

SECTION 1.0

INTRODUCTION

This Applicant-Prepared Draft Essential Fish Habitat (EFH) Assessment has been prepared pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. §§ 1801-1891d). This Applicant-Prepared Draft EFH Assessment defines and evaluates the potential effects of the Federal Energy Regulatory Commission's (FERC or Commission) issuance of a new license to the Yuba County Water Agency (YCWA or Licensee) for the operation of the Yuba River Development Project (Project), FERC Project No. 2246, (Project), on lower Yuba River Chinook salmon (*Oncorhynchus tshawytscha*) that are federally managed under the MSA and on their designated EFH. Pursuant to Section (§) 305(b) of the MSA (16 U.S.C. §1855(b)), and the United States Department of Commerce (USDOC), National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) implementing regulation (50 C.F.R. § 600.920), YCWA has prepared this Applicant-Prepared Draft EFH Assessment.

The MSA establishes jurisdiction over marine fisheries in the United States' exclusive economic zone (3 to 200 nautical miles (mi) offshore) through establishment of Regional Fisheries Management Councils (Councils) that develop Fishery Management Plans (FMP). The FMPs address fishery management and conservation issues, including designating EFH to conserve and enhance species managed under FMPs. The Pacific Fisheries Management Council (PFMC) manages all species of Pacific Coast salmon pursuant to the Pacific Coast Salmon FMP, which includes the management of Chinook salmon in California.¹ In the Mid-Pacific Region, the PFMC designates EFH and NMFS approves the designation. EFH only applies to commercial fisheries, including all runs (spring-run and fall-/late fall-run) of Chinook salmon in the Yuba River.

During the National Environmental Policy Act (NEPA) scoping for relicensing of the YCWA Project, issues were raised regarding potential Project effects on Chinook salmon and its habitat in the Yuba River. As described in the April 2011 Scoping Document 2 for the Yuba River Hydroelectric Project, California, Project No. 2246-058, NMFS suggested the following scope for EFH:

- Upstream Extent of EFH - The potential action area extends throughout the upper Yuba River watershed, including the North, Middle, and South Yuba watersheds.
- Downstream Extent of EFH - The potential action area includes the lower Yuba River watershed to the confluence of the Feather River, the lower Feather River, the lower Sacramento River, and through the Sacramento-San Joaquin Delta to San Francisco Bay.

The FERC's April 2011 scoping document includes anadromous fish and EFH as potentially cumulatively affected resources.

¹ In California, the Pacific Coast Salmon Fishery Management Plan (FMP) does not distinguish between the four races of Chinook salmon species (i.e., winter-, spring-, fall- and late-fall-run Chinook salmon).

There currently are no anadromous fish in the Yuba River Basin upstream of Englebright Dam. However, actions occurring upstream of Englebright Dam, including proposed Project actions, have the potential to affect designated EFH upstream of Englebright Dam, and to contribute to potential effects on anadromous fish and EFH downstream of Englebright Dam.

Actions throughout the Yuba River Basin and downstream to San Francisco Bay, including proposed Project actions, have the potential to affect the numbers of juveniles and smolts that are produced and survive outward emigration and returning adults to the Yuba River, and the conditions of those individuals. The recommended geographic scope in the April 2011 scoping document was included in this Applicant-Prepared Draft EFH Assessment to the extent necessary to understand potential effects on Chinook salmon and designated EFH, and how the Project would contribute to those effects.

The Proposed Action for this Applicant-Prepared Draft EFH Assessment is the issuance by FERC of a new license to YCWA for the continued operations and maintenance (O&M) of the Yuba River Development Project as described in YCWA's Amended Application for New License for Major Project – Existing Dam – (Amended FLA).² New Project facilities and ongoing and proposed Project activities with a potential to affect Chinook salmon and EFH proposed by YCWA are discussed in detail in Section 4.0 of this Applicant-Prepared Draft EFH Assessment.

YCWA proposes seven general changes to existing Project facilities: 1) addition of a Tailwater Depression System (TDS) at New Colgate Powerhouse; 2) addition of a new Auxiliary Flood Control Outlet at New Bullards Bar Reservoir; 3) modification to the Our House Diversion Dam fish release outlet; 4) modification to the Log Cabin Diversion Dam fish release outlet; 5) modification to the Lohman Ridge Diversion Tunnel Intake; 6) modifications to recreation facilities at New Bullards Bar Reservoir³; and 7) modifications to Project roads. In addition, YCWA proposes to modify the existing FERC Project Boundary.

In general, YCWA proposes to continue to operate the Project as it has operated historically (i.e., since 2006 when the Lower Yuba River Accord (Yuba Accord) instream flow requirements went into effect), with the addition of a number of operation and management activities to: 1) protect or mitigate impacts from continued O&M of the Project; and 2) enhance resources affected by continued O&M of the Project. These activities are collectively referred to as protection, mitigation and enhancement (PM&E) measures.

² YCWA filed with FERC an Application for a New License Major Project – Existing Dam – (Final License Application, or FLA) for the Project on April 27, 2014.

³ YCWA has completed all FERC-approved studies, and filed the results with FERC. However, YCWA's proposed Condition RR1, *Recreation Facilities Plan*, includes the construction and operation of a new Kelly Ridge Campground and a new recreation vehicle (RV) dump station. Since the facilities were agreed to very late in the relicensing and, as conceived at this time, would be located on approximately 57 acres of NFS lands outside the existing Project boundary, YCWA's relicensing studies did not include the area where the new Kelly Ridge Campground and the new RV dump station would be located, which are shown in the Recreation Facilities Plan. Therefore, YCWA will perform botanical and cultural studies (i.e., water and aquatic studies are not proposed because the area does not include and is not adjacent to any surface water) in these areas in 2017 and will file with FERC the results of the studies when they are available. The additional cultural studies may require that YCWA modify its previously filed *Historic Properties Management Plan* (HPMP). If so, YCWA anticipates the modified HPMP will be filed with FERC by the end of 2017.

YCWA's Proposed Action would continue to provide reliable flood control for downstream areas and surface water supplies under YCWA's water right permits to YCWA's eight member units – Brophy Water District (BWD), Browns Valley Irrigation District (BVID), Cordua Irrigation District (CID), Dry Creek Mutual Water Company (DCMWC), Hallwood Irrigation Company (HIC), Ramirez Water District (RWD), South Yuba Water District (SYWD) and Wheatland Water District (WWD) – that deliver water to their service territories, and which collectively encompass approximately 90,000 acres (ac) in western Yuba County⁴. The Proposed Action also would continue to provide substantial protection and enhancement for anadromous salmonids in the Yuba River downstream of Narrows 2 Powerhouse.

Proposed minimum streamflow requirements, corresponding to Yuba Accord schedules, are presented in Proposed Condition AR3 of Appendix E2 of the Amended FLA. For Schedule 1 through Schedule 6 years, the proposed minimum streamflows in Table 1 of Proposed Condition AR3 are the same as the corresponding minimum instream flow requirements in the Yuba Accord's Fisheries Agreement, as ordered by the SWRCB in its Corrected Order WR 2008-0024 on pages 56-57 in term 1. (See also, SWRCB Corrected Order WR 2008-0014, fig. 2.) For Conference Years, there are some differences between YCWA's proposed condition and the corresponding requirements in Corrected Order WR 2008-0014. (See SWRCB Corrected Order WR 2008-0014, p. 57 and fig. 7.) If implemented, the new proposed requirements will have some significant benefits over the current Conference Year requirements. For a complete discussion of additional benefits, please see Proposed Condition AR3 of Appendix E2 of the Amended FLA.

Additionally, four of the Proposed Conditions were designed specifically to address Threatened and Endangered (ESA-listed) Species, which will also address Chinook salmon: 1) WR7 – Implement Water Temperature Monitoring Plan; 2) AR8 – Implement Lower Yuba River Aquatic Monitoring Plan; 3) GEN1 – Organize Ecological Group and Host Meetings; and 4) AR9 – Control Project Ramping and Flow Fluctuations Downstream of Englebright Dam.

