas where the natural supply has been eliminated, significantly reduced through anthropogenic disruptions, or used to initiate gravel accumulations in conjunction with other projects, such as simulated logjams and debris flows. Gravel placed in streams will be a properly sized gradation for that stream, clean, non-angular, and when possible, of the same lithology as found in the watershed. Crushed rock is not permitted.
6. **Off- and Side-Channel Habitat Restoration:** These restoration activities would reconnect past side channels with floodplains by removing off-channel fill and plugs. Furthermore, new side channels and alcoves may be constructed in geomorphic settings that will accommodate such features. This activity category typically applies to areas where side channels, alcoves, and other backwater habitats have been filled or blocked from the main channel, disconnecting them from most, if not all, flow events.

Riparian and Streambank Restoration

7. **Streambank Restoration:** These restoration activities would improve streambank condition by stabilizing streambanks, including small landslides with appropriate site-specific techniques. Reduction of streambank sediment input would improve fish habitat and fish survival by increasing fish embryo and alevin survival in spawning gravels, and minimizing the loss of, or reducing the size of, pools from excess sediment deposition.
8. **Riparian Vegetation Treatment:** These restoration activities would include planting of native riparian species that occur under natural disturbance regimes, girdling alders to promote conifer growth, and cutting of small trees (up to 9-inch dbh) to maintain existing meadows within the project area. Activities may include planting conifers, deciduous trees and shrubs; placing sedge and/or rush mats; and gathering and planting willow cuttings. Species planted will be the same species that naturally occur in the project area. The removal of non-native vegetation and construction of temporary enclosures (i.e., fencing) may occur in the event deer, elk, and livestock grazing could compromise survival.
9. **Non-Native Invasive Plant Control:** This activity would include removing and managing invasive non-native plants within riparian areas. This activity would restore the composition, structure, and abundance of native riparian plant communities important for bank stability, stream shading, LW and other organic inputs into streams, all of which are important elements to fish habitat and water quality.

    Project activities, accomplished with field crews using hand tools or hand-held motorized equipment (manual methods), would remove localized invasive plant populations, including their root systems. Methods to eradicate vegetation will be either through hand cutting or mowing to temporarily reducing the size and vigor of plants. Where invasive plant cover is relatively high and extensive (e.g., Himalayan blackberry), the use of heavy equipment, such as backhoes with brush rakes and trucks for hauling, could occur in areas where heavy equipment is allowed. Depending on the findings from site-specific resource surveys, management could also include revegetation with native, riparian shrubs, planting trees, and placing down logs or other native debris to block motorized access.
10. **Reduction/Relocation of Recreation Impacts:** These restoration activities would adjust dispersed and developed recreation practices that retard or prevent attainment of ACS objectives by restoring impacted riparian vegetation and streambank stability, and reducing sedimentation into adjacent streams.

Other – Resident Fish and Aquatic Species

The SRNF watershed and fisheries program also has responsibilities related to native resident fish, other aquatic species, and desired warm-water game fish and their habitats. Most resident cold-water species are found co-located with anadromous fish or higher in the watersheds above anadromous salmonid barriers. Activities under Alternative 2 will target habitat restoration and enhancement for other water bodies with native non-salmonid aquatic fish and wildlife species:

11. **Resident Aquatic Species Pond and Lake Enhancement** (improve habitat for western pond turtles, remove invasive species)**:** Restoration activities would provide for invasive weed removal in

natural lakes and ponds, installation of western pond turtle basking platforms, and eradication of bullfrog/non-native aquatic species through non-chemical methods (e.g., seining, draining) of natural and artificial (e.g., livestock) ponds and/or screening.

12. **Maintain or Enhance Brush Structures in Ruth Lake:** These restoration activities would enhance habitats and improve recreational fisheries in Ruth Lake (Matthews Dam) and natural lakes where fishing is allowed. Implementation of these types of projects will involve using hand tools, including chainsaws, and hand labor.

Connected Actions

According to the Council on Environmental Quality (CEQ) Regulations (§1508.25), connected actions are closely related actions that automatically trigger (or are triggered by) other actions that cannot or will not proceed unless other actions are taken previously or simultaneously, and/or are interdependent parts of a larger action and depend on the larger action for their justification. The following connected actions will apply:

- Gravel augmentation may utilize existing weed-free gravel sources. No new sources or expansions of existing gravel pits are planned.
- Use of existing National Forest Transportation System (NFTS) roads and temporary routes for access by foot travel and transport of mechanical equipment.
- Application of temporary trail and road closures may be required (1 to 2 days) to ensure public safety when heavy equipment is in use.
- Use of existing landings and disposal sites for either disposal or storage of debris, parking for equipment and vehicles, or helicopter staging.
- Use of off-site LW from National Forest System (NFS) lands, when available via other authorized projects.
- Burning piles of invasive plant debris may occur when individual *Aquatic Restoration Project* areas overlap spatially and within the approved methods for the life of other authorized NEPA projects.

Permits, Licenses and Authorizations Needed to Implement the Decision

In accordance with 40 CFR 1502.25 (b), the final EA lists all federal permits, licenses, or other entitlements that must be obtained to implement the action alternatives. A waiver application will be filed with the North Coast Regional Water Quality Control Board (NCRWQCB) under Order No. R1-2015-0021, prior to implementation of site-specific projects, as outlined in Appendix C of the final EA and attached to this document. The need for a permit from the US Army Corps of Engineers or a streambed alteration agreement from the California Department of Fish and Wildlife (CDFW) will be determined during site-specific project planning. All permits will be obtained, prior to commencing in-channel alterations.

Mitigation and Monitoring

My decision will apply project design features (PDFs) and mitigation measures to reduce, minimize, or eliminate impacts to various natural and cultural resources and ensure project compliance with resource protection S&GS of the SRNF LRMP; *Six Rivers National Forest Best Management Practices (BMP) for Invasive Plant Species and Aquatic Organisms* (2014); and national, regional, and state water quality BMPs.

My decision also requires monitoring, as described in the final EA (final EA p. 51, Appendix B). Monitoring is fundamental to inform decision-making that can influence future conditions. Site-specific project monitoring identified during the planning phase will address resource concerns and project type to ensure that mitigation measures are implemented effectively and to identify any fish or wildlife mortality that occurs during instream restoration.

Monitoring is also required to evaluate the effectiveness of planned activities, including standard practices and mitigation measures, to ensure desired project outcomes, including Port-Orford-cedar (POC) requirements (final EA Appendix B p. 205). Lessons learned from monitoring and evaluation will be incorporated into future project planning efforts.

Implementation and effectiveness monitoring for cumulative watershed effects will utilize the BMP Effectiveness Evaluation Process. The objective is for 100 percent BMP implementation. Results for any BMP below 85 percent trigger a review of the activity area before implementation of further projects. A complete list of BMPs is included in Appendix B of the final EA.

Reasons for the Decision

In reaching my decision, I considered the Purpose and Need for action, tribal and interagency consultation, public comments, resource reports, and the potential effects and outcomes of the No Action Alternative (Alternative 1) compared to the *Aquatic Restoration Project* (Alternative 2).

