Work Plan and Accomplishments Report Guidance and Template
FY21 FWS NFHAP Project Funding Cycle

Fish Habitat Partnership: California Fish Passage Forum

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General Instructions

1. Complete Section 1 if applying for operating support funding, only.
2. Complete Sections 1, 2, and 3 if applying for both stable operational support and competitive, performance-based funds. See attachment to this template for additional guidance and definitions for selected performance criterion.
3. If you have questions about this template, please contact your Regional Coordinator.
4. Email one electronic copy of the completed report by 11:59 pm local time, **January 15th 2021** to your respective Regional Coordinator and the National Coordinator (listed below).
5. Incomplete reports will not be considered for funding. Information received after the submission deadline will not be considered.

NFHAP Regional and National Coordinator List

FWS Legacy Region	Coordinator	Phone	E-mail	FHPs in Region
1	John Netto	503-231-2270	John_Netto@fws.gov	- Hawaii FHP - Pacific Marine and Estuarine Partnership - Pacific Lamprey FHP
2	Karin Eldridge	505-248-6471	Karin_Eldridge@fws.gov	- Desert FHP - Reservoir FHP
3	Jessica Hogrefe	612-713-5102	Jessica_Hogrefe@fws.gov	- Driftless Area Restoration Effort - Fishers and Farmers Partnership - Great Lakes Basin FHP - Midwest Glacial Lakes Partnership - Ohio River Basin FHP
4	Tripp Boltin	843-819-1229	Walter_Boltin@fws.gov	- Southeast Aquatic Resources Partnership
5	Callie McMunigal	304-536-1361, x7342	Callie_Mcmunigal@fws.gov	- Atlantic Coastal FHP - Eastern Brook Trout Joint Venture
6	Bill Rice	303-236-4219	William_Rice@fws.gov	- Great Plains FHP - Western Native Trout Initiative
7	Michael Daigneault	907-786-3523	Michael_Daigneault@fws.gov	- Kenai Peninsula FHP - Mat-Su Basin Salmon Habitat Partnership - Southwest Alaska Salmon Habitat Partnership - Southeast Alaska FHP

8	Lisa Heki	775-861-6354	Lisa_G_Heki@fws.gov	- California Fish Passage Forum
HQ	Michael Bailey	703-785-7126	Michael_Bailey@fws.gov	- National Coordinator

General Guidance for Completing Section 1. Justification for Stable Operating Support

The intent of Section 1 is to ensure that FHPs receiving operating support are thriving, active organizations making concerted efforts to achieve fish habitat conservation goals and objectives established by both the FHP and National Fish Habitat Action Plan.

Narrative responses should provide an overview of all projects and activities supported by FWS funds and all other sources or in-kind contributions over the previous three federal fiscal years (FY 2017, 2018, and 2019 or October 1, 2016 through September 30, 2019) and anticipated projects and activities over the next three federal fiscal years (2021, 2022, and 2023 or October 1, 2020 through September 30, 2023).

Project summaries should not be an itemized list of individual projects. Project summaries should instead focus on the associated outputs and outcomes of the habitat conservation projects implemented by the FHP *(e.g., completed ten fish passage projects resulting in X number of miles reopened, link to strategic plan, objective addressed, outcomes, socioeconomic impacts, etc.)*

Activity summaries should focus on salient operational and programmatic activities (*e.g. update strategic plan, improved capacity of FHP, monitoring and assessments, outreach events, socioeconomic impacts, etc.*). Day-to-day FHP activities (e.g. the number of meetings or teleconferences an FHP representative participated in) are not pertinent to this performance report and should not be included in this summary.

Please make efforts to keep your justification in Section 1 concise. Do not exceed six pages.

Additional, supplemental guidance for completing the Annual Work Plan and Accomplishments Report and example narratives can be found in the Appendix section of this document.

Section 1. Justification for Stable Operational Support (maximum 6 pages)

From October 2016 through September 2019 (FY2017-FY2019), the California Fish Passage Forum (Forum) supported 13 fish passage design and barrier removal projects in California, ultimately opening access to more than 162 miles of spawning and rearing habitat for threatened and endangered anadromous fish. A total of $534,141 in Forum contributions leveraged $9,368,549 in partner contributions to support $9,902,690 in fish passage barrier removal projects in California and other Forum initiatives.

In addition to supporting fish passage barrier removal projects, the Forum provided support to projects that contribute to monitoring and assessment of fish passage barrier removal in California. For example, the Forum also funded a two phased evaluation in FY2019 to assess barriers to lamprey passage in the Sacramento Basin, field test protocols and Forum-developed tools and products, and inform data inputs to the California Passage Assessment Database (PAD), BIOS, and the Forum's decision support tool FISH*Pass*. Additionally, with support from a Multi-State Conservation Grant (MSCG), in 2017 the Forum joined a multi-agency collaborative effort already underway by NOAA (Restoration Center and California Conservation Corps Veterans Corps Fisheries Program, California Department of Fish & Wildlife (CDFW), U.S. Forest Service (USFS) and the Pacific States Marine Fisheries Commission (PSMFC) to monitor aquatic species and ecological response of small dam removal in Southern California to support endangered southern steelhead recovery. The Forum's funding supported the third year of continued small dam removal monitoring on six dams, capturing pre-dam removal data to better understand the influences of sediment released by small removal.

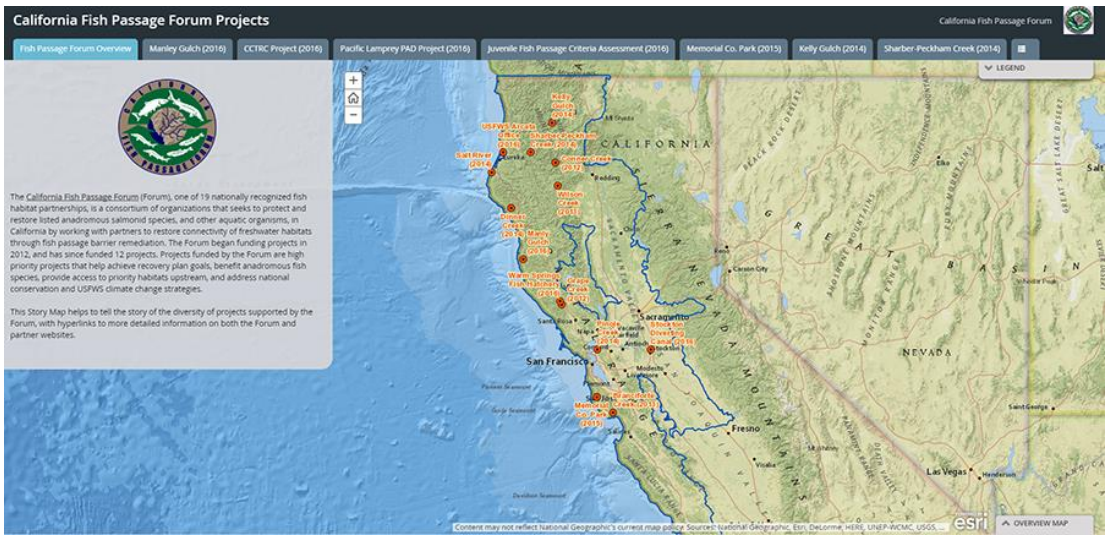
The Forum's conservation priorities and objectives are based on the goal of restoring and protecting healthy anadromous fish populations by restoring habitat connectivity. Remediation of fish passage barriers in California is complex. The Forum seeks opportunities to achieve its short and long-term goals by contributing nominal amounts of funding to projects of all sizes, and supporting the development of tools, science and data to inform fish passage restoration efforts throughout the state. The following activities and deliverables illustrate the ways the Forum has worked to achieve these goals from October 2016 through September 2019 (FY2017 through FY2019).

Forum Impact through Strategic Collaboration & Outreach

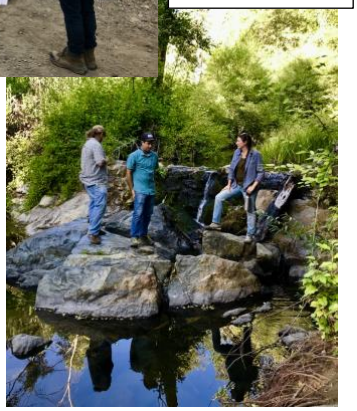
The Forum is comprised of individuals representing key state and federal agencies, as well as local, regional and national non-profits and environmental organization who support the Forum mission to protect and revitalize anadromous fish populations in California by restoring connectivity of freshwater habitats throughout their historic range. The structure of the Forum is designed to support fish passage efforts statewide, disseminate information to policy makers in these groups, as well as other Fish Habitat Partnerships (FHPs), restoration and fish passage practitioners, and the general public. The following include examples of the Forum's efforts to increase awareness of the importance of removing barriers to fish passage, promote the work of partners and Forum-funded projects, and support the efforts of partner agencies and other organizations in the mutual pursuit of improving fish passage in California.

- Three Forum-nominated water bodies selected to NFHP's 10 Waters to Watch**.** The Forum has a strong history of nominating projects selected to this annual list: 2017 (Benbow Dam Removal), 2018 (Manly Gulch/Big River), and 2019 (Upper Green Valley Creek). The Forum celebrated this announcement by highlighting it on the Forum website, and sending out an email blast to its listserv with more than 280 recipients.
- Collaborated with the ten other Coastal FHPs to convey the importance of protecting, restoring, and enhancing estuarine and nearshore marine environments. The Forum coordinated and facilitated quarterly conference calls between these Coastal FHPs, and led the development of six quarterly Coastal FHP newsletters during this reporting period providing partners with information on outreach events, projects and assessments, and technical expertise focused on coastal fish habitat issues.

- The Forum continued to develop case studies that describe barrier removal effectiveness monitoring and developed two case studies in 2017, and two in 2018.
- A portion of the Forum's website is dedicated to educating the public about the importance of fish passage barrier removal.
- The Forum produced and maintains a web-based storymap to help illustrate the scope and scale of Forum-funded projects.



- In 2019 the Forum developed a new "intranet" to serve as a document repository and archive for the partnership. This password protected site is accessible to all members of the Steering Committee (designees and alternates from each of the Forum's signatory agencies).
- Initiated planning in 2019 for the development of a StoryMap to highlight the removal of the four Klamath River Dams.