Even though the potential Project-specific effects on EFH are restricted to the habitats that are directly or indirectly affected by the Project – both upstream and downstream of Englebright Dam – other actions upstream and downstream of Englebright Dam have the potential to affect the quality of EFH throughout the geographic scope suggested in the April 2011 scoping document. Understanding the effects of those potential actions allows this Applicant-Prepared Draft EFH Assessment to place Project-specific effects on EFH in their proper perspective. This expanded scope does not imply that Project-related effects extend beyond the Yuba River Basin.

The Applicant-Prepared Draft Biological Assessment (BA) for the Proposed Action thoroughly discussed the status of Central Valley spring-run Chinook salmon, which is listed as a threatened species under the Endangered Species Act (ESA) and the potential effects of the Proposed

⁴ For the purpose of this amended exhibit, "existing Project" refers to the existing Project as configured and operated since 2006 when the Lower Yuba River Accord went into effect as a pilot program before being subsequently adopted through changes to YCWA's water right permits in 2008 (see SWRCB Corrected Order WR 2008-0014). The "proposed Project" refers to the Project proposed by YCWA in its Application for New License, including YCWA's proposed PM&E measures. The word "Project" is used at times in this amended exhibit where the reference can reasonably be to either the existing Project or the proposed Project.

Action on this species. That BA also discussed the critical habitat utilized by spring-run Chinook salmon that potentially would be affected by the Proposed Action and these potential effects. Therefore, this Applicant-Prepared Draft EFH Assessment primarily concentrates on EFH for the Central Valley fall-/late fall-run Chinook salmon Evolutionarily Significant Unit (ESU), which is also covered under the MSA, although it is not listed as a threatened or endangered species under the ESA.

From a broad perspective, EFH includes the geographic areas where a species occurs at any time during its life cycle, and these areas may be described in terms of ecological characteristics, location, and time (Hanson et al. 2004). Ecologically, EFH includes waters and substrates that focus distribution (e.g., migration corridors, spawning areas, rocky reefs, intertidal salt marshes, or submerged aquatic vegetation) and other characteristics that are less distinct (e.g., turbidity zones, salinity gradients). Spatially, habitats and their uses may shift over time due to climate change, human activities, geologic events, and other circumstances. The type of habitats available, their attributes, and their functions are important to a species' (e.g., Chinook salmon) productivity, diversity, health, and survival (Hanson et al. 2004).

While Section 7 ESA provisions are intended to prevent jeopardy or adverse modification of critical habitat, EFH provisions are intended to ensure a sustainable fishery. Originally enacted in 1976, the MSA has been amended several times. In 1996, the Sustainable Fisheries Act amended the MSA by adding provisions intended to end overfishing and rebuild overfished fisheries, reduce bycatch, and assess and minimize the impacts of management measures on fishing communities (73 FR 60987). Congress articulated in its findings that one of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats (73 FR 60987). Congress found that habitat considerations should receive increased attention for the conservation and management of fishery resources of the United States (16 U.S.C. § 1801(a)(9)). In making such findings, Congress declared one of the purposes of the MSA is the promotion of “...*the protection of [EFH] in the review of projects conducted under Federal permits, licenses, or other authorities that affect or have the potential to affect such habitat*” (16 U.S.C. § 1801(b)(7)). To ensure that habitat considerations receive increased attention for the conservation and management of fishery resources, the MSA requires each existing, and any new, FMP to: 1) describe and identify EFH; 2) minimize to the extent practicable adverse effects on such habitat caused by fishing; and 3) identify other actions to encourage the conservation and enhancement of such habitat (16 U.S.C. § 1853(a)(7)).

The objective of this Applicant-Prepared Draft EFH Assessment is to determine whether the Proposed Action would adversely affect designated Chinook salmon EFH. If necessary, this assessment also will develop proposed conservation measures to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the Proposed Action. This Applicant-Prepared Draft EFH Assessment only considers EFH for Pacific Coast salmon because the Action Area for the Proposed Action does not extend into areas of EFH for groundfish or coastal pelagic species.

1.1 Purpose of the Essential Fish Habitat Assessment

The MSA requires federal agencies like FERC to consult with NMFS on any action that the federal agency funds, authorizes, or undertakes, or proposes to fund, authorize, or undertake, and that may adversely affect EFH (16 U.S.C. § 1855(b)(2)). In California, there are three FMPs addressing: 1) groundfish; 2) coastal pelagic species; and 3) Pacific salmon (see 50 C.F.R., pt. 660). Federal agencies must consider the effects of a proposed action on all three types of EFH, as applicable. EFH regulations state that consultations are required of federal action agencies for renewals, reviews, or substantial revisions of actions if the renewal, review, or revision may adversely affect EFH (50 C.F.R. § 600.920(a)(1)). Federal action agencies required to consult with NMFS on EFH issues must provide NMFS with a written assessment of the effects of their action on EFH (50 C.F.R. § 600.920(e)(1)). Additionally, this Applicant-Prepared Draft EFH Assessment follows the EFH regulations regarding EFH coordination, consultation, and recommendations (50 C.F.R. §§ 600.905-600.930).

This Applicant-Prepared Draft EFH Assessment describes the relationship between the relicensing of the Project and Chinook salmon EFH in the vicinity of the Project, and evaluates the potential effect of the Proposed Action (i.e., FERC's issuance of a new license for the Project) on Chinook salmon and on their designated EFH. An EFH Assessment is a necessary component for efficient and effective consultations between a federal agency and NMFS. This Applicant-Prepared Draft EFH Assessment provides the basis upon which consultation under the MSA will be conducted between FERC and the United States Department of Commerce (USDOC), acting through NMFS.

1.2 Regulatory Framework

1.2.1 Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §1801-1891d)

The purposes of the MSA are to: 1) take immediate action to conserve and manage fishery resources off the U.S.'s coasts; 2) support the implementation and enforcement of international fishery agreements for the conservation and management of highly migratory species; 3) promote domestic commercial and recreational fishing under sound conservation and management principles; 4) provide for preparation and implementation of fishery management plans to achieve and maintain the optimum yield of each fishery on a continuing basis; 5) establish Councils to protect fishery resources through preparation, monitoring, and revision of plans that allow for the participation of states, tribes, the fishing industry, and consumer and environmental organizations; 6) encourage the development of underutilized U.S. fisheries; and 7) promote the protection of EFH (16 U.S.C. § 1801(b)). Consultation with NMFS is required when any action authorized, funded, undertaken, or proposed to be authorized, funded, or undertaken may adversely affect any EFH (16 U.S.C. § 1855(b)(2)).

Federal agencies must consult with the NMFS on their activities that may adversely affect EFH, regardless of whether or not those activities occur within designated EFH. In other words, an activity can adversely affect EFH without occurring within EFH (NMFS 2011).

An MSA regulation provides that FMPs should identify specific types or areas of habitat within EFH as “*habitat areas of particular concern*” (HAPC) based on one or more of the following considerations: 1) the importance of the ecological function provided by the habitat; 2) the extent to which the habitat is sensitive to human-induced environmental degradation; 3) whether, and to what extent, development activities are, or will be, stressing the habitat type; and 4) the rarity of the habitat type (50 C.F.R. § 600.815(a)(8)). The intended goal of identifying such habitats as HAPCs is to provide additional focus for conservation efforts. While the HAPC designation does not add any specific regulatory process, it highlights certain habitat types that are of high ecological importance. This designation is manifested in EFH consultations, in which NMFS can call attention to a HAPC and recommend that the federal action agency make an extra effort to protect these important habitats (NMFS and PFMC 2011).

Amendment 14 discussed HAPCs for each species, but did not establish HAPCs, citing lack of sufficient data on which to base HAPCs. Similar to EFH in general, HAPCs are subject to periodic reviews and are therefore subject to modification over time (NMFS and PFMC 2011). As part of the 5-year review, NMFS and PFMC (2011) developed five potential HAPCs for Pacific Coast salmon, which are: 1) complex channels and floodplain habitats; 2) thermal refugia; 3) spawning habitat; 4) estuaries; and 5) marine and estuarine submerged aquatic vegetation. In 2014, NMFS issued a final rule under authority of the MSA to implement Amendment 18 to the Pacific Coast Salmon FMP for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California. Amendment 18 revised the description and identification of EFH for Pacific salmon managed under the FMP, designated HAPCs, updated information on fishing activities, and updated the list of non-fishing related activities that may adversely affect EFH and potential conservation and enhancement measures to minimize those effects. Amendment 18 was approved by NMFS on September 12, 2014, and the final rule became effective on January 20, 2015 (79 FR 75449; December 18, 2014).