I am confident Alternative 2 incorporates the best available science, such as the recently released technical guidance, *USDA Guidance for Stream Restoration* (Yochum 2018). The *USDA Guidance for Stream Restoration* provides a bibliographic repository of information to assist with the collaborative process of planning, analyzing, and designing effective site-specific stream restoration projects. My review of the *2014 Southern Oregon/Northern California Coast (SONCC) Recovery Plan* and WFRPBA indicates restoration of instream and riparian habitat will aid in the recovery of listed salmonids. My understanding is using the aforementioned techniques will incrementally improve stream access, structure and complexity. I find Alternative 2 is designed to rectify and compensate for past natural and human-caused disturbances (i.e., impacts) to aquatic and riparian resources, regardless of disturbance agent (e.g., floods, landslides, unmanaged recreational uses), by repairing and rehabilitating the environment. Site activities will compensate for past disturbances by replacing or providing substitute resources or environments to eliminate impacts over time.

Fish passage restoration through opening cool-water refugia, or the maintenance or removal of old structures, will allow movement of individuals at low flows. Climate change is a known threat to the recovery of listed salmonids per the *2014 Southern Oregon / Northern California Coast (SONCC)*

Recovery Plan. Climate change will likely alter water runoff patterns, lower summer flows and intensify storms to increase peak flows, with detrimental effects to SONCC coho salmon populations in freshwater habitats (Barr et al. 2010; Kiparsky and Gleick 2003; Furniss et al. 2013). The most effective response to a changing climate is a renewed commitment to watershed restoration. Habitat restoration can play an important role in offsetting the effects of climate change, although results suggest that most expected climate impacts cannot be entirely mitigated (Battin et. al 2008; Beechie et al. 2010).

Removing or fixing historic structures will allow for uninhibited stream access for migrating and rearing fish thus increasing accessible habitat. This will restore connectivity and enhance instream spawning and rearing habitat, and increase complexity of riparian areas solely to improve instream and riparian conditions for all life stages of salmonids and other aquatic species.

Large wood and boulder placement as seen in Figure 2 will enhance habitat elements for rearing salmonids. Based on a literature review by Roni et al. (2014), the vast majority of studies on wood placement reported improvements in physical habitat (e.g., increased pool frequency, cover, habitat diversity) with most evaluations of fish response showing a positive response from salmonids—this is significant. Crispin et al. (1993) noted increased salmon spawning activity in an area where gravels accumulated behind LW. Bjornn and Reiser (1991) cited several studies that documented an increase in fish densities with higher levels of LW; and Fausch and Northcote (1992) documented that coho salmon and cutthroat trout production was greater in LW-dominated streams, where pools, sinuosity, and overhead cover were greatest.

Figure 2. A functioning and dynamic large wood debris jam consisting of large and small wood. Monkey Creek, Smith River NRA/Gasquet RD. USDA Forest Service photo.

The development of side channels will increase adult and juvenile rearing habitat where low flows and cooler water temperatures will provide refugia from mainstem temperatures. Streambank restoration projects will decrease direct sediment input into stream channels, thereby enhancing conditions for juvenile rearing within channel substrate. Riparian activities may not provide immediate benefits, but will provide long-term benefits by managing invasive plants and encouraging conifer growth (final EA p.79).

I find Alternative 2 will not only optimize the purpose to accelerate the recovery of North Coast salmon populations (i.e., federally listed threatened coho salmon, steelhead and Chinook salmon) and other Forest Service aquatic species, it incorporates extensive design features and mitigations to effectively avoid significant issues while minimizing unavoidable operational impacts to salmonids and other aquatic species. Alternative 2 also sets limits on cutting and falling trees to maintain nesting/ roosting/foraging/dispersal habitat for threatened wildlife species (final EA p. 114).

I also found that while Alternative 2 includes restorative actions to reduce sediment and remove invasive species, the activities themselves could generate sediment and increase the risk of spreading invasive plant and animal species. However, BMPs were incorporated into Alternative 2 to protect water quality and decrease the risk and rate of spread of invasive species (final EA Appendix B).

Fostering Partnerships

My decision will promote an aquatic restoration program that allows the forest to be responsive to partner-sponsored restoration projects on the SRNF, as well as the ability to respond quickly to available funds to accelerate the recovery of salmon and steelhead. Healthy fisheries resources are fundamental to fulfilling tribal trust responsibilities and obligations to local communities, recreation and commercial fishing industries.

It was apparent to me from reviewing public comments during the planning process that this project has widespread community support and my decision is long awaited for some. Individuals with questions about the project wanted to be more involved in the development and implementation of site-specific projects within their geographic area of interest. I believe this project will give us the opportunity to integrate instream restoration components with other projects across the forest and increase our opportunities to work together holistically in getting action done on the ground.

Public Involvement

Collaboration

In preparation for the California State Coastal Conservancy grant application, the Mid Klamath Watershed Council (MKWC; grant applicant) and SRNF reached out to watershed restoration partners throughout the area to provide letters of support to complete the *Aquatic Restoration Project*. These letters strongly supported a collaborative landscape-level approach as proposed in the final EA.

In 2012, collaboration began with stakeholders—including the Karuk, Yurok and Hoopa tribes, the CDFW, NMFS and local watershed restoration groups—who expressed a keen interest in exploring partnerships and collaborative funding opportunities with the Forest Service. All agreed to employ an *all lands* landscape/watershed approach to fisheries restoration planning, so more restoration work could occur.

On December 16, 2014 (Orleans), December 18, 2014 (Eureka), January 21, 2015 (Gasquet) and January 28, 2015 (Mad River), the SRNF hosted public meetings to discuss preliminary project plan

development and design, review preliminary maps and answer questions. Fifty-one (51) stakeholders attended these meetings.

Tribal Consultation

On June 14, 2013, the forest initiated formal tribal consultation pursuant to §106 of the National Historic Preservation Act (NHPA; 36 CFR 800.2(c)(2)) with 12 federally recognized tribes and conferred with four (4) non-federally recognized tribal groups. The Forest Service sent meeting notifications via email on During this period, forest resource staff coordinated with tribal representatives to discuss the project area, proposed and possible restoration activities and opportunities, as well as potential effects to traditional cultural properties (TCPs), sites, practices and beliefs. Letters announcing the availability of the draft EA were mailed and emailed at the beginning of the 30-day comment period.

Our local tribes continue to play an important role in salmonid restoration and other undertakings on the forest. Salmon are an important part of many tribes' traditional ceremonies, including the World Renewal Ceremony, the Salmon Festival, and the First Salmon Run, among many others. Tribal knowledge of the area and potential concerns about natural and cultural resources management within their ancestral territory is an important part of the project design and analysis.

On June 5, 2019, the Forest Service received a letter from the California State Historic Preservation Officer (SHPO) documenting §106 consultation for the *Aquatics Restoration Project*. Following staff review of the forest's submittal, the SHPO does not object to a finding of *no adverse effects* pursuant to 36 CFR 800.5(b). The SHPO requests a summary of activities be included in the forest's annual Region 5 Programmatic Agreement (R5 PA) report.

Scoping Period

The Forest Service initiated the 30-day scoping period on July 2, 2015. The scoping period ended on August 3, 2015. On July 2, 2015, a summary of the Proposed Action and maps were mailed and/or emailed to 327 individuals and groups, including federal, state and local agencies, tribes, nearby property owners, advocacy groups and interested public. On July 9, 2015, the Proposed Action information and maps were available on the SRNF Schedule of Proposed Actions (SOPA) for public review, inviting comments. The forest received eight (8) letters/emails during the scoping period. Seven (7) of these letters specifically expressed support for the programmatic approach. Several comments acted to modify the Proposed Action (Alternative 2), discussed in Chapter 2 of the final EA in detail.