Forum members visit the I-5 Trabuco Fish Passage Site (left) and headwaters of Pauma Creek (below)

Forum Administrative Accomplishments

- The Forum holds two to three meetings of its membership each year. In all cases, local entities were invited to participate in the in-person meetings to facilitate engagement with local partners and interested parties. In addition to Forum business, each meeting featured at least one presentation by a local partner or stakeholder, to increase awareness of local fish passage issues amongst Forum members and increase awareness of the Forum to local partners. There were seven Forum meetings held between October 1, 2016 and September 30, 2019 at a variety of locations throughout California and via webinar. The Forum's September 2019 meeting, held in San Diego, CA, featured a full day field tour led by CalTrout (a Forum signatory agency) that showcased the diversity of key fish passage advancements in Southern California for endangered Southern steelhead to Forum members, partners, and guests.
- The Forum revisits and updates its strategic framework annually as needed. In 2017, the Forum undertook a more strategic and comprehensive overhaul of this document looking towards 2018-2023. This also included updating the Forum's geographic scope to encompass all anadromous and soon-to-be anadromous waters in California by adding the Klamath River Basin and additional portions of Southern

California based on revised fish distribution data and dam removal planning efforts.

- Produced annual reports for 2017, 2018, 2019.
- Revised and updated its Memorandum of Understanding, as well as added a new member, Trout Unlimited in 2018. The Forum also drafted, adopted (and later updated in 2017 & 2019) its bylaws and revised the strategic framework.
- Each of the Forum's three committees (Governance, Science & Data, and Education & Outreach) developed, and regularly updated work plans as they meet throughout the year, and presented progress towards goals at Forum Steering Committee meetings.
- The Forum created a new factsheet in 2019 highlighting the goals, mission and accomplishments of the Forum to use at conferences and workshops.
- The Forum participated in numerous NFHP meetings including those held by the Science & Data and Partnership Committees, as well as NFHP Board and Coordinator meetings.

Forum Impact through Addressing Fish Passage Priorities in California Fish Passage

- **Barrier Prioritization through FISH*Pass:*** From 2017 through 2019, the Forum continued its near decade long work to develop a fish passage barrier optimization tool that any fish passage practitioner in California can use to select and prioritize barriers for remediation. In late 2016, a group of Forum members tested FISH*Pass* for several California watersheds to identify needed improvements. The recently developed baseline fish habitat layer, created to illustrate locations of anadromous reaches of streams in California and barriers as found in the CA Passage Assessment Database was added as an input to FISH*Pass*.

  In 2017, with additional USFWS funding, the Forum contracted with Ecotrust in Portland, Oregon to develop a web-based user-friendly interface that has made the tool more easily accessible to a wider audience in California and beyond.

  The Forum's Science & Data Committee worked throughout 2018 with partners and stakeholders to help Ecotrust further refine the data inputs and the user interface. This included co-hosting a full day in-person workshop in concordance with the 36th Annual Salmon Restoration Conference in Fontuna, California (April 11-14, 2018). This workshop, titled "Using an Optimization Model to Select Fish Passage Barriers for Remediation," contained two segments. The first, provided an overview of the California Department of Fish & Wildlife Section IX Passage Assessment Methodology, as well as FishXing Software. The second, gave fish passage practitioners an opportunity to familiarize themselves with FISH*Pass* in numerous watersheds along the coast of California. The workshop was attended by 55 participants, and in addition to serving as an excellent outreach opportunity, also provided the Forum with an important feedback on FISH*Pass's* functionality and data inputs during the final stages of integrating the excel-based version of the tool with the new user-interface.

  In 2019, the Forum continued to work with Ecotrust to refine the user-interface and beta tested the tool with Forum partners, and fellow FHPs that had also developed barrier prioritization tools (Southeast Aquatic Resource Partnership). Other FHPs were interested in finding ways to develop similar tools for

their region (Midwest Glacial Lakes Partnership). The Forum previewed FISH*Pass* during the poster session at the Salmonid Restoration Federation annual conference in Santa Rosa, CA in April 2019.

The Forum also continued to refine the input data (including cost data, PAD updates, baseline fish habitat, and barrier tracing) for FISH*Pass*. The Science and Data Committee formed the FISH*Pass* Working Group to focus explicitly on refining the input data and user manual for FISH*Pass* in preparation for its Phase 1 release at the national American Fisheries Society national meeting September 30-October 3, 2019 in Reno, NV.

While not included in the Phase 1 rollout of FISH*Pass*, habitat quality was recognized early on in the development of the tool as an important component. The Forum previously supported the development of important resources (e.g. the NorWeST Stream Temperature Database in 2015) needed to help develop this input. In 2019, Forum members from USFWS and the Pacific States Marine Fisheries Commission (PSMFC) identified possible approaches and datasets to incorporate into the layer in Phase 2 of the tool.

- **Barriers to Tidal Connectivity:** FY19, the Forum received Multi-State Conservation Grant (MSCG) program funding to implement the Barriers to Tidal Connectivity project in collaboration with the Pacific Marine and Estuarine Fish Habitat Partnership (PMEP), and the Pacific Lamprey Conservation Initiative (PLCI). This project:
  - Identifies documented restrictions to tidal connectivity in U.S. West Coast estuaries;
  - Provides data mining to build data management relationships across the region and compiles a list of data sources that identify locations of passage/connectivity sites;
  - Conducts a data gap analysis by identifying locations where data and information are lacking;
  - Explores spatial analysis methods to improve identification of inland areas behind identified barriers, structures and passage restrictions;
  - Hosts a summit to identify gaps and technical (science and data) information needed to address ways to reduce passage restrictions as well as share tools and products developed.

  In FY19 the coordinators of the three FHPs established an inter-FHP working group to help guide this project, consisting of representatives from all three partnerships. Work to compile existing data on tidal connectivity issues also began by PSMFC and USFWS. Other tasks will be completed in FY20 and FY21.

- **Effectiveness Monitoring Protocols:** The Forum continued to apply information in the best management practices and protocols associated with fish passage monitoring, developed via a contract funded by the Forum in 2015. This information is requested in the Forum's annual RFP, and is used to inform future projects.

  The Forum shared the outcomes of this project with California fish passage practitioners on its website, and from 2017-2019 required that all projects funded by the Forum use one of these two monitoring methods.

Forum-Funded On-the-Ground Restoration and Assessment Projects

- In 2017, the Forum funded three barrier removal projects which opened access to and improved an additional 123.9 miles of habitat for Coho, Chinook, steelhead, Pacific Lamprey and other aquatic species. The Benbow Dam Velocity Barrier Removal Project, Pennington Creek Steelhead Barrier Removal Project, and Upper Green Valley Creek Fish Passage Projects addressed barriers to fish passage in priority areas in both Northern and Southern California including Southern Oregon-Northern California Coast Coho salmon critical habitat, South-Central California Coast steelhead distinct population segment, and

Central California Coast Coho Salmon critical habitat. Additionally, the Benbow Dam Removal project was selected as a 2017 Waters to Watch.

In a multi-species approach, the Forum also provided funding to support monitoring of Pacific Lamprey at low head weirs. This project developed an effective, low-cost monitoring approach to detect migrating lampreys at low-head weirs, typically encountered in the tidegates and small-scale diversions throughout California. Using experience in other passage projects and experience with migration behavior of lampreys, this project will develop, install and test a prototype at a known lamprey passage route. The prototype was used to guide post-project monitoring of tidegate modification in the San Luis Obispo drainage to detect recolonization by Pacific Lamprey (Reid and Goodman, 2020). The San Louis Obispo estuary is a keystone central coastal drainage, and the first major drainage south of the range contraction zone for Pacific lamprey.

- In 2018 the Forum provided funding for four projects: Cooper Mill Fish Passage Improvement Project Design, Davey Brown & Munch Creek Fish Passage Project, Mid Klamath Fish Passage Improvement Project, and Neefus Gulch Coho Salmon Barrier Removal Project Design at Appian Way. Three of these projects (Cooper Mill, Davey Brown & Munch Creek, and Neefus Gulch) generated designs for remediation or removal of barriers to fish passage in key watersheds across California. The Forum's contribution to the Mid Klamath Fish Passage Improvement Project builds on nearly two decades of collaborative assessments and treatment of barriers in the Mid Klamath Subbasin seeking to enhance habitat connectivity, specifically at the mouths of cold water tributaries. All of these projects address anticipated impacts of climate change (increased/exacerbated flooding and limited cold water refugia), and will ultimately contribute to opening more than 13 miles of habitat for anadromous species.

- In 2019, the Forum provided funding for seven fish passage projects, as well as a two phased barrier assessment and prioritization, that addressed connectivity needs and habitat restoration for Coho salmon, Chinook salmon, steelhead, Pacific Lamprey, and other anadromous species throughout California. Funding for these projects illustrates the multi-faceted nature of restoring fish passage in California and promoting recovery and persistence of at-risk populations. These include a) traditional removal/remediation of physical barriers to fish passage (M-1 Road Fish Passage Improvement Project and Upper Noyo River Fish Passage Improvement and Sediment Reduction Project), b) an innovative and cost-effective approach to promote Pacific Lamprey passage at the Tolowa Dee-ni' Nation's fish hatchery (Lamprey Passage at Rowdy Creek), and enhance off-channel habitat (Seiad Creek Off-Channel Connection Project), and c) multi-benefit monitoring and assessment work to remediate the concrete barriers to passage, and provide water quality data (Iron Horse Vineyards Dam Removal Project). Finally, the Lamprey Passage Design for Priority Obstacles in the Sacramento Basin Project (Phase 1 & 2) helped test and ensure that Forum developed tools (e.g. FISH*Pass* and the Fish Passage Incidental Report mobile application) address the specific needs of lamprey, and provided updated barrier status information to the PAD.

- In FY21 the Forum is recommending seven projects for NFHP funding. These projects (described in further detail in Section 3 of this report) address connectivity needs and habitat restoration for priority anadromous species in urban and rural environments. These projects remove barriers to fish passage while providing collaborative and outreach opportunities to key partners and stakeholders the Forum has not worked with in the past such as inter-city neighborhoods in the Bay Area. The Forum is also recommending funding for a project that is a continuation of much needed work done in the past in the Mid-Klamath Basin to ensure that fish passage is maintained in preparation for the now imminent removal of the four Klamath River dams.

  Additionally, in FY21, the Forum plans to embark on a collaborative, and multi-year QA/QC effort to

update information in the PAD, as well as develop an interactive map of current fish passage projects being executed not only by the Forum, but all of its signatory agencies.

General Guidance for Completing Section 2. Accomplishments Report

The purpose of this section is to describe, in detail, the activities of the FHP over the previous three federal fiscal years and how stated goals and objectives were met using FWS NFHAP project funds and other funding and in-kind resources.