The five habitat types previously recommended as HAPCs for Pacific Coast salmon in NMFS and PFMC (2011) were adopted via Amendment 18 to the Pacific Coast Salmon FMP (MFMC 2016). The habitat types identified as HAPCs for Pacific Coast salmon reflect the distinctive habitat needs of anadromous species and include complex channels and floodplain habitat, thermal refugia (areas of cooler water, which are critical to salmon survival), spawning habitat, estuaries, and marine and estuarine submerged aquatic vegetation. The intended goal of identifying HAPCs is to provide additional focus for conservation efforts. While the HAPC designation does not add any specific regulatory process, it highlights certain habitat types that are of high ecological importance (PFMC 2014). As a result, federal actions with potential adverse effects to HAPCs will be more carefully scrutinized during the EFH consultation process and may result in greater conservation of EFH (PFMC 2014). These habitat types are already acknowledged for their importance as critical habitat for ESA listed species, and the HAPC designation itself is not anticipated to substantially influence EFH conservation recommendations (MFMC 2016).

Councils and NMFS should also identify non-fishing activities that may adversely affect EFH, and actions to encourage the conservation and enhancement of EFH, including recommended options to avoid, minimize, or compensate for the adverse effects identified in the FMP. Amendment 14 included 21 activities and conservation measures. Since Amendment 14 was

published, 10 additional non-fishing threats to EFH have gained attention, and include climate change, flood control maintenance, over-water structures, pile driving, and pesticide use, among others (NMFS and PFMC 2011). Although recommended conservation measures have not yet been identified for the 10 newly-identified threats, NMFS and PFMC (2011) anticipate that if the PFMC amends the Pacific Coast Salmon FMP, the descriptions of all 31 threats will be expanded upon and refined, and that conservation measures will be developed for each threat. In addition to refined descriptions of the 31 non-fishing threats, Amendment 18 identified potential conservation measures for each threat (PFMC 2014).

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SECTION 2.0

ESSENTIAL FISH HABITAT BACKGROUND

As discussed above, the MSA requires the development of FMPs for marine fisheries in the United States' exclusive economic zone. The MSA established Councils to improve fisheries management and conservation, and authorized them to prepare and implement FMPs for fisheries under their jurisdiction.

The Sustainable Fisheries Act of 1996 amended the MSA to further address fishery management and conservation issues including overfishing, bycatch, and protection of fish habitats.

NMFS issued final regulations pertaining to implementation of the EFH provisions of the MSA on January 17, 2002 (50 C.F.R., pt. 600). These regulations contain guidelines to assist the Councils and NMFS in identifying EFH in FMPs; identifying adverse effects to EFH; and identifying actions necessary to conserve and enhance EFH (50 C.F.R. §§ 600.805-600.815).

The MSA defines Essential Fish Habitat as “*those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity*” (16 U.S.C. § 1802(10)). In its definition of EFH, a NMFS regulation defines several EFH terms as follows (50 C.F.R. § 600.10):

- “*Waters*” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate.
- “*Substrate*” includes sediment, hard bottom, structures underlying the waters, and associated biological communities.
- “*Necessary*” means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem.
- “*Spawning, breeding, feeding, or growth to maturity*” covers a species' full life cycle.

Under the MSA, EFH consultation is required for any federal agency action that may adversely affect EFH, including actions that occur outside of designated EFH. The consultation required includes the following provisions (16 U.S.C. §1855(b); 50 C.F.R. § 600.920):

- Federal agencies must consult with the Secretary of Commerce, through NMFS.
- The Secretary of Commerce, through NMFS, must provide conservation recommendations to any federal or state agency if the agency's action may adversely affect EFH.
- Councils may comment on and make recommendations to the Secretary of Commerce and any federal or state agency concerning any federal or state agency action that may affect that habitat, including EFH, of a fishery resource under its authority. In

addition, the Councils must make such recommendations if in their view an activity is likely to substantially affect the habitat, including EFH of an anadromous fishery resource under Council authority.

- Federal agencies must provide a detailed response in writing to the Secretary of Commerce, through NMFS, within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the NMFS' EFH conservation recommendations, the federal agency must explain its reasons for not following the recommendations.

NMFS defines an “*adverse effect*” to EFH as any impact which reduces the quality and/or quantity of EFH, and may include “*direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH*” (50 C.F.R. § 600.910(a)).

In October 2008, NMFS promulgated additional regulations specifically related to the identification of EFH for Pacific Coast salmon (50 C.F.R. pt. 660, subpt. H). Chinook salmon EFH was defined to include “*all streams, estuaries, marine waters, and other water bodies occupied or historically accessible to Chinook salmon...*” within specified United States Geological Survey (USGS) hydrologic units, which includes the lower Yuba River (50 C.F.R. § 660.412(a) & pt. 660, subpt. H, table 1).

As required by the MSA, PFMC (1999) identified and described EFH, and identified adverse impacts and recommended conservation measures for salmon in Amendment 14 to the Pacific Coast Salmon FMP. The EFH for the Pacific Coast salmon fishery is defined as those waters and substrate necessary for salmon production needed to support a long-term sustainable salmon fishery and salmon contributions to a healthy ecosystem (PFMC 1999).

The Action Area for the Proposed Action is within the area identified as EFH for Pacific Coast salmon species identified in Amendment 14 of the Pacific Coast Salmon FMP (PFMC 1999). Chinook salmon are the largest of the Pacific salmon, and are highly prized by commercial, sport, and subsistence fishers (NMFS 2009a). Pacific Coast Chinook salmon stocks are managed by the PFMC under the Pacific Coast Salmon FMP, and these stocks primarily include fall- and late fall-run Chinook salmon from the Central Valley system (NMFS 2009a).

According to NMFS and PFMC (2011), Chinook salmon EFH, as currently designated, includes all streams, estuaries, marine waters, and other waterbodies currently occupied or historically accessible to Chinook salmon in Washington, Oregon, Idaho, and California. Exceptions include cases in which long-standing naturally occurring barriers (e.g., natural waterfalls in existence for several hundred years) or specifically identified man-made barriers (e.g., dams) represent the current upstream extent of Pacific salmon access (PFMC 1999). Additionally, some areas that

are the focus of reintroductions under Section 10(j) of the ESA may be excluded from EFH. The ESA contains provisions under Section 10(j) that facilitate cooperative efforts to reintroduce listed species into historical habitats, where NMFS works with a range of stakeholders to reach agreement on where reintroductions will occur. Designation as an experimental population under Section 10(j) encourages stakeholder support by allowing for the easing of certain ESA liabilities, such as the consultation requirements under Section 7 or the prohibition of take under Section 9, for potentially affected parties within the reintroduction area. According to PFMC (2014), cooperation is essential to these reintroduction efforts, and in certain cases, EFH designations that are not aligned with reintroduction planning could confuse the public and could have implications for ongoing and future efforts to build support to reestablish listed salmon populations in these areas. Therefore, the Council intends to consider these areas, on a case-by-case basis and in cooperation with NMFS, to determine whether it is appropriate to have EFH designations in areas where experimental populations have been, or are proposed to be, reintroduced (PFMC 2014).

With respect to other potential 10(j) considerations in the Yuba River Basin, YCWA filed with FERC YCWA’s *Understanding of Agreed-Upon FPA Section 10(j) Potential Recommendations* (FERC Project No. 2246-042) on December 1, 2016. This letter advised FERC that YCWA believes that YCWA, the USFWS and Cal Fish and Wildlife have reached an agreement on five Federal Power Act (FPA) Section 10(j) recommendations [10(j) potential recommendations] for YCWA’s Yuba River Development Project, FERC Project Number 2246. The agreed-upon 10(j) potential recommendations are listed below in Table 2.0-1, which shows, for each recommendation, the parties that have advised YCWA that they agree with the recommendation.