During 2017 and 2018, the Forest Service continued to reach out to the public through the SRNF's social media sites (i.e., Facebook and Twitter) and informally through partners. On April 30, 2018, the forest sent an email to interested parties and agencies announcing the preparation of the EA.

Comment Period on the Draft EA

On October 28, 2018, the Forest Service initiated the 30-day comment period on the draft EA, with the publication of the opportunity to comment in the *Eureka Times-Standard*, as well as on the SRNF's

website and postings on social media. The letter initiating the 30-day comment period was mailed or emailed to approximately 395 individuals and organizations with a web link to the draft EA. Hardcopies or DVDs were mailed to those who made a request during the public meetings or during the scoping period. The Forest Service received one (1) written and two (2) oral comments from three (3) tribal entities, one (1) agency, and one (1) organization during the comment period.

Objection Period on the Draft Decision Notice, Finding of No Significant Impact and Final EA

The Pre-decisional Administrative Review (Objection Process) pursuant to 36 CFR 218 provides the sole means of administrative review on the *Aquatic Restoration Project*. On December 20, 2018, the legal notice commencing an Opportunity to Object was published in the newspaper of record (*Eureka Times-Standard*), initiating the 45-day objection filing period pursuant to 36 CFR 218 Subparts A and B. Following publication of the legal notice, an electronic copy was posted on the SRNF website within four (4) calendar days. No objections were received.

Alternative Considered in Detail, but not Selected

In addition to the Selected Alternative (Alternative 2), I considered the No Action Alternative (Alternative 1) as a baseline for comparison with Alternative 2. The environmental analysis and disclosure of the No Action Alternative provides an indication of what could happen if the Selected Alternative is not implemented. Although under the No Action Alternative, unavoidable short-term impacts from implementing the suite of aquatic restoration activities will not occur, the lack of action could result in discrete, indirect consequences, as described in Chapter 3 of the final EA.

The No Action Alternative does not respond to the Purpose and Need to improve instream and riparian habitat to accelerate the recovery of North Coast salmon populations, nor does it fulfill tribal trust responsibilities and obligations to local communities, recreation and commercial fishing industries. Instream habitat will continue to be limited for juvenile salmonids without restoring habitat connectivity and enhancing instream habitat complexity. Ponds and riparian areas will not have invasive species removed, nor will improvements occur for western pond turtles. No long-term beneficial actions will occur (final EA pp. 77, 90, 97, 103, 128, 141, 146).

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Finding of No Significant Impact

The USDA Forest Service (Forest Service) is required to make a determination on whether a project may have significant effects on the environment based on substantial evidence in light of public comments, facts, scientific evidence and expert opinion. The evaluation for the rationale determining no potential significant effects is disclosed in the Finding of No Significant Impact (FONSI), with consideration for the context and intensity of effects (40 CFR 1508.27(b); CEQ §15064).

I have reviewed and considered the *Six Rivers Aquatic Restoration Project Final Environmental Assessment* (*Aquatic Restoration Project* final EA) and documentation included in the entire project record, prepared using an integrated, interdisciplinary approach considering public comments, natural and social sciences, and quantitative and qualitative factors or indicators. I have determined that the Selected Alternative (Alternative 2) is not a major federal action and will not significantly affect the quality of the human environment; therefore, an environmental impact statement (EIS) is not required. Under the 1978 regulations written by the Council on Environmental Quality (CEQ; 40 CFR 1500-1508), significance is evaluated for both context and intensity.

I have determined there is no substantial evidence (considering the scientific information, expert analyses and knowledge of site-specific conditions gained from field visits) indicating Alternative 2, or any of its aspects, will cause a significant impacts(s) on the environment or cause significant impacts on the quality of the human environment (substantial adverse effects on human beings, either direct or indirect). As a result, an EIS will not be prepared.

Context

Federal agencies must analyze the significance of an action in several contexts, such as society as a whole (human), the affected region, the affected interests, and the locality. The potential for significant effects varies with the setting and is unique to natural, cultural and social resources. In the case of site-specific activities under Alternative 2, significance was considered in context of effects in the locality.

Although the project area encompasses 1,234 stream miles, numerous ponds and lakes across all administrative units on the Six Rivers National Forest (SRNF or forest), as well as on the Ukonom Ranger District (RD) of the Klamath National Forest (KNF), under SRNF delegated administrative authority, the context of Alternative 2 is limited in scope. The direct physical changes in the environment caused by phased activities occurring within streams and their immediate riparian zones that extend up to 150 feet from a channel's edge (i.e., large wood, invasive plant treatments) or greater (i.e., off-channel habitat) will be minor and of short-term duration. Individual project sites will, on average, be less than one (1) acre, with the possible exception of individual off-channel habitats. As individual projects will be phased and scattered across the forest, the context inherently avoids potential for significant impacts.

Under Alternative 2, as presented in Chapter 3 and Appendix C of the final EA, unavoidable, minor adverse effects will be mitigated, thereby limiting the extent of operational impacts and duration within

allowable thresholds under the SRNF and KNF land and resource management plans (LRMP or forest plan), consistent with standards and guidelines (S&Gs) and state regulations.

The analysis of reasonably foreseeable indirect and cumulative physical changes in the environment caused by the project will be constrained via annual design, activity thresholds per watershed and features to avoid significant effects.

Intensity

Intensity is a measure of the severity, extent, or quantity of effects, based on information from the effects analysis of this EA and the project record.

My finding of no significant impact is based on the context of the project and intensity of effects considering the 10 factors identified in 40 CFR 1508.27(b), CEQA §§15064.7 and 15065. My rationale for this finding is as follows:

1. *Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect would be beneficial.*

Multiple resources will be subject to both beneficial and short-term adverse impacts from implementing the *Aquatic Restoration Project,* including targeted threatened and endangered anadromous salmonids, co-located aquatic Forest Service Sensitive (FSS) species, botanical species, cultural resources, and recreation.

The *Aquatic Restoration Project* will restore aquatic habitats to recover Endangered Species Act-(ESA) listed salmon and steelhead, and achieve beneficial conservation goals for endemic species, while maintaining a diversity of botanical riparian-dependent communities (Resource Planning Act of 1974; National Forest Management Act of 1976 (NFMA); Forest Service Manual (FSM) 2670.21 and 2607.32). Under Alternative 2, the aquatic restoration activities will have an overall beneficial effect on ESA-listed salmonids and the watersheds they occupy. In pursuit of restoration actions, individual salmon and steelhead (and other aquatic FSS species) could be incidentally injured or killed by activities involving heavy equipment. These direct effects will be minimized through design criteria and are not considered significant (NMFS BO 2015). Alternative 2 implements restoration activities identified in the *Southern Oregon/Northern California Coast (SONCC) Recovery Plan* (NMFS 2014) and *Coho Recovery Plan* (CDFW 2005) in partnership with California Department of Fish and Wildlife (CDFW) and the National Marine Fisheries Service (NMFS), while meeting Aquatic Conservation Strategy (ACS) objectives. In developing the *Aquatic Restoration Project*, activities were identified that will also benefit other aquatic and riparian FSS species. Alternative 2 includes increasing habitat for western pond turtles, an FSS species (final EA pp. 78, 82, Appendix A).