For the purposes of completing this report, "NFHAP project funds" means FWS funds allocated under the NFHAP methodology that were used for fish habitat conservation projects. Project funds includes competitive, performance-based funding, as well as any stable operational support funding an FHP chooses to use for fish habitat conservation projects. FHP stable operational support funding used for general operations (coordination, travel, etc.) should not be included in Section 2 and Section 3.

Responses for criterion #4, project completion, should include information for projects that *received FWS NFHAP project funds over the previous five fiscal years* (FY15 – FY19 or October 1, 2014 through September 30, 2019). Projects funded from FY15 – FY19 will be evaluated for project completion between the federal fiscal years FY15 – FY20. Responses for all other criteria in this section will adhere to the three federal fiscal year time frame (FY17 – FY19).

Percentages (criteria # 2, 3, 4, 5, 7, and 8) and the leveraging ratio in criterion # 6 should be calculated to the nearest hundredth.

Supplemental guidance for selected performance criteria (criteria # 1, 4, and 6) is presented in the appendix to this document.

Please list your projects in chronological order by year for each criterion. To avoid confusion and provide clarity for reviewers, please keep your project lists in the same order for all criterion.

When responding to the requirements in this Section, FHPs should complete the self-assessment checklist, with narrative evidence justifying the performance level selected for each criterion.

Section 2. Accomplishments (Federal FY 2017 through 2019)

1. Meet the basic FHP requirements established by the National Fish Habitat Board for strategic planning and assessments

   Over the previous three fiscal years, how has the FHP met basic requirements for scientific planning and habitat assessments? (Choose *one* and provide explanation)

   - ☐ FHP has coordinated and compiled scientific assessment information on fish habitats within its partnership area (Level 1)
   - ☐ FHP has identified and has a plan to fill data gaps necessary to refine and complete fish habitat assessments, and incorporates existing habitat assessments into its strategic plan (Level 2)
   - X FHP has filled data gaps and refined habitat assessments, including climate change considerations, for incorporation into the Science and Data Committee's national assessment (Level 3)

   Narrative support: Briefly summarize any assessments and efforts to identify and fill data gaps. Describe how assessment results have been incorporated into strategic plans priorities and project selection process. Provide a link to your strategic plan and/or assessments as appropriate.

A key component of helping the California Fish Passage Forum (Forum) achieve its mission to protect and revitalize anadromous fish populations in California is continuing to provide leadership, and collaborating with its partners to identify, assess and fill data gaps surrounding barriers to fish passage in California. The Forum achieves this through the development of inventories and data support systems for priority waters, the development of effective monitoring protocols and data, and facilitating the incorporation of climate change science and data to improve decision making and planning. The following describes the ways the Forum has worked to achieve these goals over the last three years (FY2017-2019).

Incorporating Climate Change Science

Forward looking projections and understanding of the impacts of climate change on fish and their passage guides Forum activities in many ways. In 2014, the Forum produced a white paper, "Optimizing fish passage barrier removal in California while considering climate change effects," that summarizes the importance of considering climate change effects while prioritizing fish passage barrier removal as a restoration action in California. Climate change is predicted to increase the number and intensity of drought events, and 28 of the 52 identified evolutionarily significant units (ESU) of Pacific salmon and steelhead populations along the West Coast of the United States are listed as threatened or endangered under the Endangered Species Act. The paper attempts to fill a key void, describing specific effects of climate change on species and habitats, changes in fish populations as a result of climate change effects, connectivity and stream flow considerations, factors to consider when strategically prioritizing barrier removal, and best management practices associated with fish passage.

The National Science and Data Committee received the outcomes from this white paper, and the Forum has gone on to use the outcomes of this analysis to guide its annual proposal submissions for funding every year since FY15. In FY17 through FY19, the Forum continued to require applicants to identify which USFWS climate strategy components their projects address, and describe how this work is achieved. The expectation of the Forum is that applicants will apply climate change principles and outcomes to their projects. For example, a project

submitted for funding in 2018 noted, "The project will address climate change by providing access to cold perennial water in the summer and by providing refugia during intense storm events. These two climate conditions, prolonged drought and intense storm events, are both predicted to occur more frequently in a changing climate." This type of response provides a clear indication to the Forum that project leads are identifying key stressors on fish, and relating those stressors to climate change factors.

As an example of continued emphasis of the Forum to responding to climate change impacts, all seven of the FY21 Forum-funded projects (described in Section 3 Work Plan 1 Year Planning Horizon, Subsection 8. Conservation Actions and Project Outcomes) address the following USFWS Climate Change Strategies:

- 3.1 - Take conservation action for climate-vulnerable species.
- 3.2 - Promote habitat connectivity.
- 3.3 - Reduce non-climate change ecosystem stressors.
- 3.4 - Identify and fill priority freshwater needs.
- 3.5 - Conserve coastal and marine resources.
- 3.6 - Manage genetic resources.
- 3.9 - Foster international collaboration for landscape conservation.

The Forum has engaged in multiple activities that address data gaps to the benefit of fish passage in California during this reporting period: 1) Release FISH*Pass* prioritization tool, 2) Solicit, compile and incorporate barrier removal cost data into FISH*Pass*, 3) Assess and incorporate habitat data into FISH*Pass*, 4) Update and QA/QC input to CA Fish Passage Assessment Database, 5) Support habitat and aquatic species monitoring post-removal of clustered check dams in Southern CA, and 6) Generate barrier removal case studies that bring together years of design, implementation and monitoring data into an accessible format for assessing success of fish passage projects for practitioners, resource managers and the public.

Release of FISH*Pass*: An Optimization Tool for Fish Passage Barrier Remediation

There are thousands of fish passage barriers in California, and prioritization methods for which barriers to remediate differ widely throughout the state. Recognizing the need to ease, and possibly standardize this process, the Forum set out to create a tool that could provide one state-wide method to assist in making these decisions.

New user-friendly web-based interface being developed for FISH*Pass*.

The Forum released FISH*Pass* in 2019 with a user-friendly web-based interface, after nearly a decade of preparation, analysis and refinement. FISH*Pass*, is a decision-support tool that uses an optimization model to help users identify fish passage barriers for remediation. The tool integrates barrier information from the California Passage Assessment Database (PAD), accounts for spatial layout of the barriers in the network, cumulative barrier passability, potential upstream habitat, and optionally estimated costs. FISH*Pass* employs state-of-the-art

optimization modeling and solution techniques, explicitly taking into consideration the spatial structure of barriers in the interactive effects of passage movement on longitudinal conductivity. Optimization-based methods provide a systematic and objective means of targeting barrier mitigation actions, which maximize restoration gains given available resources. This tool represents a radical improvement over the ad hoc methods commonly used in barrier prioritization planning. FISH*Pass* is a critical step in helping the Forum achieve two of the priorities identified in its strategic framework (1. Remediate barriers to effective fish migration, and 3. Identify, assess and prioritize the removal of fish passage barriers), and in helping fish passage practitioners throughout the State of California prioritize barrier removal with limited resources.

In conjunction with the release of FISH*Pass* in 2019, the Forum held an introductory recorded webinar posted on the Forum's website. The FPWG also had already initiated targeted outreach to stakeholders in specific regions. The first target region was Santa Cruz, CA where the Forum held its next in-person Steering Committee meeting in February 2020, and held a FISH*Pass* demonstration.

In Fall 2019 the Forum also received a proposal as part of its annual RFP that would apply FISH*Pass* to a key watershed (the Smith River), and provide the Forum with valuable feedback when it considers future refinements or updates of the tool.

Solicit, Compile and Incorporate Barrier Remediation Cost Data into FISH*Pass*

In 2017, as the Forum continued to work on improving the various inputs to the tool including baseline fish habitat, cost data, and began to explore ways to incorporate habitat quality building off of previous efforts to incorporate stream temperature data, which would enhance the user's ability to prioritize barriers using future climate scenarios. The baseline fish habitat layer in particular is especially useful in this tool as it illustrates hydrography of habitat upstream of barriers, and was developed to help illustrate potential habitat once barriers are removed.

With additional support from USFWS, the Forum contracted with Ecotrust, a consulting firm in Portland, Oregon to develop a user-friendly web-based interface for the tool.

In 2018, based on feedback received during testing and from the in-person workshop held at the 2018 Annual Salmonid Restoration Conference, the Forum focused effort into improving the estimated cost data input. The Forum developed a template to request cost data from various partner agencies, and compiled into a spreadsheet for incorporation into FISH*Pass*

In 2019, the Forum conducted Beta testing on FISH*Pass* as it finalized the web-based user interface and continued to update data inputs to address gaps identified through this process. With a specific focus on strengthening the baseline fish habitat layer and cost data set, a FISH*Pass* Working Group (FPWG) was formed as a subset of the Forum's Science & Data Committee. The FPWG conducted targeted outreach to partners and stakeholders to gather as much additional cost data as possible. Once compiled, the FPWG also developed an accompanying "Cost Data Analysis" document to help explain what drives this input to the tool, which is available on the Forum and FISH*Pass* websites.

Assess and Incorporate Habitat Quality Data into FISH*Pass*

The Forum recognized early in the development of the tool its potential usefulness for decision makers as a data input. While not included in the Phase 1 release of FISH*Pass* in Fall 2019, the Forum already addressed habitat data gaps in the development of the NorWeST Stream Temperature Database. In 2019, Forum members from USFWS and PSMFC initiated work on this data gap building on information in NorWeST (which provides stream temperature data and climate scenarios for streams and rivers across the western U.S.) and has proposed

approaching the development of this layer by species/basin before applying it statewide. The FPWG is working to gather additional datasets, information and approaches to refine this data gap for Phase 2 of FISH*Pass.*

Update Input and QA/QC for the California Fish Passage Assessment Database

During the three years (FY17-FY19), the Forum continued to contribute to the quality control and updating of California's Fish Passage Assessment Database (PAD), a database designed to capture basic information about each potential barrier in the State of California. The PAD makes it possible for the public to track project implementation and quantify the amount of habitat made accessible as a result of barrier removal, and is also a valuable input for FISH*Pass.* The PAD is maintained by the Pacific States Marine Fisheries Commission (PSMFC).

In 2016, the Forum compiled and evaluated the Pacific Lamprey passage data currently being collected and developed a plan for extending data collection throughout their range, including methodology and potential funding. This work paved the way for work in 2017 to define lamprey-specific fields for tracking passage in the PAD, provided guidance in the development of lamprey-specific fields to add to barrier assessment field forms (including the Forum's Fish Passage Incidental Report), and developed a lamprey barrier assessment plan. In 2018, the Forum finalized updating the PAD to include these lamprey specific fields. One of the benefits of FISH*Pass'* release was that serial runs across the California landscape revealed needs for updated information in the PAD. To address this, the FPWG began an effort in 2019 to update information in the PAD as quickly as possible, and began discussions on a coordinated strategy to address the QA/QC of the PAD basin by basin.