Table 2.0-1. List of 10(j) potential recommendations on which YCWA, USFWS and Cal Fish and Wildlife have reached agreement.

10(j) Potential Recommendations		YCWA's Understanding of Parties That Agree With the 10(j) Potential Recommendation				
		YCWA	FS ²	USFWS	CDFW	FWN ³
No. ¹	Name					
GEN4	Develop and Implement a Coordinated Operations Plan to Assure Licensee’s Compliance with the New License for the Yuba River Development Project	X		X	X	X
AR4	Control Protect Spills at New Bullards Bar Dam	X	X		X	X
AR6	Implement New Bullards Bar Reservoir Fish Stocking Plan	X	X		X	X
AR8	Implement Lower Yuba River Aquatic Monitoring Plan	X	X	X	X	X
TR3	Implement Ringtail Management Plan	X	X	X	X	X
<i>Subtotal by Party</i>		5	4	3	5	5
		5				

¹ The designation corresponds to the designation of a similar condition proposed by YCWA in its April 2014 FLA.

² FS means United States Department of Agriculture, Forest Service, which has advised YCWA that the Forest Service may file this recommendation as a FPA § 10(a) recommendation.

³ Foothills Water Network.

Chinook salmon EFH includes the marine areas off Alaska designated as salmon EFH by the North Pacific Fishery Management Council (NPFMC). Including marine EFH designated by the NPFMC serves to recognize the migratory patterns of Chinook salmon and the importance of

habitat during all lifestages. Current marine EFH for Chinook salmon includes the entire exclusive economic zone (EEZ) around Alaska. The southern extent of Chinook salmon marine EFH extends to Point Conception, California, which represents the approximate southern extent of the Chinook salmon range. Important elements of Chinook salmon marine EFH include juvenile and adult migration, estuarine rearing, and ocean rearing. Key features of estuarine and marine habitats include:

- Water Quality
- Depth and Habitat Complexity, including Marine Vegetation and Algae in Estuarine and Near-Shore Habitats
- Water Temperature
- Prey Species and Forage Base (Food)
- Connectivity with Terrestrial Ecosystems

Overall, Chinook salmon marine distribution is extensive, varies seasonally and inter-annually, and can only be defined generally (PFMC 1999; PFMC 2014).

Freshwater EFH for Pacific Coast salmon in the Central Valley includes waters currently or historically accessible to salmon within the Central Valley ecosystem as described in Myers et al. (1998). EFH includes not only the watersheds of the Sacramento and San Joaquin River basins, but also the San Joaquin Delta (Delta) hydrologic unit (i.e., HUC No. 18040003), Suisun Bay hydrologic unit (HUC No. 18050001) and the lower Sacramento hydrologic unit (HUC No. 18020163). Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley fall- and late fall-run Chinook salmon are species managed under the Pacific Coast Salmon FMP that occur in the Central Valley, as well as the Delta, Suisun Bay, and lower Sacramento River hydrologic units.

2.1 1999 Initial EFH Designation

In 1999, the PFMC identified EFH for Central Valley Chinook salmon stocks to include the Sacramento and San Joaquin rivers and their tributaries as EFH. Freshwater EFH for Chinook salmon consists of four major habitat functions: 1) adult migration corridors and adult holding habitat; 2) spawning and incubation; 3) juvenile rearing; and 4) juvenile migration corridors (PFMC 1999). Important features of EFH for spawning, rearing and migration include:

- Access and Passage
- Water Quantity, Depth and Velocity
- Channel Gradient and Stability
- Cover and Habitat Complexity (e.g., large woody material, pools, channel complexity, aquatic vegetation)
- Substrate Composition
- Floodplain and Habitat Connectivity
- Space
- Prey Species and Forage Base (Food)
- Water Quality (e.g., dissolved oxygen, nutrients, water temperature)

2.2 2008 EFH Designation Codification

In October 2008, NMFS promulgated additional regulations specifically related to the identification of EFH for Pacific salmon (73 FR 60987). Chinook salmon EFH was defined to include “*all streams, estuaries, marine waters, and other water bodies occupied or historically accessible to Chinook salmon...*” within specified USGS hydrologic units, which include the Yuba River (50 C.F.R. § 660.412(a) & pt. 660, subpt. H, table 1).

The MSA requires the Councils and NMFS to periodically review the EFH provisions of FMPs, and to revise or amend EFH provisions as warranted, based on available information (50 C.F.R. § 600.815(a)(10)). Reviews should be conducted periodically, and complete reviews should be conducted at least once every five years. Pacific Coast salmon EFH was first designated in 1999 as part of Amendment 14 to the Pacific Coast Salmon FMP, and was codified in 2008 as a result of litigation (*Idaho County et al. v. Evans et al.*, United States District Court for the District of Idaho, Case No. CV02-80-CEJL).

2.3 NMFS 2011 5-Year Review of EFH for Pacific Coast Salmon

In March 2011, NMFS and PFMC (2011) released a report titled *Pacific Coast Salmon 5-Year Review of Essential Fish Habitat Final Report to the Pacific Fishery Management Council*, which described the findings from the latest 5-year review, as summarized below.

- A summary of existing designations of EFH for Pacific Coast salmon
- Currently available information on the distribution of Pacific Coast salmon in both fresh and marine waters
- Potential changes to the existing EFH designations
- Potential changes to the list of impassible dams that currently form the upstream extent of EFH
- A discussion regarding whether appropriate models exist to predict salmon distribution where data on distribution are lacking
- A discussion of potential Habitat Areas of Particular Concern (HAPC)
- A summary of new information on the life history and habitat requirements of salmon
- Updated information on threats to EFH both from fishing and non-fishing activities
- Identification of research needs to further refine EFH

2.4 Pacific Coast Salmon FMP Amendment 18

As previously discussed, Amendment 18 included updates to reflect new information on EFH, including: 1) criteria for impassible barriers; 2) addition of HAPCs; 3) adjustments to

geographic extent of EFH; 4) addition of non-fishing activities and conservation measures; and 5) minor typographical adjustments and clarifications (PFMC 2016a). Amendment 18 was approved by NMFS on September 12, 2014, and became effective on January 20, 2015 (79 FR 75449; December 18, 2014).

2.5 Pacific Coast Salmon FMP Amendment 19

Amendment 19 added a suite of lower trophic level species to the Pacific Coast Salmon FMP's list of ecosystem component (EC) species^{5,6}. Consistent with the objectives of the Pacific Fishery Management Council's FMPs and its Fishery Ecosystem Plan, Amendment 19 prohibits future development of directed commercial fisheries for the suite of EC species shared between all four FMPs (shared EC species), including the Pacific Coast Salmon FMP, until and unless the Council has had an adequate opportunity to both assess the scientific information relating to any proposed directed fishery and consider potential impacts to existing fisheries, fishing communities, and the greater marine ecosystem.

In September 2015, the Pacific Fishery Management Council approved new protections for forage fish species that are currently unfished and unmanaged. The purpose of the action is to prohibit new directed commercial fishing in federal waters on unmanaged, unfished forage fish species until the Council has had an adequate opportunity to both assess the scientific information relating to any proposed directed fishery and consider potential impacts to existing fisheries, fishing communities, and the greater marine ecosystem (PFMC 2016b). This action was taken in recognition of the importance of these forage fish to the species managed under the Council's FMPs, including Pacific Coast salmon, and to the larger California Current Ecosystem. Amendment 19 was approved by NMFS in 2015 and became effective in March 2016 (PFMC 2016a).

⁵ Ecosystem component (ECs) stocks are non-target stocks that are not in the fishery (PFMC 2016a).

⁶ Species covered by Amendment 19 include: 1) round herring (*Etrumeus teres*); 2) thread herring (*Opisthonema libertate* and *O. medirastre*); 3) mesopelagic fishes, including lanternfish (*Myctophidae*), deep-sea smelts (*Bathylagidae*), barracudina (*Paralepididae*) and bristlemouths (*Gonostomatidae*); 4) Pacific sand lance (*Ammodytes hexapterus*); 5) Pacific saury (*Cololabis saira*); 6) silversides (family Atherinopsidae); 7) Osmerid smelts; and 8) pelagic squids except market squid (*Doryteuthis opalescens*) and Humboldt squid (*Dosidicus gigas*) (pelagic squid families: *Cranchiidae*, *Gonatidae*, *Histioteuthidae*, *Octopoteuthidae*, *Ommastrephidae*, *Onychoteuthidae*, and *Thysanoteuthidae*) (NMFS 2016; PFMC 2015).