The *Aquatic Restoration Project* will also result in beneficial and adverse impacts related to invasive species management. The project was developed to provide mutual benefits for other aquatic species, including removing invasive aquatic biota that currently compete with or consume native species. Where implementation of invasive plant control measures are undertaken, riparian conditions are expected to improve. With mitigations and project design features (PDF) in place, implementing Alternative 2 will

result in a low risk of invasive species introduction and spread. Treating invasive species may result in an improvement in botanical Sensitive species, where invasive species have displaced Sensitive species (final EA pp. 90, 98).

Alternative 2 incorporates the application of PDFs and standard resource protection measures to ensure there will be no adverse effects to cultural resources during implementation. In fact, this project stands to benefit cultural practices, which rely on salmonids, native plants, and overall river health. While the decline of native fish has altered traditional lifestyles and diet, Alternative 2 will rehabilitate fish-bearing waterways and ponds to support healthy aquatic and riparian ecosystems. Accomplishing this will assist in providing habitat for salmonids, anadromous fish, and other species adversely affected by prior undertakings (final EA pp. 141-142).

The activities will improve localized conditions of recreation sites and trails over the long term by removing invasive plants, and enhancing habitats and water quality, which benefit recreational experiences. Under Alternative 2, project site activities will incrementally enhance the unique biological diversity of anadromous fisheries; the wild, scenic and recreational potential of the Smith River, designated a Key watershed; the Smith River National Recreation Area (Smith River NRA; SRNF LRMP p. IV-34); and other designated wild, scenic and recreational river networks. Aquatic restoration activities may overlap in time and space with recreation projects, with impacts on recreation and trail resources ranging from minor, short-term visual effects to relocation or temporary closure of recreation sites and trails (final EA pp. 146, 149).

2. The degree to which the Proposed Action affects public health or safety.

Public Safety. To ensure public safety when heavy equipment is in use or tree felling is occurring under Alternative 2, temporary closures or public access restrictions may displace forest recreation users in the short term. To minimize these short-term disruptions, the Forest Service will place signage at or directly adjacent to recreation sites and trails, post notifications a minimum of one (1) week prior to operations, and coordinate with local user groups to redirect recreation activities to safe areas during operations. Instream and riparian restoration treatments include the potential for heavy equipment operation along 19 river segments designated as *recreational*; therefore, there will be short-term noise and scenic disturbances to rafters and visitors from heavy equipment engines and the presence of field crews. To mitigate potential instream safety hazards to kayakers and rafters, the use of rebar or cables will be avoided, and if used, will not be allowed to protrude above or immediately below the water line (final EA pp. 48, 50, 60, 149).

Hazards and Hazardous Materials. Project activities do not involve the use of hazardous materials, except for petroleum products needed to operate motorized heavy equipment and chainsaws. Water quality best management practices (BMP; final EA Appendix B) for equipment use near waterways will prevent introduction into streams, ponds, lakes and soils. All large machinery, stationary power equipment (e.g., generators, cranes), and gas-powered equipment with tanks larger than five (5) gallons used for instream work will be cleaned to remove petroleum accumulations, dirt and plant material (to prevent the spread of noxious weeds). Any equipment leaks will be repaired prior to entering the project area. Hazardous materials

will not be stored in or near recreational sites, developed campgrounds, water sources, trailheads/trails, or adjacent private land wells, and will be secured from public access (final EA pp. 50, 60, 62, 148, 180, 201).

The Clean Air Act of 1970 and its amendments provide for the protection and enhancement of the nation's air resources. The North Coast Unified Air Quality Management District (NCUAQMD) regulates the air in Humboldt, Del Norte and Trinity counties, considered to be "in attainment" of state and federal ambient air quality standards. The two (2) pollutants of greatest concern in the region are ozone and particulate matter. Particulate matter (PM) is fine mineral, metal, soot, smoke and dust particles suspended in the air. Alternative 2 will not influence air quality, as no burning is included, and access for heavy equipment will be dispersed and infrequent with insignificant levels of dust production and emissions. Therefore, Alternative 2 will be not result in significant effects to air quality (final EA pp. 15, 59).

Clean Water Act. The protection of water quality and quantity is an important part of the mission of the Forest Service (USDA Forest Service 2015). Management activities on National Forest System (NFS) lands are planned and implemented to protect the hydrologic functions of forest watersheds, including the volume, timing and quality of streamflow. The North Coast Regional Water Quality Control Board (NCRWQCB) Basin Plan contains water-quality objectives, implementation plans for meeting those objectives, and other policies of the State Water Quality Control Board and the federal government, applicable to any ground-disturbing actions that have the potential to affect water quality. The water quality standards in the Basin Plan that most closely apply to the activities are sediment and turbidity. The standard for sediment states that sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses. The standard for turbidity states that turbidity shall not be increased more than 20 percent above naturally occurring background levels. The Basin Plan states that controllable water-quality factors shall not cause further degradation of water quality when it has already been established as degraded, and efforts to restore the impaired beneficial uses of these watersheds must be made. The water-quality analysis of Alternative 2 focused on minimizing delivery of management-related sediment, improving the long-term sediment regime, and supporting beneficial uses in the project area (final EA pp. 83, 86, 179, Appendix B).

An interdisciplinary analysis of direct, indirect and cumulative effects was conducted. Based upon this analysis, the activities will not result in *cumulative watershed effects* to threaten impairment of short or long-term water quality conditions due to a) the low-impact nature of treatments (e.g., hand work), b) implementation of project design standards (e.g., retention of surface cover, retain 80% shade, etc.), and c) use of erosion and sediment control measures through BMPs. The project complies with the Clean Water Act, Porter-Cologne Water Quality Control Act, applicable water quality control plans, and the NCRWQCB waiver (Order No. R1-2015-0021). A waiver application or other required water-quality certifications will be obtained from the NCRWQCB prior to implementation.

3. *Unique characteristics of the geographic area such as the proximity to historical or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

Traditional Cultural Properties. The aquatic restoration activities within the boundaries of traditional cultural properties (TCPs), cultural landscapes, historic districts, etc., should not constitute an adverse

effect to these resources. The activities will not have a negative effect on the character-defining features of these resource classes that make them historically significant and NRHP eligible. If anything, this project will have a beneficial effect on TCPs (e.g., restoring habitat for salmon). Prior to implementation of specific projects, additional tribal consultation and coordination will occur on a case-by-case basis, as determined through pre-project development and planning (final EA Appendix C).

Wetlands and Floodplains. No wetlands per Executive Order (EO) 11990 exist within the project area; therefore, there will be no effect to these resources from implementing Alternative 2. Executive Order 11988 – Floodplain Management (1977) requires federal agencies to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid the direct or indirect support of floodplain development. If an action must be located in a floodplain, EO 11988 requires that agencies minimize potential harm to people and property, and to natural and beneficial floodplain values. Under Alternative 2, the activities will act to restore connectivity and inundation of floodplains and increase complexity of riparian areas. Any side channels constructed will be within existing channels and designed to not impact people or property. Therefore, there will be no significant effects to these resources (final EA p. 67).

Parklands, Prime Farmlands, Agricultural and Forestry Resources. There are no parklands, prime farmlands, agricultural or forestry resources within or immediately adjacent to the project area. Therefore, there will be no significant effects to these resources or changes to forest conditions from implementing Alternative 2 (final EA p. 62).