Support California Small Dam Removal Habitat and Aquatic Species Monitoring Project

In response to a recognized gap in scientific literature pertaining to dam removal knowledge in Southern California to support endangered southern steelhead recovery, the Forum and NFHP (through a MSCG grant) provided funding in 2017 and leveraged other funding from NOAA's Office of Habitat Conservation in 2018 to continue monitoring habitat and aquatic species monitoring in after removal of check dams dam in Ventura, Los Angeles, and Orange County. This effort built off of a large multi-agency collaboration already underway. Monitoring began in 2014, and includes pre-dam removal monitoring data for two additional dams targeted for removal in 2018. This study aimed to clarify how sediment released by small dam removals influences streambed morphology under differing regulatory constraints throughout Southern California, employing cost-effective long-standing methodologies to:

- Understand the hydrologic context Southern California streams face under extended drought conditions;
- Examine elevation change in streambeds after dam removal to understand its influence in changing habitat features;
- Evaluate stream substrate quality in response to small dam removal;
- Evaluate select aquatic species movement in response to dam removal.

The final report issued in March 2019 can be found here.

Generate Barrier Removal Case Studies

In response to the desire to share the information collected through these assessments and the lessons learned during the execution of Forum-funded projects with a wider audience the Forum developed a template to compile barrier removal case studies. These case studies reflect documented success through effectiveness monitoring for use in highlighting the importance/success of barrier removal, and then began compiling case studies to advance information sharing relative to effectiveness monitoring. Three case studies were completed in 2016, two in 2017, and two in 2018. All are available on the Forum's website.

All Forum products, including white papers, updates on development of FISH*Pass*, temperature data, and modeled climate scenarios have been shared with the National Science and Data Committee.

2. Execute projects that benefit FHP priority species or priority areas **(Federal FY 2017 through FY 2019)**

   *What percentage of **all projects initiated** in the past three fiscal years were focused on FHP defined priority species or priority areas?* (Choose one)

   - ☐ At least 75% (Level 1)
   - ☐ At least 85% (Level 2)
   - X At least 95% (Level 3)
   - ☐ Less than 75%

Complete table adding rows for additional projects as needed. Attach map with project locations and priority areas identified.

Project Title	**FHP Priority Species**	**FHP Priority Area**	**Brief project description (max. 250 characters)**
2017 – Benbow Dam Velocity Barrier Removal	Coho salmon - Southern Oregon-Northern California Coast (SONCC ESU), Chinook salmon, steelhead/rainbow trout, Pacific lamprey	Benbow dam is included in the NFMS 2014 Final Recovery Plan for Southern Oregon/Northern California Coast ESU Coho salmon task SONCC-SFEW 5.1.25.2.	The removal of the Benbow dam on the South Fork of the Eel River will eliminate a winter velocity barrier through a narrow fish passage slot in the dam, benefitting Coho and Chinook salmon, steelhead/rainbow trout, and Pacific lamprey as well as opening up 100 miles of spawning and rearing habitats.
2017 – Pennington Creek Steelhead Barrier Removal Project	Steelhead trout (*Oncorhynchus mykiss*, South-Central California Coast District Population Segment)	The Chorro watershed is identified as a Core 2 watershed in the NMFS South-Central California Steelhead Recovery Plan. This project implements Task CC-SCCS-4.3.	This project eliminates a high priority barrier to migration on Pennington Creek and restores access to 2/3 miles of critical spawning and rearing habitat in the Chorro Creek watershed in San Luis Obispo County, CA using a new diversion and reconstructed stream channel. The project allows all life stages of steelhead to reach the high-quality perennial habitat refugia in the upper reaches of Pennington Creek.
2017 – Upper Green Valley Creek Fish Passage Project	Coho salmon – Central California Coast (CCC) ESU (E), *O. kisutch*	The Recovery Strategy for California Coho (CDFG, 2004) identified	This project will restore fish passage and stabilize the grade through a 600-ft stream reach

		the Guerneville HAS as the highest ranking barrier for restoration and management potential in the CCC Coho ESU, and NMFS CCC Coho Salmon Recovery Plan identified Green Valley Creek as a Phase I Priority Area.	of the upper Green Valley Creek (a tributary of the Russian River) thereby ensuring passage for juvenile and adult Coho to an additional 0.9 miles of rearing and spawning habitat. The barrier consists of an undersized, failing private road culvert, whose inlet invert sits 11.5 feet above the outlet pool depth.
FY2018 – Cooper Mill Fish Passage Improvement Design Project	Southern Oregon-Northern California Coast Coho salmon (T), *O. kisutch;* Chinook salmon – California Coastal ESU (T); Southern California steelhead (E), *O. mykiss*	Conservation measures for state and federal listed anadromous fish species; reconnect fragmented habitats; provide access to cold perennial water during the summer as well as refugia during intense storm events; provides access to 1/7 miles of anadromous fish spawning and rearing habitat.	This project provided funding towards preliminary design plans, focused on enhancing instream habitat and improving fish migration for all life cycles of Coho and other salmonids on Cooper Mill Creek, an important anadromous fish-bearing tributary of Yager Creek, a major tributary to the Van Duzen River. These preliminary designs kickstarted the design process. When ultimately constructed, this project will also address climate challenges by providing high priority refugia habitat during extreme water velocity and temperature events.
FY2018 – Davy Brown & Munch Creek Fish Passage Project	Southern California steelhead (E), *O. mykiss*	Santa Maria and Sisquoc River systems and their tributaries are designated the highest priority for SCS recovery actions; anadromous fish spawning and rearing habitat.	This project supports the development of engineering designs to remove three barriers to steelhead migration on Davy Brown and Munch Creeks, and replace two of these barriers over Davy Brown with steel bridges, thus restoring a sustainable population of steelhead to the watershed, and providing SCS and other aquatic species refuge from fire affected areas and other areas of poor habitat quality.
FY2018 – Mid Klamath Fish Passage Improvement Project	Coho salmon – Southern Oregon/Northern California ESU (T), *O. kisutch;* Upper Klamath/Trinity River Chinook salmon (UKTR) ESU, *O.tshawytscha*, Klamath Mountains Province	Provide access to 7 miles of anadromous fish spawning and rearing habitat; provide access to high quality thermal refugia during migration; reconnecting tributaries	This project seeks to enhance habitat connectivity, specifically at the mouths of cold water tributaries. It will open 7 miles of stream for steelhead/rainbow trout, and Coho and Chinook salmon by

	steelhead/rainbow trout, *O. mykiss*	to mainstem corridor in Klamath River Basin.	addressing barriers within the first 1,000 feet of all assessed tributaries.
FY2018 – Neefus Gulch Coho Salmon Barrier Removal Project Design at Appian Way	Central California Coast DPS Steelhead trout (T), *Oncorhynchus mykiss;* Coho salmon – Central California Coast ESU, (E), *O. kisutch;*	Barrier is listed in key regional restoration plan; addresses habitat connectivity issues, provides access to 1.46 miles of anadromous fish spawning and rearing habitat.	This project will restore fish passage in Neefus Gulch at a known fish passage barrier on Appian Way. Funding from the Forum was used to develop 100% designs that will lead to implementation of a culvert replacement project that utilizes instream large wood as grade control downstream.
FY2019 – Iron Horse Vineyards Dam Removal Project	Coho salmon (Oncorhynchus kisutch) Steelhead trout (Oncorhynchus mykiss) Threespine stickleback	Green Valley Creek is considered a vitally important anadromous salmonid stream in the Lower Russian River basin. The watershed identified by CDFW and NMFS as a core priority recovery habitat for threatened steelhead and endangered Coho salmon.	Post-implementation monitoring of the site through 2020 and beyond to ensure functionality of the erosion control measures and large wood structures, landowner outreach and assessment work through lower Green Valley Creek to ID additional barriers, and corresponding updates to the PAD, evaluation and monitoring of water quality conditions where a wetland complex has been identified as a significant biotic barrier to outmigrating salmonids.
FY2019 – Lamprey Passage at Rowdy Creek	Pacific Lamprey	Project addresses important spawning/rearing habitat for Pacific Lamprey, a anadromous tribal trust species of conservation concern to the USFWS, California and of great cultural and substance importance for the Tolowa Dee-ni' Nation.	Project opened 11.4 miles of spawning/rearing habitat by providing passage for Pacific Lamprey over a diversion barrier through the installation of California-style lamprey passage route (tube), provide video monitoring facilities, and viewing facilities and outreach display.
FY2019 – M-1 Road Fish Passage Improvement Project	CA Central Coast (CCC) Coho salmon, CA Coastal Chinook salmon, Northern CA steelhead, Threespine stickleback	Located in a NOAA Core Recovery area for CCC Coho salmon. NMFS considers Big River basin a high priority, core, watershed for recovery of Coho salmon, North Coast steelhead trout, and Chinook salmon.	Restored access to steelhead and salmon habitat to No-Name Gulch, a tributary to Big River by remediating a partial barrier to spawning and rearing salmonids.

FY2019 – Seiad Creek Off-Channel Connection Project	Southern Oregon – Northern California Coastal (SONCC) Coho salmon, Upper Klamath River Chinook salmon, Klamath River Provence steelhead	Project increased availability of off-channel Coho salmon spawning/rearing habitat in the Mid Klamath subbasin.	Project ensured connection to three (19,000 ft^2) high value off-channel spawning/rearing habitats (ponds) that increase available off-channel rearing habitat for ESA threatened Coho salmon.
FY2019 – Upper Noyo River Fish Passage Improvement and Sediment Reduction Project	Northern California (DPS) steelhead trout, Central California Coast (CCC) Coho salmon, Chinook salmon	Project addresses on of the highest fish passage priorities for the California Western Railway, and addresses multiple tasks in both state and federal recovery plans for NC steelhead and CCC Coho salmon in the Region.	Project restored access to 0.5 steelhead and salmon habitat upstream of the Upper Noyo River railway crossing, and prevented ~8,400 yd^3 sediment from being released which may have resulted in 1 ft of sedimentation in ~3 mi of Coho, steelhead, and Chinook habitat downstream of project site.
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 1	Pacific Lamprey	Barriers to passage has been identified as the highest order threat to anadromous Pacific Lamprey and highest priority throughout CA by the Pacific Lamprey Conservation Initiative threat assessment and regional implementation plans in the Sacramento Basin.	Phase 1 strategically applied recent Forum efforts/products and other management tools for barrier assessments and optimization of remediations strategies for Pacific Lamprey in the Sacramento Basin.
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 2	Pacific Lamprey	Barriers to passage has been identified as the highest order threat to anadromous Pacific Lamprey and highest priority throughout CA by the Pacific Lamprey Conservation Initiative threat assessment and regional implementation plans in the Sacramento Basin.	Phase 2 is building off of work done in Phase 1 of this project (above). Conduct analysis of field assessments to select priority sites to develop three passage project designs for priority barriers in the Sacramento Basin.