SECTION 3.0

CONSULTATION HISTORY

If a federal action agency determines that a proposed action may have an adverse effect on EFH, consultation is required. Activities proposed to occur in EFH areas do not automatically require consultation. Consultations are triggered only when the proposed action may adversely affect EFH, and then, only federal actions require consultation (Hanson et al. 2004). There are four components of an EFH consultation, which are:

- Notification. The federal action agency (e.g., FERC) notifies NMFS of an activity that may adversely affect EFH.
- Essential Fish Habitat Assessment. The federal action agency provides the Secretary of Commerce (through NMFS) with a description of the proposed action, analysis of effects, and effect determination.
- Conservation Recommendations. NMFS involves the federal action agency in development of advisory EFH conservation recommendations and provides them to the federal agency.
 - The Councils (through NMFS) may also comment on and make recommendations to the Secretary of Commerce and any federal agency concerning any federal agency action that may affect that habitat, including EFH, of a fishery resource under its authority. In addition, the Council must make such recommendations, if in its view, an activity is likely to substantially affect the habitat, including EFH of an anadromous fishery resource under Council authority.
- Federal Action Agency Response. The federal action agency that receives the EFH conservation recommendations provides a written response to NMFS within 30 days after receiving NMFS conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the NMFS' EFH conservation recommendations, the federal agency must explain its reasons for not following the recommendations (16 U.S.C. § 1855(b)(4)(B)).

3.1 EFH Consultations for the Proposed Action

Wherever possible, NMFS utilizes existing interagency coordination processes to fulfill EFH consultations with federal agencies. Specific coordination activities that YCWA has previously conducted with NMFS are described below. Some of the meetings in which NMFS staff participated are listed below.⁷

⁷ YCWA based this list on sign-in sheets from each meeting. Therefore, the list does not include NMFS staff that participated in the meeting and did not sign in.

- July 15, 2009. Larry Thompson (NMFS) was present for YCWA's initial meeting between agencies and non-governmental organizations (NGOs) to describe the Project, relicensing plan, process and items suggested by Foothill Water Network (FWN).
- August 31, 2009. Larry Thompson (NMFS) was present for the communication guidelines meeting held by YCWA where agencies and NGOs agreed to meet to discuss relicensing communication guidelines.
- October 1, 2009. YCWA offered a Project Tour to familiarize agencies, tribes and NGOs with the Project on the ground. Larry Thompson (NMFS) was present for the tour.
- May 24, 2010. Rick Wantuck (NMFS) attended the third study proposal development meeting regarding anadromous fishes, ESA/CESA Species and non-ESA-listed fish below Englebright Dam.
- May 4, 2011. Larry Thompson and John Wooster (NMFS) participated by phone in the Relicensing Participants meeting regarding the new studies proposed by USFWS and FWN.
- May 11, 2011. Larry Thompson and John Wooster (NMFS) attended the Relicensing Participants Meeting regarding FERC required proposed study plan meeting.
- May 19, 2011. Section 7 Consultation Meeting. The following NMFS representatives participated in this meeting: Maria Rea, Rod McInnis, Rick Wantuck, Larry Thompson, Howard Brown, Steve Edmondson, and Gary Sprague.
- June 3, 2011. John Wooster (NMFS) was present for the Relicensing Participants Meeting to continue the May 11, 2011 discussion of channel morphology study proposals.
- June 17, 2011. Larry Thompson, Rick Wantuck, and John Wooster (NMFS) participated in the Relicensing Participants Meeting to discuss NMFS' Study Requests and FWN's Anadromous Fish Passage Study Request.
- July 21, 2011. NMFS was not present for the NMFS/FERC/YCWA Section 7 Informal Consultation Meeting.
- July 27, 2011. Larry Thompson and John Wooster (NMFS) participated in the Relicensing Participants meeting regarding the general Lower Yuba River 2-D Hydraulic Model.
- August 5, 2011. NMFS/FERC/YCWA Section 7 Informal Consultation Meeting.
- August 12, 2011. NMFS/FERC/YCWA Section 7 Informal Consultation Meeting.
- October 20, 2011. NMFS filed with FERC a dispute regarding the Commission's study request determination. NMFS identified as "*in dispute*" seven studies that were requested by NMFS and not adopted by the Commission in its determination. Each of the studies included "*elements,*" which were in effect separate studies. In total, the 7 studies included 54 elements. The NMFS-requested studies in dispute were: 1) Effects of the Project and Related Activities of Fish Passage for Anadromous Fish (12 elements); 2) Effects of the Project and Related Activities on Hydrology for Anadromous Fish (8

elements); 3) Effects of the Project and Related Activities on Water Temperature for Anadromous Fish Migration Holding, Spawning, and Rearing Needs (3 elements); 4) Effects of the Project and Related Activities on Coarse Substrate for Anadromous Fish: Sediment Supply, Transport, and Storage (6 elements); 5) Effects of the Project and Related Activities on Large Wood and Riparian Habitat for Anadromous Fish (4 elements); 6) Effects of the Project and Related Activities on the Loss of Marine-Derived Nutrients in the Yuba River (7 elements) and 7) Anadromous Fish Ecosystems Effects Synthesis of the Direct, Indirect, and Cumulative Effects of the Project and Related Facilities on Anadromous Fish (14 elements).

- November 23, 2011. Licensee filed with FERC Study 6.1, Riparian Habitat Upstream of Englebright Reservoir Study Large Woody Debris Survey Sites in response to NMFS' October 20, 2011 notice to initiate a formal study dispute resolution process regarding FERC's Determination.
- December 13, 2011. YCWA and NMFS participated in a conference call with FERC in an effort to resolve some of the NMFS' disputes.
- March 21, 2012. Licensee held a follow-up conference call with FERC, NMFS, USFWS, Cal Fish and Wildlife and the State Water Resources Control Board (SWRCB) and believed that general agreement on the approach to Study 7-11, *Fish Behavior and Hydraulics Near Narrows 2 Powerhouse*, was reached.
- April 17, 2012. Licensee provided the draft modified Study 7-11, *Fish Behavior and Hydraulics Near Narrows 2 Powerhouse* and provided to the United States Army Corps of Engineers (USACE), USFWS, NMFS, Cal Fish and Wildlife, and the SWRCB for 30-day review and comment. Cal Fish and Wildlife provided written comments in an email dated May 15, 2012. SWRCB provided comments on May 17, 2012. NMFS did not provide written comments to the Licensee, but filed a letter with FERC dated May 25, 2012, which included comments on the Study. USACE and USFWS did not provide written comments.
- June 1, 2012. Licensee filed with FERC the Modified Study 7-11, *Fish Behavior and Hydraulics Near Narrows 2 Powerhouse* and included the Lower Yuba River Accord Planning Team Acoustic Telemetry Annual Report 2009, Licensee's request for comments on the draft modified Study; written comments received from Cal Fish and Wildlife, SWRCB, and NMFS, and YCWA's reply to the written comments.
- June 14, 2012. Tom Holley, Hydrologist and Larry Thompson (NMFS) were present for the Relicensing Participants Meeting to discuss the Study 2-2, Water Balance/Operations Model - Consultation Meetings.
- December 12, 2013. Licensee held an Initial Study Report meeting for the Yuba River Development Project at their office in Marysville, California.
- January 8, 2013. John Wooster (NMFS) was present for the Relicensing Participants Meeting to discuss consultation for Study 6-1, *Riparian Habitat Above Englebright* and Study 6-2, *Riparian Habitat Below Englebright*.