Research Natural Areas (RNA) are areas allocated to research, education, and to protect biodiversity on NFS lands. Although Alternative 2 allows entry into RNAs within the project area, the restoration activities are restricted to manual methods only. In additional, coordination and approval from the Pacific Southwest Research Station (PSW) will occur prior to implementation. Therefore, there will be no significant effects to these resources (final EA p. 8, Appendix C).

Wilderness Areas. Land management activities within wilderness must adhere to the Wilderness Act of 1964, the California Wilderness Act of 1984, and regulations pursuant to those acts and Forest Service Manual (FSM) direction. The project area overlaps 7,975 acres of wilderness along with 225 miles of streams in the Siskiyou, North Fork, Trinity Alps, Lassics, and North Fork Eel wilderness areas with treatments limited to manual handwork. Although Alternative 2 allows for restoration in streams within designated wilderness, activities are limited to manual methods and access will be restricted to existing roads and routes. Therefore, there will be no significant effects to these resources (final EA pp. 28, 53, 60, 148-149).

Wild, Scenic and Recreational Rivers. Under Alternative 2, 20 of 35 sites planned for a combination of manual labor and heavy equipment are in proximity to river segments classified as *scenic* or *recreational*, designated components of the National Wild and Scenic (WSR) River System or rivers recommended in the SRNF and KNF LRMPs for inclusion in the national system. Anadromous fish are an outstanding remarkable value (ORV) associated with the wild and scenic river designation within NFS lands (LRMP IV-26, IV-56). Under Alternative 2, restoration treatments include the potential to use heavy equipment along one (1) segment of a designated *scenic* river. The activities will not affect the free-flowing condition of the river and will instead lead to improvement to the ORV by improving rearing habitat; therefore, §7 of the

WSR Act is not required (WSR Act §7 (a)). There will be no allowance for heavy equipment treatments within the *wild* portions of the WSR designation, applicable to segments of the Smith, Trinity, and Eel rivers (WSR Act §2(a)(ii)). The forest plans allow for manual instream restoration activities for fisheries in both wild and scenic portions of these rivers (SRNF LRMP IV-26, IV-56; KNF LRMP p. 4-90, 4-149). Therefore, there will be no significant effects to these resources (final EA pp. 60, 146, 148).

Inventoried Roadless Areas. Approximately 20 percent of the SRNF lies within inventoried roadless areas (IRA) per the 2001 Roadless Area Conservation Rule. Combined, these IRAs encompass 199,000 acres; however, the project area does not overlap with IRAs. Therefore, there will be no significant effects to these resources (final EA p. 146).

Recreation Opportunity Spectrum. Heavy equipment use within the Recreation Opportunity Spectrum (ROS) *Semi-Primitive Non-Motorized* classification is not permitted. The project will not build new roads or access points, and all heavy equipment use is via existing roads; therefore, there are no significant effects to these resources (final EA pp. 147-149).

Retention and Partial Retention Management Areas Visual Quality Objectives. Visual quality objectives ((VQO; FSH 462 and 559), which define nationally established principles and methods for managing scenery integrity and quality, apply to site-specific projects visible from the forest's inventoried *Maximum Modification*, *Moderate* and *High Sensitivity Viewpoints* (Level 1 and 2) and *Preservation* classifications. The project design will achieve the VQO objectives for the *Preservation* classification upon completion of operations. For all other management areas (MAs), compliance will be achieved within three (3) years (KNF LRMP p. 4-116). Along State Highways 96, 299 and 36, and US Highway 199, eligible for designation as State Scenic Highways, treatment design will achieve the *Partial Retention* VQO for the middleground viewshed. The tree removal treatments will blend well to conserve the scenic quality and integrity of the project area. Therefore, there will be no significant effects to these resources (final EA pp. 147-148).

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The term *controversial* in this context refers to cases where substantial scientific dispute exists as to the size, nature, or effects of a major federal action on some human environmental factor. Consideration was given to effects of the project on fisheries, wildlife, recreation and cultural values. Responses to the public outreach indicate a high level of support and enthusiasm.

The affected environment was considered in light of the living cultures and native practices within the SRNF. In making a determination of affect, it is understood that impacts considered shall include not only the archeological record, but also its living descendants who still lay claim to the cultural heritage alive within these lands. With that in mind, this analysis considered traditional knowledge, including but not limited to, traditional ecological knowledge (TEK). Identifying plants and animals that have a cultural use or other underlying significance is an integral component of the SRNF heritage management plan. No adverse effects are anticipated for heritage resources within the project area. In fact, the *Aquatic Restoration Project* has great potential to benefit cultural sites and practices throughout the forest. Restoration of fish habitat will

allow traditional fishing practices to pervade and support traditional ways of life practiced by tribes within the SRNF. Moreover, removal of invasive plants and propagation of native species will increase quality and accessibility of culturally utilized plants (final EA pp. 138, 140, 143).

The SRNF manages 46 developed recreation sites on the forest, including campgrounds, viewpoints, picnic areas, trailheads and horse camps. Developed hiking, horse, and off-highway vehicle (OHV) trails are located throughout the SRNF. Under Alternative 2, design features and mitigations will provide for high-quality environments that are healthful and pleasing to the senses (CEQA §21000(b)). Future opportunities for collaborative development of natural resource-based enterprises will be facilitated (SRNF LRMP p. IV-113). The design of Alternative 2 will ensure the character and quality of recreational environments will be maintained to avoid significant effects. The application of mitigations will minimize minor, unavoidable effects to resource values for which the Wild, Scenic and Recreational rivers were designated, and to protect features and values, described in the forest plans (KNF p. 4-90, 4-149; SRNF IV-27, IV-56; final EA pp. 147-148).

Executive Order 12898 – Environmental Justice requires an assessment of whether there will be disproportionate effects to minority or low-income populations. Although there are minorities and low-income populations living in the North Coast California area, they will benefit from the project. Environmental justice means that, to the greatest extent practicable and permitted by law, all populations are provided the opportunity to comment before decisions are rendered on, are allowed to share in the benefits of, are not excluded from, and are not affected in a disproportionately high and adverse manner, by government programs and activities affecting human health or the environment. There will be no discernable differences between Alternative 2 and Alternative 1 (No Action) regarding effects on minorities or the civil rights of any American citizen. Alternative 2 will not result in disproportionately high or adverse effects to human health, high or adverse environmental effects, substantial environmental hazard, or affects to differential patterns of consumption of natural resources. Extensive scoping did not reveal any issues or concerns associated with the principles of environmental justice.

5. *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

Alternative 2 will achieve objectives identified in the SRNF and KNF LRMPs. Project design features and resource protection measures represent standard operating procedures (SOP) considered to be effective resource protection practices that have been validated via monitoring over time. Recently released technical guidance, *USDA Guidance for Stream Restoration* (Yochum 2018), provides a bibliographic repository of information to assist with the collaborative process of planning, analyzing, and designing site-specific stream restoration projects, including information on the effectiveness of project designs.

Appendix C of the final EA outlines the process for designing and implementing a site-specific project. In addition to collaboration with tribes, landowners and restoration community, full interdisciplinary team (IDT) review of project components will reduce existing risk factors and address conditions that are unknown at this time. At any time, if an individual project is developed that does not fit under the Region 5 Programmatic Agreement (R5 PA), the forest will consult with the State Historic

Preservation Officer (SHPO) and local tribes on a project-specific basis. In the case of inadvertent discoveries of heritage resources during implementation, work will cease and both the Forest Service heritage program manager and affected tribes will be notified. All stipulations in the cultural resource inventory report's discovery plan (Smith 2018) for the *Aquatic Restoration Project* will be followed.