CFPF Funded Projects: FY 2017-FY 2019
NFHP Funded Projects
2017
2018
2019
FHP Boundary
1. Pennington Creek Steelhead Barrier Removal
2. Benbow Dam Velocity Barrier Removal
3. Upper Green Valley Creek Fish Passage Project
4. Neefus Gulch Coho Salmon Barrier Removal Project Design at Appian Way
5. Cooper Mill Fish Passage Improvement Project Design
6. Mid Klamath Fish Passage Improvement Project
7. Davy Brown and Munch Creek Fish Passage Project
8. Iron Horse Vineyards Dam Removal
9. Lamprey Passage at Rowdy Creek
10. M-1 Road Fish Passage Improvement
111. Seiad Creek Off-Channel Connection Improvement Design
12. Upper Noyo River - Skunk Train
13. Lamprey Passage Design for Priority Obstacles in Sacramento Basin (Phase I)
14. Lamprey Passage Design for Priority Obstacles in Sacramento Basin (Phase II)
Oregon
California
CALIFORNIA FISH PASSAGE FORUM
NATIONAL FISH HABITAT PARTNERSHIP
Map by: Kate Sherman, Pacific States Marine Fisheries Commission
Data Sources: NFHP Project Tracking Database, PMEP
Updated: December 11, 2020
Kilometers
0 50 100 200
N

3. Execute projects that benefit FWS priority species / trust resources **(Federal FY 2017 through FY 2019)**

*What percentage of **all projects initiated** in the past three fiscal years addressed habitat issues for FWS priority or trust resources?* (Choose one)

- ☐ 25% (Level 1)
- ☐ 50% (Level 2)
- X 75% (Level 3)
- ☐ Less than 25%

Complete table adding rows for additional projects as needed.

Project Title	FWS Region	State	Primary Species or Resources Benefitted	FWS Priority or Trust Resources (if neither, enter N/A)
2017 – Benbow Dam Velocity Barrier Removal	8	CA	Coho salmon - Southern Oregon-Northern California Coast (SONCC ESU), Chinook salmon, steelhead/rainbow trout, Pacific lamprey	SONCC Coho salmon critical habitat
2017 – Pennington Creek Steelhead Barrier Removal	8	CA	Steelhead/rainbow trout (*Oncorhynchus mykiss*, South-Central California Coast Distinct Population Segment)	South-Central California Coast steelhead distinct population segment
2017 – Upper Green Valley Creek Fish Passage Project	8	CA	Coho salmon – Central California Coast (CCC) ESU (E), *O. kisutch*	CCC Coho salmon critical habitat
2018 – Cooper Mill Fish Passage Improvement Project Design	8	CA	Southern Oregon/Northern California Coast (SONCC) coho salmon (T), *O.kisutch;* Chinook salmon – California Coast ESU (T); Souther California Steelhead (E), *O. mykiss*	SONCC Coho salmon critical habitat
2018 – Davy Brown and Munch Creek	8	CA	Southern California Steelhead (SCS) (E), *O. mykiss*	Southern California steelhead (SCS) critical habitat

2018 – Mid Klamath Fish Passage Improvement Project	8	CA	Coho salmon – Southern Oregon/Northern California ESU (T), *O. kisutch;* Upper Klamath/Trinity River Chinook (UKTR) ESU, *O.tshawytscha;* Klamath Mountains Province steelhead trout, *O.mykiss*	SONCC Coho salmon critical habitat
2018 - Neefus Gulch Barrier Removal Project Design at Appian Way	8	CA	Coho salmon – Central California Coast (CCC) ESU, (E), *O. kisutch;* Central California Coast DPS Steelhead trout (T), *O. mykiss;*	CCC Coho salmon critical habitat
FY2019 – Iron Horse Vineyards Dam Removal Project	8	CA	CA Central Coast (CCC) Coho salmon, Northern CA Steelhead trout, Threespine stickleback	CCC Coho salmon critical habitat
FY2019 – Lamprey Passage at Rowdy Creek	8	CA	Pacific Lamprey	Pacific Lamprey
FY2019 – M-1 Road Fish Passage Improvement Project	8	CA	California Central Coast (CCC) Coho salmon, Northern California steelhead, Threespine stickleback	California Central Coast (CCC) Coho salmon, Northern California steelhead, Threespine stickleback
FY2019 – Seiad Creek Off-Channel Connection Project	8	CA	Southern Oregon – Northern California Coastal (SONCC) Coho salmon, Klamath River Provence Steelhead	Southern Oregon – Northern California Coastal (SONCC) Coho salmon, Klamath River Provence Steelhead
FY2019 – Upper Noyo River Fish Passage Improvement and Sediment Reduction Project	8	CA	Northern California DPS steelhead trout, CA Central Coast (CCC) Coho salmon	Northern California DPS steelhead trout, CA Central Coast (CCC) Coho salmon
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 1	8	CA	Pacific Lamprey	Pacific Lamprey
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 2	8	CA	Pacific Lamprey	Pacific Lamprey

4. Project Completion and Success

What percentage of projects funded by FWS NFHAP dollars, in whole or in part, during the prior five years have been completed consistent with the project design? (Choose one) *See the calculation below for further guidance on responding to this criterion.*

- ☐ At least 60% (Level 1)
- X At least 70% (Level 2)
- ☐ At least 80% (Level 3)
- ☐ Less than 60%

Complete table adding rows for additional projects as needed. **All projects that received federal FY 2015 through 2019 FWS NHFAP project funds should be listed in the table below. Those projects will be scored for completion between FY15 – FY20.** In the Completion Date column, enter the date that the project was completed (use the following date format, mm/yyyy). Month and year must be specified in order to determine project completion date. For projects that are on-going or incomplete, enter N/A.

In FY 21, for example, the formula for this calculation is as follows:

$$\frac{\text{Of projects funded in FY15-FY19, number of projects completed by end of FY20}}{\text{Projects funded FY15-FY19}}$$

Project Title	Accomplishments #	Completion Date	Project completed according to design? (Enter Yes or No. If no, provide an explanation. Max 250 characters)
2015 – Memorial County Park Fish Passage Barrier Remediation	81332-A-177	11/2015	YES
2016 – Central California Traction Company Railroad Bridge Fish Passage Improvement Project	81332-20165-307	10/2019	YES
2016 – Manly Gulch Coho Access and Habitat Restoration Project	81332-2016-315	09/2017	YES
2017 – Benbow Dam Velocity Barrier Removal Project	81332-2017-331	11/2017	YES
2017 – Pennington Creek Steelhead Barrier Removal Project	81332-2017-327	09/2018	YES
2017 – Upper Green Valley Creek Fish Passage Project	81332-2017-329	06/2018	YES
2018 – Cooper Mill Fish Passage Improvement Project Design	81332-2018-345	09/2019	YES
2018 – Davy Brown & Munch Creek Fish Passage Project	81332-2018-341	08/2019	YES

2018 – Mid Klamath Fish Passage Improvement Project	81333-2018-088	12/2019	YES
2018 – Neefus Gulch Barrier Removal Project Design at Appian Way	81332-2018-344	09/2019	YES
FY2019 – Iron Horse Vineyards Dam Removal Project	81332-2019-89104762	12/2020	YES. Project was completed as designed, however the start date was severely delayed because funding was not received from USFWS until Sept 2019. Additional delays to project completion because limitations due to COVID-19.
FY2019 – Lamprey Passage at Rowdy Creek	81332-2019-89105151	09/2020	YES. Project was completed as designed, however the start date was severely delayed because funding was not received from USFWS until Sept 2019. Additional delays to project completion because limitations due to COVID-19.
FY2019 – M-1 Road Fish Passage Improvement Project	81332-2019-90768292	12/2020	YES. Project was completed as designed, however the start date was severely delayed because funding was not received from USFWS until Sept 2019. Additional delays to project completion because limitations due to COVID-19.
FY2019 – Seiad Creek Off-Channel Connection Project	81332-2019-89578894	10/2020	YES. Project was completed as designed, however the start date was severely delayed because funding was not received from USFWS until Sept 2019. Additional delays to project completion because limitations due to COVID-19.
FY2019 – Upper Noyo River – Skunk Train	529988954	10/2020	YES. Project was completed as designed, however the start date was severely delayed because funding was not received from USFWS until Sept 2019. Additional delays to project completion because limitations due to COVID-19.
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 1	845411840	09/2020	YES.
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 2	2003962502	NA	Project is underway however the start date was severely delayed because funding was not received from USFWS until Sept 2019. Additional delays to project completion because limitations due to COVID-19.

5. Monitoring and Evaluation **(Federal FY 2017 through 2019)**

What percentage of all projects initiated in the past three fiscal years included a monitoring and evaluation plan? (Choose one)

- ☐ 50% (Level 1)
- ☐ 75% (Level 2)
- X 90% (Level 3)
- ☐ Less than 50%

Complete table adding rows for additional projects as needed.