- January 28, 2013. Close of the comment period for the Licensee's Initial Study Report and meeting summary. Six letters were filed with FERC by the deadline. Letters were received from: 1) Forest Service; 2) National Park Service; 3) USFWS; 4) NMFS; 5) Cal Fish and Wildlife; and 6) Foothills Water Network (FWN).
- January 30, 2013. John Wooster (NMFS) was present for the Relicensing Participants meeting to discuss consultation for Study 1-1, *Channel Morphology Above Englebright* and Study 2-3, *Water Quality*.
- April 17, 2013. Licensee provided the Draft Study Plan 7-13, *Fish Stranding Associated with the Shutdown of Narrows 2 Powerhouse Partial Bypass* to the NMFS, USFWS and Cal Fish and Wildlife. Licensee did not receive written comments from NMFS, USFWS and Cal Fish and Wildlife by May 7, 2013. Licensee confirmed with NMFS, USFWS and Cal Fish and Wildlife that each agency did not have any comments on the draft study plan.
- July 3, 2013. Licensee provided Draft Study 7-11a, *Radio Telemetry Study of Spring-and Fall-run Chinook Salmon Migratory Behavior Downstream of Narrows 2 Powerhouse* to NMFS, USFWS, and Cal Fish and Wildlife for review and written comment. Licensee received written comments from NMFS and USFWS.
- August 14, 2013. Licensee filed with FERC the Transmittal of Plan for Study 7-11a, *Radio Telemetry Study of Spring- and Fall-run Chinook Salmon Migratory Behavior Downstream of Narrows 2 Powerhouse* and included written comments from NMFS and USFWS.
- September 20, 2013. Licensee filed with FERC additional work to be performed for Study 3-8, *Stream Fish Populations Upstream of Englebright Reservoir* and Study 3-11, *Entrainment*. The following Relicensing Participants agreed with additional work at the September 16, 2013 meeting: Forest Service, USFWS, SWRCB, Cal Fish and Wildlife, FWN and the South Yuba River Citizens League (SYRCL).
- September 26, 2013. Tom Holley, Larry Thompson and John Wooster (NMFS) were present for the YCWA Relicensing Study 7-11a Telemetry Technical Review.
- January 14, 2014. Larry Thompson (NMFS) was present for a discussion of Study 6.2, *Riparian Habitat below Englebright Dam*.
- August 26, 2014. Tom Holley (NMFS) was present for a discussion of model runs for flow below Englebright Dam.

In addition to the Relicensing Participants meetings, YCWA held informal meetings with NMFS and FERC.

- June 1, 2011. Participants included Alan Mitchnick and Ken Hogan (FERC), Gary Sprague (NMFS), Curt Aikens, Geoff Rabone, Alan Lilly, Tom Johnson and Jim Lynch (YCWA). The meeting participants discussed defining terms that are used in both ESA-related documents and National Environmental Policy Act (NEPA)-related documents, potential information gaps, new and altered studies requested by NMFS, and schedule and topics for future meetings.

- June 6, 2011. Meeting participants included Alan Mitchnick, Ken Hogan (FERC), Gary Sprague (NMFS), Geoff Rabone, Alan Lilly and Jim Lynch (YCWA). Meeting participants discussed revisions to the June 1, 2011 meeting summary, action items from that June 1, 2011 meeting, ESA and FERC's NEPA process, potential information gaps, the schedule for meetings in July and August 2011.
- June 17, 2011. Meeting participants included Alan Mitchnick, Ken Hogan (FERC), Gary Sprague, Richard Wantuck, Larry Thompson, John Wooster, Tom Holley (NMFS), Curt Aikens, Geoff Rabone, Alan Lilly, Tom Johnson, Paul Bratovich and Jim Lynch (YCWA). The meeting participants discussed potential information gaps for ESA consultation, and fish passage.
- July 12, 2011. Meeting participants included Alan Mitchnick, Ken Hogan (FERC), Gary Sprague, Richard Wantuck (NMFS), Curt Aikens, Geoff Rabone, Alan Lilly, and Jim Lynch (YCWA). The meeting participants discussed potential information gaps for ESA consultation, new and altered studies requested by NMFS, and schedule and topics for future meetings.
- April 20, 2012. Meeting participants included Alan Mitchnick, Ken Hogan (FERC), Gary Sprague, Richard Wantuck (NMFS), Geoff Rabone, Alan Lilly, Paul Bratovich, Bill Snider and Jim Lynch (YCWA). The meeting participants discussed the organization and schedule for preparation of the Applicant-Prepared Draft BA and Applicant-Prepared Draft EFH Assessment, and topics for future meetings.

YCWA has attempted to schedule additional consultation meetings with NMFS. However, NMFS staff has been unavailable due to their heavy workload.

3.2 Key Consultation Considerations

3.2.1 NMFS 2005 Biological Opinion (Yuba River Development Project License Amendment)

In October 2003, FERC requested initiation of early consultation on the proposed amendment to the license for the Project (FERC Project No. 2246) in order to authorize YCWA to construct and operate a Full Bypass at its Narrows 2 Powerhouse, and to revise the flow reduction and fluctuation criteria in the FERC license. The construction of the Full Bypass and the revised flow reduction and fluctuation criteria were designed to minimize the possibility that emergencies and other events requiring that the Narrows 2 Powerhouse be taken offline would cause significant flow fluctuations in the Yuba River, and thereby minimize the possibility that such fluctuations would strand juvenile spring-run Chinook salmon and steelhead, or dewater redds of those species (NMFS 2005).

Before the Full Bypass was completed, flow reductions resulting from emergency and accidental shutdowns of the Narrows 2 Powerhouse were a major concern due to potentially adverse flow and water temperature effects on listed spring-run Chinook salmon and steelhead. The ability to manage releases from Narrows 2 Powerhouse during maintenance and emergency operations was limited by the design of Englebright Dam and the Partial Bypass capability of the Narrows 2

Powerhouse, which was previously only able to bypass 650 cubic feet per second (cfs) (or approximately 20%) of the 3,400 cfs capacity of the powerhouse. In the past, uncontrolled flow reductions due to unexpected outages at Narrows 2 Powerhouse adversely affected spawning redds and fry and juvenile rearing areas (FERC 2001). However, with the completion of the Full Bypass in 2006, adverse effects to listed species due to emergencies, maintenance, and accidental shut-downs of the powerhouse have been virtually eliminated.

On January 26, 2005, NMFS issued a preliminary BO to FERC analyzing the potential effects of YCWA's license amendment on spring-run Chinook salmon and steelhead. Subsequent to the completion of the preliminary BO, the Action Area for the Project was proposed for designation as critical habitat for these two species (NMFS 2005). In addition, the southern Distinct Population Segment (DPS) of North American green sturgeon was proposed for listing as threatened throughout its range within the Sacramento/San Joaquin river systems, which included the lower Yuba River (NMFS 2005).

NMFS' (2005) Final BO, issued on November 4, 2005, concluded that the effects of the proposed license amendment is not likely to jeopardize the continued existence of the Central Valley spring-run Chinook salmon ESU or Central Valley steelhead DPS, or destroy or adversely modify designated critical habitat for these species. NMFS (2005) also concluded that the effects of the Project are not likely to jeopardize the continued existence of the southern DPS of North American green sturgeon.

3.2.2 NMFS 2014 Biological Opinion (USACE's Operation and Maintenance of Daguerre Point Dam)

The USACE's Sacramento District reinitiated formal consultation with NMFS on the USACE's ongoing O&M of Daguerre Point Dam and associated facilities in February 2013. During April 2013, NMFS responded to the USACE's request with a letter stating that the reinitiated consultation would begin after NMFS received the final BA from the USACE that contained a description of the proposed Project and addressed all of the information necessary to evaluate the effects of the action on listed species and critical habitat.

The USACE completed a BA for its activities at Daguerre Point Dam, and delivered it to NMFS on October 22, 2013. The BA (referred to herein as the USACE 2013 BA) was prepared to, among other things, describes the Proposed Action and analyzes the effects of that action on listed species and designated critical habitat.

As discussed in the USACE 2013 BA, the USACE's responsibilities, as well as its ability to conduct O&M-related actions at Daguerre Point Dam, are primarily governed by the facility's authorized purposes. Consequently, the USACE's actions that were proposed and evaluated in the USACE 2013 BA, which could potentially affect listed fish species in the lower Yuba River, were somewhat limited.