The availability of natural resources contributes to the quality of life for many local tribes and county residents, with families experiencing positive benefits from food gathering from healthy fisheries. Alternative 2 will also provide job opportunities (final EA p. 6, Appendix C).

Relationships between local, short-term uses of the human environment and maintenance or enhancement of long-term productivity. Short-term heavy equipment use is expected to change the human environment due to noise disturbances and the presence of field crews. Since few trees will be cut, and most projects are remote and will be spread across multiple watersheds, cutting and falling trees will not alter long-term effects and should not appreciably change the human environment after the project has been completed. Therefore, any disturbance to nearby neighbors and natural resources will be minimal (final EA pp. 149, 157, Appendix C).

6. *The degree to which the action may establish precedent for future actions with significant effects or represents a decision in principle about a future consideration.*

The project does not set a precedent for future actions that may have significant effects, nor does it represent a decision in principle about a future consideration. All site-specific projects implementing activities identified in Chapter 2, analyzed in Chapter 3, and listed in Appendix D of the final EA will undergo additional collaboration and interdisciplinary evaluation through a Project Implementation and Checklist Process (final EA Appendix C and attached to this document).

Irreversible or Irretrievable Commitments of Resources. An irreversible commitment of resources refers to a loss of non-renewable resources, such as mineral extraction, heritage (or cultural) resources, or to those factors which are only renewable over a long time. Irretrievable commitment applies to losses that are temporary, such as the use of renewable natural resources. Trees felled for large wood (LW) instream recruitment are considered irretrievable, but the number to be cut will not affect stand structure, forest canopy closure, productivity, or natural processes. Under Alternative 2, there will be no irreversible or irretrievable commitments of resources (final EA pp. 53, 115).

Adverse Environmental Effects that cannot be Avoided. In pursuit of restoration actions, individual salmon and steelhead (and other aquatic Forest Service Sensitive (FSS) species) may be incidentally injured or killed by activities involving heavy equipment or moving LW. These direct effects will be minimized through design criteria and are not considered significant at any population level (NMFS BO 2015). Alternative 2 will have short-term adverse environmental effects due to increased sediment and turbidity, particularly during heavy equipment use. Increased turbidity during the summer and early fall may result in short-term behavioral changes of juvenile salmonids (Newcombe and Jensen 1996). These effects will be minimized by timing operations with flows/onset of wet weather and implementation of water-quality BMPs (final EA Appendix B) to prevent sediment from entering stream

channels. Therefore, the project will not result in significant effects that will preclude a future decision (final EA pp. 78, 81, 83).

Energy Requirements of Alternatives. The implementation of the *Aquatic Restoration Project* will require the use of various amounts of fossil fuels. Fossil fuel energy is not retrievable and is not in short supply. Therefore, use will not have an adverse effect upon continued availability of these resources.

7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.*

The IDT evaluated the project in context of past, present, and reasonably foreseeable actions, and described the potential cumulative effects in the EA. Based on this analysis, it is not reasonable to anticipate a cumulatively significant impact on the environment based on the nugacity of effects. The project contributes non-significant cumulative effects for the following resources:

- **Fish.** During and shortly after implementation of restoration activities, the possibility exists that minor adverse impacts could occur relative to direct harm, harassment and increased turbidity locally. However, the context and intensity is limited by design during the initial stage of each project ensuring effective design and review with consideration of new information and changing conditions. Although the majority of the restoration activities could result in short-term impacts, they will either be effectively minimized or rectified through design and mitigations with annual, watershed-scale limits to avoid potential for significant cumulative effects (final EA p. 81; WFRPBA).
- **Water Quality.** The effects of sediment entering stream channels will be minimized by General Aquatic Conservation Measures (GACM), design criteria (final EA Appendix A), and water quality BMPs (final EA Appendix B) considered SOPs for instream enhancement, as defined by consultation with NMFS and CDFW salmonid restoration programs. These project design criteria (PDC) and BMPs aim to minimize the amount of fine sediment disturbance and associated turbidity during all stages of the project. Alternative 2 sets maximum treatment allowances by restoration activity to accommodate the variability in context of potential effects (intensity) to natural resources. Activities under Alternative 2 will span 21 5th-field watersheds to incrementally improve aquatic habitat and protect water quality. The upper limits of actions on 5th-field watersheds will constrain the affected area to less than 4 percent of the total watershed acres. Therefore, the intensity of activities will not contribute to adverse cumulative effects, avoiding significant watershed effects. The cumulative watershed effects (CWE) analysis indicates the impact intensity for adverse watershed effects under Alternative 2 will remain below the threshold of concern (final EA p. 84).

8. *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.*

The Forest Service researched prior archeological surveys (an estimated 3,900 acres or approximately 10%) within the manual restoration areas. The sampling of use patterns associated with the area indicates streambanks, lakeshores, and the surrounding areas have been used by both Pre-Contact and historic peoples. The design features and mitigations under Alternative 2 will ensure there will be no adverse impacts to cultural heritage or features. Buffer zones may be established on a case-by-case basis for highly sensitive areas. These buffer zones will be marked prior to implementation and avoided. Tribes will be consulted when working in and around Native American TCPs (final EA pp. 57, 60, Appendix C).

Appendix C of the final EA (and attached to this document) outlines the process for designing and implementing a site-specific project. In addition to collaboration with tribes, landowners and restoration community, full IDT review of project components will reduce risk factors, as well as address future unknown conditions. In the case of inadvertent heritage resource discoveries during implementation, work will cease and both the forest's heritage program manager and the affected tribes will be notified.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The SRNF does not expect the project to have significant adverse effects to threatened or endangered species or habitat under the ESA. The project will fully comply with the ESA, as amended, and is consistent with the conservation needs of FSS species. It will not contribute to the need to list any FSS species, either under the provisions of the ESA or other provisions of the manual (FSM 2670; final EA pp. 80, 83, 99, 115, 120, 130).

The ESA of 1973 (16 USC 1531 et seq.) requires any action authorized by a federal agency to not jeopardize the continued existence of a threatened or endangered species, or result in the destruction or adverse modification of the critical habitat (CH) of such species. Section 7 of the ESA, as amended, requires the responsible federal agency to consult with the US Fish and Wildlife Service (USFWS) and NMFS concerning endangered and threatened species under their jurisdiction.

The California Endangered Species Act (CESA) was enacted in 1984 to parallel the federal ESA and allows the California Fish and Game Commission (CFGC) to designate species, including plants, as threatened or endangered. Under CESA, CDFW may permit *take or possession* of threatened, endangered, or candidate species for scientific, educational, or management purposes, and may also permit *take* of these species incidental to otherwise lawful activities if certain conditions are met.