Project Name	Brief Monitoring & Evaluation Plan Description (max. 250 characters)
2017 – Benbow Dam Velocity Barrier Removal	Monitoring includes surveys of salmonid abundance in reaches and tributaries of the South Fork of the Eel upstream and downstream of the dam per CDFW protocol. California State Parks (CSP) will coordinate with CDFW and NMFS to ensure that fisheries data (e.g. spawner surveys, fish presence and abundance) that could be affected by the dam removal is available to NMFS. Monitoring for vegetation success will be accomplished photographically, and linked to a database created by North Coast Redwoods District. A channel long profile was developed from LiDAR and in channel total station work as part of the engineering study by Questa Engineering in 2001-2012. Pre and post-dam removal cross sections will be compared to assess the channel cross sectional response at the dam. Pre-construction biological survey and relocation of foothill yellow-legged frogs was conducted within 500 feet of all proposed work areas.
2017 – Pennington Creek Steelhead Barrier Removal Project	This project includes monitoring conducted pursuant to three broad requirements: (1) Tier 1 monitoring consistent with the NOAA Restoration Center's current Tier 1 guidance; (2) hydraulic monitoring; (3) pre and post-project streamflow monitoring pursuant to the NMFS Programmatic Biological Opinion for Steelhead Restoration in Southern and South Central California (No. 2014-00285); and (4) monitoring required under the anticipated terms of state and federal permits, including Section 401/404 permits and California Fish and Game Code §1600. This project includes pre- and post-project streamflow monitoring, as-built verification to confirm the project meets all passage standards, and presence/absence monitoring to assess effectiveness per the governing NOAA biological opinion.
2017 – Upper Green Valley Creek Fish Passage Project	Gold Ridge Resource Conservation District (GRRCD) staff will assist the landowner in periodic monitoring of overall functionality and stability of the constructed channel during and following storm events for two winters following construction. After that time period, the landowner agrees to perform regular monitoring of the culvert and constructed channel. Revegetation maintenance and monitoring will be conducted by Point Blue's Students and Teachers Restoring a Watershed (STRAW) program through 2020, after which the plants should be established and no longer requiring irrigation or weeding. The landowner agrees to maintenance the livestock exclusion fencing. The completed NOAA Restoration Center Fish Passage Barrier Removal Performance Measures and Monitoring workshop will be completed and submitted with the final report. Maintenance and monitoring of the culvert will

	be conducted by the landowner in perpetuity, and GRRCD will be notified immediately if movement or displacement of any structure is noted. Effectiveness monitoring will be performed through salmonid spawning and rearing surveys through the newly accessible reach above the existing barrier performed by GRRCD.
2018 – Cooper Mill Fish Passage Improvement Project Design	Once the project is implemented TU will provide "as-builts" to demonstrate the project was completed as designed. Post-construction fish passage monitoring will be conducted at two different flows during the fall/winter following construction to evaluate if the project flow depths and velocities are similar to the adjacent existing channel. In addition to the submittal of as-builts and post project flow monitoring TU will complete the NOAA Tier 1 Monitoring Form, and will report any monitoring data required under the anticipated terms of state and federal permits, including Section 401/404 permits and California Fish and Game Code §1600.
2018 – Davy Brown & Munch Creek Fish Passage Project	South Coast Habitat Restoration (SCHR), in conjunction with the Los Padres National Forest (LPNF), will utilize NOAA Restoration Center's Fish Passage Barrier Removal Performance Measures and Monitoring Worksheet for pre and post-project monitoring. Additionally, the LPNF will use before/after control impact (BACI) design using SWAMP protocols from the State Water Resources Control Board, which measure a suite of physical, chemical, and biological parameters but upstream and downstream of the project site. LPNF will also perform snorkel surveys for trout abundance estimates both above and below the impact sites and across the entire stream corridor. Regular monitoring of the project site will last for three years.
2018 – Mid Klamath Fish Passage Project	Effectiveness monitoring will include photo point documentation before during and after site treatments, video documentation on select sites to document treatment methods, recorded changes in slope, barrier height, flows, temperature, channel and pool depth. Biological monitoring will include snorkel surveys to enumerate salmonid use above and below barriers, before and after site treatments. Other data collected will include any signs of beaver activity, aquatic invasive species and all other native fish species. Monitoring of treated sites will be conducted within two weeks of treatment and a minimum of at least one and a maximum of three post treatment visits. All data will be integrated into a peer reviewed final report and distributed to project partners and all interested parties.
2018 – Neefus Gulch Barrier Removal Project Design at Appian Way	Once the project is implemented TU will provide "as-builts" to demonstrate the project was completed as designed. Post-construction fish passage monitoring will be conducted at two different flows during the fall/winter following construction to evaluate if the project flow depths and velocities are similar to the adjacent existing channel. In addition to the submittal of as-builts and post project flow monitoring TU will complete the NOAA Tier 1 Monitoring Form, and will report any monitoring data required under the anticipated terms of state and federal permits, including Section 401/404 permits and California Fish and Game Code §1600.
FY2019 – Iron Horse Vineyards Dam Removal Project	Gold Ridge Resource Conservation District staff will continue to monitor the removal site following large storm events during the rainy season. Additionally, staff will perform pool assessments in summer 2020 which may include snorkel surveys as appropriate to identify any salmonid juveniles present. While lower Green Valley Creek has not been considered viable habitat to support over-summering salmonid populations, recent late-summer dewatering performed in conjunction with instream construction projects have found Coho present in isolated pools suffering from very low dissolved oxygen rates. Pre-construction site visits to the Iron Horse dam site have also identified a perennial tributary that provides significant if irregular summer streamflow to pools just downstream of the dam, which may allow parts of lower Green Valley to support summer populations. This work will seek to characterize these reaches.

FY2019 – Lamprey Passage at Rowdy Creek	Video cameras will be deployed with the new lamprey passage at Rowdy Creek Fish Hatchery. The video camera will be set to record anytime there is movement through the passage. The following data will be collected for each daily video file: length of video file, location of camera, date, and time of day (from time-stamped video), number of lampreys observed (counts will be summed hourly and daily). Monitoring of lamprey passage will be a continuous task under the Fisheries Program at Tolowa Dee-ni' Nation using the video monitoring that will be installed with the lamprey passage as part of this project.
FY2019 – M-1 Road Fish Passage Improvement Project	TU and its partners will collect information about the project that is consistent with the NOAA Restoration Center Fish Passage Barrier Removal Performance Measures and Monitoring Worksheet and the requirements of the project permitting agencies. Data that will be collected will address the amount of habitat made available as a result of the project, site passability, and to the best extent possible presence of fish species. Other monitoring criteria include: areal disturbance metrics, community enhancement, operation and maintenance, and public safety. Photographic monitoring will also occur before, during, and following project implementation from marked photo monitoring locations. Following construction, an as-built summary will be provided, and will likely include at least one post-project longitudinal survey.
FY2019 – Seiad Creek Off-Channel Connection Project	Before and after photo points will be established to photo monitor all three pond outlet connection channels pre and post project. Seasonal snorkel surveys (once a month or after high water events) will be conducted to establish presence/absence of target species (Coho, Chinook, steelhead) and to establish best times to conduct population estimates or tagging events. Three reference reaches will be used to monitor salmonid presence in the creek habitats that are within a close proximity to the off-channel sites. Data will be processed and reviewed by senior staff to ensure quality of data. All collected photos, fish counts, temperature readings, will be entered into MKWC databases and shared upon request. All data collected will be compiled into the final report.
FY2019 – Upper Noyo River – Skunk Train	Pre-implementation monitoring was conducted, as well as post-project monitoring includes as-built surveys and fish population monitoring, will occur during winter and spring of 2021 with other funding.
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 1	Field surveys, assessments and evaluation of at road crossings and instream structures in 3rd order and higher streams in the Sacramento Basin (upstream of the Delta and below large impassable dams), including all accessible PAD sites and additional sites as feasible. Site evaluations were done using the beta version of the Forum's First Pass Incidental Report Survey 123 mobile application and provided valuable feedback of that tool.
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 2	Phase 2 will analyze results conducted during field surveys and assessments in Phase 1. Will refine the current 4th order Pacific Lamprey distribution BIOS layer to include Sacramento 3rd order streams, and conduct a prioritization of barriers using FISH*Pass* (the Forum's barrier optimization decision-support tool) to evaluate FISH*Pass's* applicability for lampreys.

6. Leveraging of FWS Project Funds **(Federal FY 2017 through 2019)**

Over a three year period the FHP leveraged FWS NFHAP project funding by a ratio of (Choose one). See attachment for further guidance on responding to this criterion:

- ☐ At least 1:1 (Level 1)
- ☐ At least 2:1 (Level 2)
- X At least 3:1 (Level 3)
- ☐ No FWS funds were leveraged

Complete table adding rows for additional projects as needed.

Project Name	FWS NFHAP Project Funds	Non-FWS Contributions	Other Contributions	Total Project Costs	Funding Partners
2017 – Benbow Dam Velocity Barrier Removal	$58,499	$2,674,416	In-kind	$2,732,915	NOAA, Humboldt County, California Department of Parks & Recreation
2017 – Pennington Creek Steelhead Barrier Removal Project	$40,000	$283,127		$323,127	NOAA, Trout Unlimited, California Conservation Corps, Morro Bay National Estuary Program
2017 – Upper Green Valley Creek Fish Passage Project	$30,089	$947,816	In-kind	$977,905	California Department of Fish & Wildlife, Point Blue Conservation Science
2018 – Cooper Mill Fish Passage Improvement Project Design	$62,872	$99,176	$31,190 (In-kind from Humboldt Redwood Company)	$193,238	California Department of Fish & Wildlife, Humboldt Redwood Company
2018 – Davy Brown & Munch Creek Fish Passage Project	$44,548	$2,590,024		$2,634,572	National Fish Wildlife Foundation, California Department of Fish & Wildlife, Coastal Resource Enhancement Fund, South Coast Habitat Restoration
2018 – Mid Klamath Fish Passage Project	$38,680	$38,940	In-kind	$77,620	Mid Klamath Watershed Council, Pacificorps, Karuk Tribal Fisheries Program, Salmon River Restoration Council, US Forest Service
2018 – Neefus Gulch Barrier Removal Project Design at Appian Way	$39,513	$219,370	$4,453 (In-kind from Landowner -	$263,336	California Department of Fish & Wildlife, State

			Rancho Navarro)		Coastal Conservancy, Mike Love and Associates, Landowner - Rancho Navarro
FY2019 – Iron Horse Vineyards Dam Removal Project	$20,039	$171,865		$191,904	California Department of Fish & Wildlife
FY2019 – Lamprey Passage at Rowdy Creek	$19,500		$10,000 (in-kind by USFWS)	$29,500	USFWS
FY2019 – M-1 Road Fish Passage Improvement Project	$80,700.80	$23,381.12	$5,348.40	$109,430.32	NOAA Restoration Center, California State Parks
FY2019 – Seiad Creek Off-Channel Connection Project	$28,856	$4,796	$764 (In-kind)	$34,416	PacifiCorps. Mid Klamath Watershed Council
FY2019 – Upper Noyo River – Skunk Train	$1,4991.54	$2,243,882.67	$20,000 (In-kind from Mendocino Railway)	$2,278,874.21	California Wildlife Conservation Board, NOAA Restoration Center, Mendocino Railway
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 1	$21,000		In-kind from USFWS	$21,000	USFWS
FY2019 – Lamprey Passage Design for Priority Obstacles in Sacramento Basin – Phase 2	$34,853		In-kind from USFWS	$34,853	USFWS
Total	**$534,141.34**	9,296,793.79	$71,755.40	**$9,902,690.53**	

Section 3: Work Plan (1-Year Planning Horizon)

Complete table adding rows for additional projects as needed. This table should include all proposed projects for which you are seeking FY21 FWS NFHAP project funds.