Several actions affected listed species and their critical habitats in the lower Yuba River prior to the 2013 reinitiation of consultation between the USACE and NMFS, including:

- March 2008. The SWRCB approved the changes in the water right permits of YCWA that were necessary to implement the Yuba Accord.
- June 2009. YCWA entered into a Settlement Agreement with Plaintiffs SYRCL and Friends of the River (FOR) in their lawsuit against NMFS et al. This settlement resulted in improvements to the maintenance and operations of the South Yuba/Brophy diversion channel and facilities.
- June 2009. NMFS issued its Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project (CVP) and State Water Project (SWP).
- October 2009. NMFS issued the Draft Recovery Plan for the Sacramento River winter-run Chinook salmon and Central Valley spring-run Chinook salmon ESUs, and the Central Valley steelhead DPS.
- October 2009. NMFS issued its final rulemaking to designate critical habitat for the threatened Southern DPS of North American green sturgeon.

On May 12, 2014, NMFS issued its Final BO (2014 BO) regarding the effects of Daguerre Point Dam on the Central Valley spring-run Chinook salmon ESU, Central Valley steelhead DPS, the Southern DPS of North American green sturgeon, and their designated critical habitats.

The 2014 BO concluded that the O&M of Daguerre Point Dam, as proposed by the USACE, would not likely jeopardize the continued existence of spring-run Chinook salmon, steelhead, and green sturgeon, and would not result in the adverse modification of critical habitat for each of these species. The 2014 BO included Reasonable and Prudent Measures (RPMs) and discretionary terms and conditions to minimize incidental take associated with the USACE's proposed action.

NMFS determined that the following RPMs were necessary and appropriate to minimize take of spring-run Chinook salmon, steelhead and green sturgeon in the lower Yuba River and, therefore, should be implemented by the USACE.

- RPM-1. Measures shall be taken by the USACE to minimize the effects of sediment removal at Daguerre Point Dam.
- RPM-2. Measures shall be taken by the USACE to minimize the effects of debris maintenance and removal at the Daguerre Point Dam fish ladders.
- RPM-3. Measures shall be taken by the USACE to minimize the effects of gravel injections downstream from Englebright Dam.
- RPM-4. Measures shall be taken by the USACE to minimize the effects of the large wood placement downstream of Englebright Dam.

- RPM-5. Prepare and provide NMFS with plan(s) and report(s) describing how listed species in the action area would be protected and/or monitored and to document the effects of the action on listed species in the action area.

To minimize or avoid adverse effects of the USACE's Proposed Action on listed species or critical habitat, NMFS also provided the following conservation recommendations that should be implemented by the USACE.

- (1) The following recommendations should be implemented by the USACE with respect to dam flashboard management at Daguerre Point Dam.
 - (a) The USACE should submit a Flashboard Management Plan to NMFS within 60 days of issuance of the BO.
 - (b) Any proposed variance to the implementation of the Flashboard Management Plan should be provided to NMFS.
 - (c) The USACE should notify NMFS within 24 to 48 hours of any debris accumulation on the flashboards on the face of Daguerre Point Dam.
 - (d) Measures to remove flashboard blockage should be in compliance with the USACE's Flashboard Management Plan.
 - (e) The USACE should notify NMFS within 24 hours of any debris accumulation at the Daguerre Point Dam flashboards.
 - (f) Measures to remove flashboard blockage should be in compliance with the Flashboard Management Plan.
 - (g) The USACE, should within five years, develop the flow-based trigger for installation of the Daguerre Point Dam flashboards.
 - (h) The USACE should provide notification after the first week of flashboard installation confirming that the flashboard installation meets the objectives of the Flashboard Management Plan. If the installation is not found to meet objectives, the USACE should coordinate with NMFS to develop alternative actions.
 - (i) The USACE should, by January 31 of each year, report to NMFS an update on previous year's flashboard management actions.
- (2) The USACE should continue their efforts to complete the Yuba River reconnaissance study by September 30, 2015, in accordance with applicable Engineer Regulations and policies.

- (3) The USACE should coordinate with NMFS and other Yuba watershed stakeholders⁸ regarding the reconnaissance study and any subsequent feasibility study if approved.
- (4) The USACE should consider predator removal at Daguerre Point Dam.

3.2.3 NMFS 2014 Letter of Concurrence (USACE’s Operation and Maintenance of Englebright Dam)

During February 2013, the USACE also notified NMFS of its intent to reinitiate consultation to address the impacts of the USACE’s discretionary activities associated with operation and maintenance of Englebright Dam and Reservoir on spring-run Chinook salmon, steelhead, green sturgeon and their associated critical habitats.

Previous ESA consultations between the USACE and NMFS regarding projects on the Yuba River encompassed activities at both Englebright and Daguerre Point dams. However, for the 2013 ESA consultation, the USACE determined that it was appropriate to evaluate the two projects separately in two BAs because “*each dam has a separate authorization and appropriation, and because the actions at Englebright and Daguerre are wholly separate and are not dependent upon each other to operate.*” On October 22, 2013, NMFS received a request for a written concurrence that the USACE’s ongoing O&M of Englebright Dam and Reservoir may affect, but is not likely to adversely affect, spring-run Chinook salmon, steelhead, green sturgeon, and the designated critical habitat for those listed species.

In a May 12, 2014 letter to the USACE, NMFS concurred with the USACE’s determination that the USACE’s discretionary actions regarding Englebright Dam and Reservoir are not likely to adversely affect spring-run Chinook salmon, steelhead, or green sturgeon in the Yuba River, or their designated critical habitats in the Yuba River (NMFS 2014a).

3.2.3.1 Litigation Regarding the NMFS 2014 BO on Daguerre Point Dam and NMFS 2014 Letter of Concurrence on Englebright Dam and Reservoir

On April 20, 2016, the Friends of the River (FOR) filed a complaint for declaratory and injunctive relief in the United States District Court, Eastern District of California (Case 2:16-cv-00818-JAM-EFB). FOR’s original complaint against the USACE, NMFS and the Bureau of Land Management (BLM) alleged that the three federal agencies failed to comply with the Administrative Procedure Act and ESA requirements regarding threatened spring-run Chinook salmon, steelhead and green sturgeon in the lower Yuba River. YCWA moved to intervene as a party in the litigation on October 7, 2016, and the court granted this motion on October 13, 2016.

On November 29, 2016, the court approved a stipulation by the parties in which FOR agreed to dismiss various claims and to dismiss BLM as a defendant. The amended FOR complaint still

⁸ Yuba River watershed stakeholders include, but are not limited to; the Federal Energy Regulatory Commission, National Marine Fisheries Service, U.S. Bureau of Reclamation, U.S. Forest Service, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, California Department of Water Resources, American Rivers, Friends of the River, Nevada Irrigation District, Pacific Gas & Electric, South Yuba River Citizens League, Yuba County Water Agency, South County Diversifiers, and participants in the Yuba River Management Team and Yuba Salmon Forum.

disagrees with the conclusions of the 2013-14 ESA consultations that the USCAE's discretionary actions on the lower Yuba River will not jeopardize the ESA-listed fish species or adversely modify their critical habitats. FOR's amended complaint includes nine claims for relief, which challenge the adequacy of the USACE's 2013 biological assessments, NMFS' 2014 BO for Daguerre Point Dam and NMFS' 2014 concurrence letter regarding Englebright Dam and Reservoir, and asks the court to require the USACE to reinstate ESA consultation with NMFS. The litigation is pending.

3.2.4 Other Activities

3.2.4.1 Lower Yuba River Accord

In 2005, YCWA and 16 other interested parties signed memoranda of understanding that specified the terms of the Lower Yuba River Accord (Yuba Accord), a comprehensive, consensus-based program to protect and enhance aquatic habitat in the Yuba River downstream of Englebright Dam. Following environmental review, YCWA and parties executed the following four agreements in 2007, which together comprise the Yuba Accord: 1) the Lower Yuba River Fisheries Agreement, which specifies the Yuba Accord's lower Yuba River minimum streamflows and creates a detailed fisheries monitoring and evaluation program; 2) the Water Purchase Agreement, under which DWR purchases water, some of which is provided by the Yuba Accord's minimum streamflows, from YCWA's for CALFED's⁹ Environmental Water Account and State Water Project and Central Valley Project contractors; 3) the Conjunctive Use Agreements with seven of YCWA's member units, which specify the terms of the Yuba Accord's groundwater conjunctive-use program; and 4) amendments to the 1966 Power Purchase Contract between YCWA and the Pacific Gas and Electric Company (PG&E).