Fisheries. The *Watershed and Fisheries Restoration Program BA* (WFRPBA 2015), along with the site-specific review process in this final EA (Appendix C), and corresponding NMFS biological opinion (BO; NMFS 2015) satisfies §7 consultation requirements for ESA-listed anadromous fish. Consultation on the *Watershed and Fisheries Restoration Program* (WFRP) began with NMFS in 2014. On December 15, 2015, they concluded that the WFRP implemented recovery actions, and based on the best scientific and commercial information available, the WFRP is not likely to jeopardize the continued existence of the SONCC evolutionary significant unit (ESU) of coho salmon or Northern California (NC) steelhead distinct population segments (DPS), and is not likely to result in the destruction or adverse modification of designated CH for these species (CEQA §2053). NMFS expects that certain activities of the WFRP

may result in incidental *take* of SONCC coho salmon and NC steelhead, providing non-discretionary reasonable and prudent measures, and terms and conditions that further reduce anticipated incidental *take* of SONCC coho salmon and NC steelhead. These provisions were addressed through GACM, PDC (aka PDFs) and SOPs, described in Chapter 2 and Appendix A of the final EA.

NMFS has also concurred with the SRNF's determination that the WFRP *may affect*, but is *not likely to adversely affect*, California Coastal (CC) Chinook salmon ESU (*O. tshawytscha*) and its designated CH. The essential fish habitat (EFH) consultation was prepared pursuant to §305(b) of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (MSRA). Project activities described in the final EA, including Appendix A, are consistent with that consultation effort along with the corresponding BO (December 14, 2015), including meeting recovery goals for SONCC coho salmon and NC steelhead. In the event anadromous salmonids are proposed for listing under the ESA, SRNF will re-initiate consultation with NMFS (final EA p. 85; WFRPBA).

Wildlife. The draft wildlife biological assessment (BA) for the *Aquatic Restoration Project* (*Wildlife BA/BE* 2018) was submitted to the USFWS for review. Through the Level 1 process, the project activities and design features to reduce potential effects to northern spotted owl (NSO) and marbled murrelet (MAMU) and their habitat were reviewed. Based on the PDFs and the project implementation process (final EA Appendix C and attached to this document), the *Aquatic Restoration Project* will result in a *not likely to adversely affect* determination for NSO and MAMU (Wildlife BA 2018). Mitigations described in Chapter 2 of the final EA will be applied to prevent adverse impacts to habitat and limited operating periods (LOP) will be applied as needed to prevent noise disturbance during the breeding season (final EA pp. 54-55; Wildlife BA/BE). On February 28, 2019, USFWS concurred with the Forest Service determination for NSO, NSO Critical Habitat (CH), MAMU and MAMU CH.

Botanical. There are no occurrences of federally listed endangered botanical species within the project area. Therefore, there will be no effects (direct or indirect) under Alternative 2 per §7 of the ESA, and consultation with the USFWS is not required for *no effect* determinations (final EA p. 99).

10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The following are consistency requirements under the SRNF and KNF land management plans, including direction given post-LRMP decisions:

Aquatic Conservation Strategy Consistency. National Environmental Policy Act (NEPA) decisions must be consistent with the ACS, including consistency with the nine (9) ACS objectives described in the 1994 Northwest Forest Plan Record of Decision (NWFP ROD p. B-10) and in the May 22, 2007 Memorandum. Alternative 2 will maintain and actively attain the ACS in the sub-watersheds in the short and long term by maintaining and restoring the nine (9) ACS objectives; therefore, Alternative 2 is consistent with the ACS (final EA p. 13).

National Forest Management Act – Best Management Practices. Use of water quality and other resource protection BMPs in national forests are required by the NFMA, and prescribed in the LRMPs. Consequently, all land management activities, must be implemented using BMPs for control of non-point

source water pollution (USDA Forest Service 2011). Applicable BMPs for sediment and petrochemicals are identified for the project and are listed in Appendix B of the final EA; therefore, Alternative 2 is consistent with the NMFA (final EA p. 20, Appendix B).

Special Habitat – Late Successional Reserves. Direction from both LRMPs on this MA consists of special provisions for peregrine falcon, bald eagle and late-successional reserves (LSR). The LRMPs include a provision for the Special Habitat MA around peregrine falcon eyries. Alternative 2 proposes aquatic restoration treatment within the Special Habitat area; however, no known peregrine falcon eyries are located within 0.5 miles of treatments. If treatments occur within 0.5 miles of a known peregrine eyrie, surveys will be conducted. Alternative 2 will not impact suitability of nesting habitat for peregrine falcon; therefore, it is consistent with the management of this area and will not be analyzed further for this project (final EA pp. 27, 107, 113).

Survey and Manage. The NWFP includes S&Gs for Survey and Manage (SM) species associated with late-successional forests (USFS et al. 2001). Recent direction for SM species is from the May 13, 2014 *Direction Regarding the Survey and Manage Standards and Guidelines,* which applies to projects initiated after April 30, 2015. Specifically a) a reference to the December 2003 species list and categories, except for the red tree vole, which remains as Category C across its range; and/or b) the four (4) categories of projects exempt from the SM S&Gs, as stipulated by Judge Pechman (October 11, 2006 "Pechman exemptions").

Of the Pechman exemptions, one (1) includes activities associated with riparian and stream improvement:

> *Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement of large wood, channel and floodplain reconstruction, or removal of channel diversions.*

In light of this exemption, pre-disturbance surveys are not required for the project. The S&G pertaining to management of known sites will apply to this project through the interdisciplinary review process (final EA pp. 14, 108, Appendix C).

Forest Service Sensitive Species. In keeping with FSM 2670 (USDA Forest Service 2005), S&Gs from the SRNF LRMP (USDA Forest Service 1995) state that before the NEPA process is completed, projects will be assessed through a biological evaluation (BE) to determine if management activities are likely to adversely affect sensitive plant resources. After completion of the evaluation, activities will be prohibited if they are found likely to jeopardize the continued existence of the species or the maintenance of the viable populations throughout their existing range. Appropriate mitigation measures will be required if activities are not prohibited. A BE was prepared for wildlife, aquatic and botanical species (Sensitive Species BE 2018). For terrestrial and aquatic species, it was determined that Alternative 2 will have *no effect* on 11 species and a *may impact, not likely to jeopardize* the continued existence for an additional 20 species (Sensitive Species BE 2018). The project will have no effect on any FSS plant species.

Management Indicator Species. Under NFMA, the Forest Service is directed to "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives" (PL 94-588 §6 (g)(3)(B)). Application of forest S&Gs, and threatened and endangered wildlife and botany design features will result in little change to the Snag Assemblage or Down Woody Debris Assemblage. The remainder of the MIS assemblages—Tanoak/Madrone Assemblage and Black Oak/White Oak Assemblage—will have little to no disturbance or changes to habitat or species, based the limited amount of habitat within the project area, and no change to the dominant forest type and structure. Alternative 2 will result in improved habitat condition for River and Stream Species Association, Marsh/Lake/Pond Assemblage and the Bog/Seep/Spring/Wet Meadow Assemblage (final EA p. 133).

Neotropical Migratory Bird Species. On December 12, 2008, a Memorandum of Understanding (MOU) was signed by the Forest Service and the USFWS to promote the conservation of migratory birds. This MOU directs agencies to evaluate the effects of actions on migratory birds, focusing first on species of management concern along with their priority habitats and key risk factors. As riparian restoration activities are implemented in the California Coastal and Western Klamath regions, these activities should be closely monitored with respect to their effect on bird abundance and demography. For the SRNF and KNF, the migratory bird species (MBS) of management concern include species listed under the ESA as threatened or endangered, designated by the Regional Forester as Sensitive species, and species listed under S&Gs 8-21 through 8-34 of the KNF LRMP as MIS for project-level assessments (MIS Report, available from SRNF). Alternative 2 will promote recreating conditions and ecological processes conducive to migratory songbirds (final EA p. 134).