Proposed Projects for FY21 FWS NFHAP Project Funding

FWS Legacy Region	State	FIS #	Rank	NFHAP Project Funds	Partner Funds	Total Cost	NFHAP Conservation Strategy
8	CA	**2147482329** Mid Klamath Creek Mouth Enhancement Project	1	$41,215.88	$3,655.00	$44,870.88	1, 2, 3, 4
8	CA	**2147482326** Lower Stotenburg Creek Fish Passage Project	2	$49,952.20	$1,182,265.37	$1,232,217.57	2, 3
8	CA	**2147482330** Wildcat Creek Fish Passage & Community Engagement Project	3	$90,000.00	$789,000.00	$879,000.00	2, 3
8	CA	**2147482328** Ross Valley Sanitary District Shady Lane Abandoned Sewer & Barrier Removal	4	$20,190.00	$128,084.00	$148,284.00	3
8	CA	**2147482323** Fish Passage Project Media Acquisition Effort	5	$8,000.00		$8,000.00	1, 2, 3, 4
8	CA	**2147482324** Lawrence Creek Off Channel Habitat Connectivity Project Phase III	6	$48,029	$150,100	$198,129	1, 2, 3
8	CA	**2147482322** Finch Creek Ford & Steelhead Barrier Removal Project	7	$100,000.00	$590,000	$690,000	2, 3

7. Strategic Implementation

Percentage of projects that include measurable goals and objectives to address:

- *FHP priority species or priority areas; and/or*
- *Habitat issues for FWS priority species or trust resources*

Choose one, complete the table below, and provide narrative responses describing the measurable goals & objectives (max. 700 characters). Example narrative is provided in Appendix.

☐ 75% (Level 1)
☐ 85% (Level 2)
X 95% (Level 3)
☐ Less than 75%

Complete table adding rows for additional projects as needed.

Project Title	Identify FWS Priority Species / Trust Resources	Identify FHP Priority Species / Area
2147482329 Mid Klamath Creek Mouth Enhancement Project	Coho salmon, Chinook salmon, Steelhead/rainbow trout	Coho salmon, Chinook salmon, Steelhead/rainbow trout
2147482326 Lower Stotenburg Creek Fish Passage Project	Coho salmon, Chinook salmon, Steelhead/rainbow trout, Pacific Lamprey, Coastal cutthroat trout	Coho salmon, Chinook salmon, Steelhead/rainbow trout, Pacific Lamprey, Coastal cutthroat trout
2147482330 Wildcat Creek Fish Passage & Community Engagement Project	Steelhead/rainbow trout, Threespine stickleback	Steelhead/rainbow trout, Threespine stickleback
2147482328 Ross Valley Sanitary District Shady Lane Abandoned Sewer & Barrier Removal	Coho salmon, Steelhead/rainbow trout, Threespine stickleback	Coho salmon, Steelhead/rainbow trout, Threespine stickleback
2147482323 Fish Passage Project Media Acquisition Effort	Coho salmon, Chinook salmon, Steelhead/rainbow trout, Pacific Lamprey, Coastal cutthroat trout, Green sturgeon, White sturgeon, Eulachon, Threespine stickleback	Coho salmon, Chinook salmon, Steelhead/rainbow trout, Pacific Lamprey, Coastal cutthroat trout, Green sturgeon, White sturgeon, Eulachon, Threespine stickleback
2147482324 Lawrence Creek Off Channel Habitat Connectivity Project Phase III	Coho salmon, Chinook salmon, Steelhead/rainbow trout	Coho salmon, Chinook salmon, Steelhead/rainbow trout
2147482322 Finch Creek Ford & Steelhead Barrier Removal Project	Steelhead/rainbow trout	Steelhead/rainbow trout

Enter narrative responses below for each project (max. 700 characters/project)

#1 - 2147482329 - Mid-Klamath Creek Mouth Enhancement Project

This project will open seven miles of stream for Coho salmon, Chinook salmon, and steelhead/rainbow trout by addressing barriers within the first 1,000 feet of up to 40 tributaries to the Klamath River. Modifying and identifying temporal or partial barriers will ensure crucial cold water refugia for out migrating juvenile salmonids and returning adults. This project will enhance habitat connectivity, specifically at the mouths of cold water tributaries in the Klamath River Basin. Assessments will also be completed on all identified tributaries prior to implementation to identify low flow barriers, potential long-term solutions to historic problems, presence/absence surveys, and assessments of qualitative features. Maintaining fish passage in this area is especially important with the impending removal of the four Klamath River dams. This project supports goals 1, 6, and 7 in the Forum's strategic framework, and targets both FHP and FWS priority species.

#2 - 2147482326 – Lower Stotenburg Creek Fish Passage Project

This project will remediate all barriers (four) to fish passage along 0.5 miles of Lower Stotenburg Creek. By improving the connection of Lower Stotenburg Creek to the mainstem Smith River through the removal or replacement of these four stream crossings, 0.7 stream miles and 9.17 acres of habitat will be restored increasing habitat complexity and improving a native riparian corridor. Most barriers in the Smith Coastal Plain are on private agricultural land, the removal of these four barriers as part of this project will serve as a site to educate other landowners and restoration practitioners for ways to restore stream habitat while also serving the needs of the landowner. This project supports goal 1 in the Forum's strategic framework, and targets many FHP and FWS priority species.

#3 – 2147482330 – Wildcat Creek Fish Passage & Community Engagement Project

The primary goal of the overall project is to replace a failed fish passage facility resulting in the restoration of 1.125 of stream miles and 13 acres of habitat. This project will develop final design drawings for the fish passage facility replacement and obtain the permits necessary to reevaluate the Corps/NHC design to enable the project to move forward. The California Department of Water Resources supports the project and has committed the remaining funding needed for 100% designs. The project includes community outreach to raise awareness of creek ecology and fish passage restoration. Outreach deliverables will include K-12 educational programing, development of a children's book, community facing web page, and presentations at community meetings. This project supports goals 1, 2, 3, and 7 in the Forum's strategic framework, and targets both FHP and FWS priority species.

#4 – 2147482328 – Ross Valley Sanitary District Shady Lane Abandoned Sewer & Barrier Removal

The project removes a 21-inch abandoned sewer line encased in concrete and currently resting on the bed of Ross Creek. The concrete casing forms a 3.5 ft dam in the bed of the creek, and is a barrier to most juvenile steelhead seeking summer rearing habitat or to smolts attempting to leave the creek. Removing the barrier by replacing the abandoned sewer line and concrete encasement with a natural channel bottom composed of native channel bed material of course cobble and boulders will restore access to 30-lf of stream miles and 1,500 sf of habitat. This project supports goal 1 in the Forum's strategic framework, and targets both FHP and FWS priority species.

#5 – 2147482323 – Fish Passage Project Media Acquisition Effort

This media acquisition project will bolster the Forum's ability to communicate and educate the public on the importance and success of their efforts in California. Assets gathered will include high quality stills and video including drone and underwater images of current and past Forum-funded fish passage projects, and priority species and areas for the use in a variety of outreach efforts including website, presentation, and news stories (e.g., an Electronic Press Kit). Sites and subject matter will be selected by the Forum. This project supports goals 2, 6 and 7 in the Forum's strategic framework, and targets both FHP and FWS priority species.

#6 – 2147482324 – Lawrence Creek Off Channel Habitat Connectivity Project Phase III

This project will occur within Lawrence Creek, which is a high priority, core recovery salmon and steelhead stream in Humboldt County, and while it will benefit multiple species focuses on addressing high priority Southern Oregon/Northern California Coast Coho salmon recovery actions. The project will provide important winter refugia habitat for juvenile salmonids by restoring access to side channel habitat that is hydrologically disconnected from Lawrence Creek most of the year, and enhancing the newly reconnected habitat with the excavation of an off-channel alcove enhanced with large wood structures. This project supports goals 1, 2, 4, and 7 in the Forum's strategic framework, and targets both FHP and FWS priority species.

#7 – 2147482322 – Finch Creek Ford & Steelhead Barrier Removal Project

Finch Creek, is potentially one of the most productive, highest habitat value creeks downstream of Low Padres Dam. In normal and above water years, much of the creek remains wetted, allowing steelhead to survive the summer and contribute to the overall success of the Carmel River watershed's steelhead population. This project would address a wet stream crossing (ford) that has been identified by the Monterey Peninsula Water Management District as the 6th worst barrier to steelhead in the District's 2014 Barrier Assessment Report. Removal of the barrier would allow unrestricted passage to an additional 3.5 miles of quality stream habitat in wet years. This project supports goals 1, 2, 3, 4, 6, and 7 in the Forum's strategic framework, and targets both FHP and FWS priority species.

8. Conservation Actions and Project Outcomes

Percentage of proposed projects with specific conservation actions that will produce desired conservation outcomes and achieve project goals and objectives?

Choose one and provide narrative responses below.

- ☐ 50% (Level 1)
- ☐ 75% (Level 2)
- X 100% (Level 3)
- ☐ Less than 50%

Narrative responses (max. 700 characters/project)

#1 - 2147482329 - Mid-Klamath Creek Mouth Enhancement Project

This is a continuation of a collaborative effort led by the Mid-Klamath Watershed Council, in partnership with the Karuk Tribal Fisheries Program, Salmon River Restoration Council, U.S. Forest Service, and other federal and state agencies to address key stressors identified in the Mid-Klamath Subbasin Fisheries Resource Recovery Plan by identifying and manually treating barriers to anadromous fish passage on key tributaries in the region. Reconnecting tributaries to mainstem river corridors provide for significant remediation of all limiting factors affecting salmonids in the Klamath River Basin, including: water quality and quantity, and habitat quantity and quality. Cold water tributaries provide critical thermal refugia and rearing habitat during the juvenile and adult life stages of salmonids. Tributaries will be monitored throughout the season to assess effectiveness of the project. The project addresses NFHP National Conservation Strategies 1-4, as well as USFWS Climate Change Strategies 3.1 and 3.2.

#2 - 2147482326 – Lower Stotenburg Creek Fish Passage Project

Lower Stotenburg Creek is a small Smith River Plain tributary, with a watershed area of 452 acres, and shown to provide important non-natal winter rearing habitat for juvenile Coho salmon (Parish and Garwood 2015 & 2016). Treating the four barriers on Lower Stotenburg Creek will reduce the number of stream crossings, decrease flow velocities throughout the project reach, inundate and create additional winter rearing habitat, and reduce the potential for stranding as the stream dries in the spring. This project will aid in the recovery of Coho salmon in the Smith River by increasing habitat complexity, improving fish passage, and extending migration timing and survival for juvenile rearing in Stotenburg Creek. The project addresses NFHP National Conservation Strategies 2 and 3, as well as USFWS Climate Change Strategies 3.2, 3.3, and 3.5.

#3 – 2147482330 – Wildcat Creek Fish Passage & Community Engagement Project

The primary goal of the overall project is to replace a failed fish passage facility constructed in the mid 1990's by the Army Corps of Engineers, the most downstream of three significant barriers to Central California Coast Steelhead migration in Lower Wildcat Creek. The project will help reconnect the headwaters of Wildcat Creek with San Francisco Bay, providing additional spawning and rearing habitat for steelhead and other anadromous fish, and potentially restoring steelhead in the creek. Community outreach and education is a critical element in the success of this project. The project site is

in a disadvantaged community that is currently involved in a stream trail enhancement effort and near an elementary school that could benefit from a nearby restoration effort. The project addresses NFHP National Conservation Strategies 2 and 3, as well as USFWS Climate Change Strategies 3.1, 3.2, and 3.5.

#4 – 2147482328 – Ross Valley Sanitary District Shady Lane Abandoned Sewer & Barrier Removal

This project will remove the first barrier migrating steelhead encounter, and will provide passage for juvenile steelhead, as well as younger age classes between Corte Madera Creek and 8,000-lf of the Ross Creek stream channel accessible upstream. Removing the abandoned sewer line encased in a concrete weir and replacing with a natural channel bottom composed of the native channel bed material of coarse bobble and boulders. The project will restore the riparian canopy and promote lower water temperatures in the summer, as well as provide access to deep pools and areas with structure that provide high-flow refugia in the winter and thermal refugia in the summer both up and downstream of the exposed sewer line. The project addresses NFHP National Conservation Strategy 3, as well as USFWS Climate Change Strategies 3.1, and 3.2.

#5 – 2147482323 – Fish Passage Project Media Acquisition Effort

This project will focus on upcoming or completed fish passage projects directly supported by the Forum, but may also include other fish passage efforts where appropriate and images of fishes benefited from the passage efforts. Approximately 4-5 project sites (dependent on input from the Forum, weather and hydrologic conditions, and species availability) will be featured from strategic locations across the Forum's geographic scope to demonstrate the wide variety of habitats, species, and fish passage remediation techniques being implemented across the state of California and the waters that feed in to it. Images (both still and video) collected through this effort will be valuable tools in the Forum's ability to communicate to partners, stakeholders, policy/decision makers and the public the importance of protecting and restoring anadromous fish populations and their habitat in California. This project addresses NFHP National Conservation Strategies 1, 2, and 3; as well as USFWS Climate Change Strategies 3.1, 3.2, and 3.9.

#6 – 2147482324 – Lawrence Creek Off Channel Habitat Connectivity Project Phase III

The project will enhance 0.09 stream miles, and restore 1.1 acres of off-channel habitat in the Lawrence Creek watershed, considered high priority, core recovery habitat for Coho salmon, Chinook salmon, and steelhead. The project will provide ESA species access to historic floodplain habitats by enhancing hydrologic connectivity to a side channel feature and creating a new connected alcove-pond feature that will provide shelter during intense storm events. This is the third off-channel habitat restoration project in the Lawrence Creek Sub-basin since 2015, continuing a series of successful collaborative efforts by Forum signatories Trout Unlimited and the NOAA Restoration Center, working with the Humboldt Redwood Company and Pacific Watershed Associates. This project addresses NFHP National Conservation Strategies 1, 2, and 3; as well as USFWS Climate Change Strategies 3.1, 3.2, and 3.3.

#7 – 2147482322 – Finch Creek Ford & Steelhead Barrier Removal Project

Removal of the barrier would allow unrestricted passage for steelhead to an additional 3.5 miles of quality spawning and rearing habitat in a higher percentage of water years, thus expanding habitat for an ESA threatened species. The project has By rectifying this piece of failing infrastructure and

improving habitat for an imperiled species, it will also provide unique study and research opportunity as the project site is located at the entrance to the Hastings Reserve which hosts hundreds of students ranging from K-12 to graduate level retreats, that are regularly involved in data collection and learning new survey and monitoring techniques. This project addresses NFHP National Conservation Strategies 1, 2, and 3; as well as USFWS Climate Change Strategies 3.1, 3.2, 3.3, 3.5, and 3.6.

Supplemental Guidance for Selected Performance Criterion

1. Benchmarks for the Habitat Assessment criterion performance levels and evaluating FHP achievement of Basic FHP Requirements (Appendix 2, Section 2, Criterion 1 in the approved methodology)

To achieve Performance Level 1 (PL1), an FHP must:

- Coordinate and compile scientific assessment(s) information on priority fish habitats within the FHP's boundaries. Note: FHPs can use an existing assessment(s) performed by others (e.g., NFHP National Habitat Assessment, universities, Recovery Teams, or LCCs) as a starting point or undertake their own assessment(s).

To achieve Performance Level 2 (PL2), FHP must:

- Meet the requirements of PL1.
- Complete FHP specific plan to fill data gaps and to refine and complete fish habitat assessments that are necessary to strategically identify and prioritize fish habitat conservation projects in FHP boundaries.
- Prioritize information gaps and approach to fill science and data gaps necessary to refine, complete, and update habitat condition assessments that are necessary to strategically identify and prioritize fish habitat conservation projects in FHP boundaries.
- Identify how habitat assessments projects will be solicited and selected within FHP priorities.
- Incorporate existing assessments of habitat conditions and threats as needed into the FHP strategic plan.

To achieve Performance Level 3 (PL3), FHP must:

- Meet the requirements of PL2.
- Information gaps in scientific information and knowledge have been filled in order to strategically identify and prioritize fish habitat conservation projects in FHP boundaries.
- Proactively share scientific information and knowledge from assessments in a compatible format with the National Science and Data Team for integration into the national assessment and other national needs.
- Incorporate new data on threats, including climate change, into the habitat assessment and project priorities.

2. Additional instruction for determining project completion (found in Appendix 2, Section 2, Criterion 4 of the approved methodology)

As noted previously, this criterion only considers NFHAP funding used for fish habitat conservation projects. Do not include funding used for operations in the project list.

On-the-Ground Aquatic Habitat Restoration and Protection Projects

- A project is complete when fully constructed or implemented consistent with the project design and performance measures (i.e., number of stream miles enhanced or restored) are reported in FIS-Accomplishments.

- Basic implementation monitoring (if specified in the original project proposal) is also completed; however, longer term, 1-2 year monitoring, and evaluation (if specified in original project proposal) need not be completed to consider the project complete.

Education and Outreach Projects and Species or Habitat Assessment Projects

- A project is complete when the specified product/deliverable (i.e., a brochure, informational sign, video, assessment report, GIS database, etc.) is produced and received consistent with that which was described in the original project proposal and performance measures are reported in FIS-Accomplishments.
- If monitoring was specified (typically not for these project types), then basic implementation monitoring (if specified in the original project proposal) is also completed; however, longer term, 1-2 year monitoring, and evaluation (if specified in original project proposal) need not be completed to consider the project complete.

3. Instruction for calculating Leveraging (found in Appendix 2, Section 2, Criterion 6 of the approved methodology)

This criterion indicates the extent to which an FHP has leveraged FWS NFHAP project funds over the previous three fiscal years. The intent is to measure actions by FHPs to secure additional partner funds to supplement projects that receive NFHAP funding. Leveraging is measured as a ratio of the total FWS NFHAP project funds (this includes stable operational support, only to the extent that it was used to fund fish habitat conservation projects, as opposed to operations, performance-based funds, and indirect NFHAP technical project support an FHP received) to the total non-FWS cash or in-kind contributions the FHP secured to supplement the NFHAP project funds it received over the previous three fiscal years. (Note: Fiscal year refers to federal fiscal year, which begins October 1 and ends September 30, annually).

Leveraged funds and in-kind contributions for projects that receive FWS NFHAP project funds includes, but is not limited to, the following types of monetary and in-kind contributions:

- Monetary contributions for FHP coordination and staff positions that directly support projects receiving FWS NFHAP project funds
- Grants
- Private foundation funds
- Documented donations; and in-kind materials and services
- Funds where FWS funds are co-mingled with other non-Service funding sources (e.g. National Fish and Wildlife Foundation)
- Non-appropriated funds managed by the FWS (e.g. Coastal Impact Assistance Program, National Coastal Wetland Conservation Grant program)

Leveraging cannot include:

- FWS appropriated funding and their associated matching funds or in-kind services (e.g. Service funds and partner contributions associated with the National Fish Passage, Coastal, and Partners for Fish and Wildlife programs, LCCs, etc.).
- Any funds raised by the FHP for general operations.
- Any funds raised by the FHP used for projects not also funded by FWS NFHAP project funds.

4. Brief project summary for each prioritized project (examples included below)

In Section 3, FHPs must present the suite of ranked projects proposed for FWS NFHAP project funding in the current fiscal year and describe how these projects demonstrate strategic use of NFHAP project funds and will achieve desired conservation outcomes. Example narrative is provided below for criteria 7 and 8.

Criterion 7 - Measurable Goals & Objectives (Max. 700 characters): This project replaces one barrier to fish passage and opens 2.8 miles of upstream habitat to juvenile Coho and Chinook salmon. The crossing has been identified as a partial barrier to juvenile salmon by the State. An estimated 8-10 foot embedded culvert will replace the existing culvert. The FHP ranked this culvert in the top 16 culverts to be replaced for fish barrier issues. The project partner and FHP members, the City of Caribou Creek and local Soil District, have expressed the need to construct this project and has funding to support the project. This project addresses Objective 4 in the FHP strategic plan. It targets interjurisdictional fish, an FWS Trust Species, and a species priority for the FHP. It is being implemented in the Anchor River watershed - a priority watershed for the FHP.

Criterion 8 - Conservation Actions & Project Outcomes (Max. 700 characters)**:** Barrier removal will make 2.8 miles of upstream habitat accessible for chinook and coho salmon. The project will be designed using stream simulation standards/techniques, proven techniques to accommodate fish and other aquatic species. The project partner has an established fish passage program and has considerable capacity to implement the project and achieve project goals. The state fish and game agency will evaluate juvenile use of the reopened habitat pursuant to the state's fish passage monitoring plan.