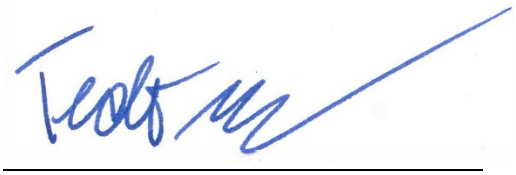
Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (MSRA), as amended by the Sustainable Fisheries Act of 1996 (PL 104-267), requires federal agencies to consult with National Oceanic and Atmospheric Administration (NOAA) Fisheries on all actions authorized, funded, or undertaken by the agency that may adversely affect EFH. All EFH assessments must include 1) a description of the action; 2) an analysis of the effects, including cumulative effects of the action on EFH, the managed species and associated species, including life history stages potentially affected; 3) the federal agency's views regarding the effects of the action on the EFH; and 4) mitigation, where applicable (50 CFR 600.920(g)(2)).The information prepared in a BA for formal or informal consultation under the ESA (50 CFR 402.12) may serve as the EFH assessment, curtailing the need for separate analysis (final EA p. 16).

The *Aquatic Restoration Project* will have no impact on the following:

- **Greenhouse Gas Emissions.** The project activities will not generate greenhouse gas emissions.
- **Land Use and Planning.** The project is compliant with LRMPs and does not involve changes to private land use or county zoning regulations.
- **Mineral Resources.** The project does not involve the extraction of mineral resources from either public or private lands.
- **Population and Housing, Public Services, Transportation/Traffic or Utilities and Service Systems.** The project is entirely on NFS lands and will have no impact on these amenities.

Implementation Date

Implementation of this project will likely begin in summer 2019.



6/19/19

TED O. MCARTHUR
Forest Supervisor
Six Rivers National Forest

Date

Errata

In Chapter 4 of the final EA, Table 4-1, Jeanne Goetz is inadvertently listed as an interdisciplinary team (IDT) member representing heritage consultation. This correction documents that Jeanne Goetz did not participate; rather, Jennifer Dyer, Heritage Program Manager of the Six Rivers National Forest performed this service.

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Appendix. Project Implementation Process & Checklist (Appendix C in Final EA)

Introduction

The following section describes the implementation and checklist process steps required prior to project implementation. While all stages will occur, the time spent in each stage depends on the complexity of the individual project activities and the specific resources potentially affected. This project implementation process will function to avoid or reduce incidental negative impacts to natural and cultural resources, the process steps aim to optimize the potential beneficial integrated outcomes for restoration.

As indicated in Chapter 2 of the final EA, during the development of individual site-specific projects, the General Aquatic Conservation Measures (GACM) and the applicable activity-specific project design criteria (PDC) from the *Watershed and Fisheries Restoration Biological Assessment* (WFRPBA) will be fully incorporated into the design, applied during implementation and monitored (Appendix A). During the site-specific project development phase, an IDT will identify which resource specific project design features (PDFs) and mitigations (best management practices (BMPs) and limited operating periods (LOPs)) will be required to mitigate effects to avoid significant impacts.

The following pages describe the implementation and checklist process steps:

Stages of Project Development

- Stage 1 and 2 – Iterative Process
  - Developing the site-specific project – implementation description.
  - Collaboration with interdisciplinary team (IDT), interested publics, and tribes.
  - Refine project as needed.
- Stage 3 – Line Officer Approval – signed compliance checklist
- Stage 4 – Detailed Design, Funding, Permitting and Contracting
- Stage 5 – Pre-Implementation
- Stage 6 – Implementation
- Stage 7 – Monitoring/Reporting

Site-Specific Project Description (Stages 1 through 3)

Summary of the Action[1]

- Activity type with site-specific details.

[1] Assumes stream surveys have been completed and a limiting factor analysis completed to determine site-specific restoration needs.

- Location with map, photos, etc.
- Habitat and species targeted.
- Connected actions (which access roads, large wood (LW) sources, etc.).

LRMP – Management Areas and Land Use Conformance

- Identify SRNF/KNF management areas.
- USDA Forest Service facilities potentially impacted (recreation sites, lands).
- Tribal use areas.

Identification of Site-Specific Design Elements, Surveys, and Risk Assessments

- General Aquatic Conservation Measures (GACM).
- Applicable PDC for activity type.
- Project design features by resource area, including need for surveys.
- Additional mitigations based on site-specific conditions.
- Review of all ongoing and foreseeable actions would occur to ensure no significant cumulative impacts would occur.

Coordination

- Determine if project fits under California Environmental Quality Act (CEQA) exemption (§15333) if necessary.
- Notify landowners.
- Identify potential cultural gathering in project area.
- Closures necessary for recreation or cultural practices.

Line Officer Sign-off

- Document design features and have line officer sign-off for project to move forward.

Approved Project Implementation (Stages 4 through 7)

The level of detail necessary for Stages 4 through 7 will be identified in Stages 1 and 2 with continued coordination with IDT, landowners and stakeholders.

Prior to on-the-ground implementation and as identified in Steps 1 and 2, the following agency coordination will occur: obtaining a waiver application or other required water-quality certifications from the North Coast Regional Water Quality Control Board and site-specific review from USFWS or NMFS when necessary.

Resource Project Design Checklist and Line Officer Approval (Stage 3)

Resource Project Design and Forest Plan Compliance Checklist

Project Name: _____ **Date:** _____

Activity Type: _____ **Location:** _____

Project Description: _____ **Ground Disturbing: Y ☐ / N ☐**

Timing of Project: _____ **Date of LOP:** _____

Watersheds: _____

Location Identified in the ARAP? _____

Partners: _____

Funding Source Identified? _____

Tribal Consultation Complete? _____

Adjacent/Downstream Private Land Holders Notified. _____

Resource and Land Management Consistency

- ☐ Y/N Wilderness: _____
- ☐ Y/N Special Habitat – Late-Successional Reserves
- ☐ Y/N Wild and Scenic River
- ☐ Y/N Special Interest Areas
- ☐ Y/N Research Natural Areas
- ☐ Y/N Semi-Primitive Non-Motorized Recreation Areas
- ☐ Y/N NACUA/TCP affected

Design Feature Consistency

- ☐ PDF for Heritage addressed (Heritage Surveys; Avoidance areas)
- ☐ PDF for Botany addressed (Sensitive Plant Surveys, S&M known sites)
- ☐ PDF for Invasive Species (Risk of spread – Terrestrial and Aquatic)
- ☐ PDF for Wildlife addressed (TES species, S&M known sites)
- ☐ PDF for Water Quality addressed
- ☐ PDF for Recreation addressed

Comments: _____

Survey Needs: _____

Project Design Criteria and Forest Plan Compliance Checklist

I have reviewed this project and have determined it is within the Project Design Criteria identified for my resource.				Notification
Resource	**Signature**	**Date**	**Comments**	**60 Days Req'd?**
Heritage				
Botany				
Wildlife				
Fish*				
Hydrology*				
Range				
Soils				
Recreation				
Lands and Special Uses				
Engineering				
Fuels / Fire				
Silvicultural				

* Ensure that an experienced fisheries biologist or hydrologist is involved in the design of all projects covered by W*atershed and Fisheries Restoration Program BA/BO.* The experience should be commensurate with technical requirements of a project.

Line Officer Signature: _____ **Date:** _____

Hardcopy Signatures Required