The Yuba Accord was developed by a multi-agency resource team, including representatives from NMFS, USFWS, Cal Fish and Wildlife, YCWA and a group of NGOs (i.e., Cal Trout, SYRCL and The Bay Institute). The Yuba Accord flow schedules 1 and 2 were developed to essentially optimize habitat conditions for anadromous fish during high flow years for this regulated river system. Subsequently, flow schedules 3, 4, 5, 6 and Conference Year provisions were developed by the resources team for drier conditions.

YCWA has been operating the Project in conformance with the Yuba Accord since 2006. The 2006, 2007, and early 2008 operations were under 1-year pilot programs that were approved by the SWRCB.

The Yuba Accord includes a specific set of flow schedules for the Yuba River. The flow schedule that is in effect at any particular time is determined by the North Yuba Index (NYI), a hydrologic index that was developed as a part of the Yuba Accord. The flow schedules are listed in Table 3.2-1. The relationship between Yuba Accord flow schedules and the NYI is depicted in Figure 3.2-1.

⁹ Interagency committee with management and regulatory responsibility for Bay-Delta Estuary.

Table 3.2-1. Yuba Accord flow schedules.

Schedule	Oct	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Apr	May	May	Jun	Jun	Jul	Aug	Sep	Total Annual Vol. (ac-ft)
	1-15	16-30	1-30	1-31	1-31	1-29	1-31	1-15	16-30	1-15	16-31	1-15	16-30	1-31	1-31	1-30	
MARYSVILLE GAGE (cfs)																	
1	500	500	500	500	500	500	700	1,000	1,000	2,000	2,000	1,500	1,500	700	600	500	574,200
2	500	500	500	500	500	500	700	700	800	1,000	1,000	800	500	500	500	500	429,066
3	500	500	500	500	500	500	700	700	900	900	900	500	500	500	500	500	398,722
4	400	400	500	500	500	500	500	600	900	900	600	400	400	400	400	400	361,944
5	400	400	500	500	500	500	500	500	600	600	400	400	400	400	400	400	334,818
6	350	350	350	350	350	350	350	350	500	500	400	300	150	150	150	350	232,155
SMARTSVILLE GAGE (cfs)																	
A	700	700	700	700	700	700	700	700	--	--	--	--	--	--	--	700	--
B	600	600	600	550	550	550	550	600	--	--	--	--	--	--	--	500	--

Notes:

Marysville gage flows represent average volumes for the specified period. Actual flows may vary from the indicated flows according to established criteria.

Marysville gage Schedule 6 flows do not include an additional 30,000 ac-ft that SWRCB Corrected Order WR 2008-0014 requires YCWA to make available through groundwater substitution transfers. These additional flows will be allocated during Schedule 6 years.

Smartsville gage Schedule A is used with Marysville Schedules 1, 2, 3, and 4.

Smartsville gage Schedule B is used with Marysville Schedules 5 and 6.

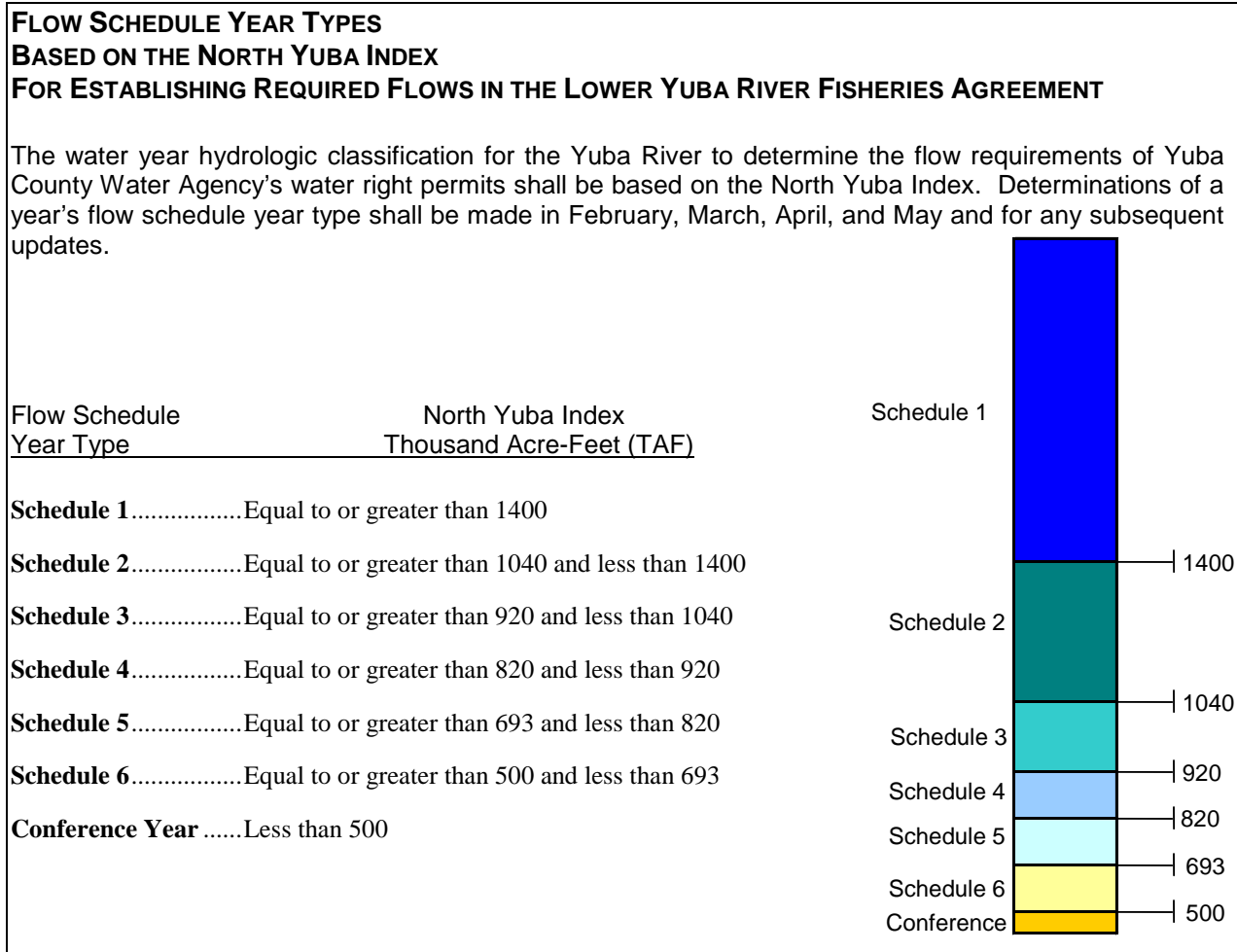


Figure 3.2-1. Yuba Accord North Yuba Index.

During Conference Years, which are years when the NYI is less than 500,000 acre-feet (ac-ft), and which are expected to occur approximately one percent of the time, YCWA is required: 1) to maintain minimum instream flows in the Yuba River at the levels specified in Article 33 of YCWA's existing FERC license without the reductions authorized by subsections (c) and (d) of that article; 2) to release any supplemental flows recommended by the Lower Yuba Accord River Management Team (RMT) and approved by the SWRCB's Deputy Director for Water Rights or, if no such recommended flows are effective by April 11 of such a Conference Year, then to release any supplemental flows ordered by the SWRCB, after a hearing under California Code of Regulations, title 23, § 767; and 3) to limit total water supply diversions at Daguerre Point Dam to 250,000 ac-ft.

The original Yuba Accord Conference Year flow schedules were equivalent to the minimum flow schedules included in Licensee's original 1963 FERC license. Biological understanding of the Yuba River since 1963, including work overseen by the RMT since 2007, have suggested improvements in the Conference Year flow schedules, which are included in Licensee's proposal.

First, the total Conference Year flow schedule volume included in Licensee's proposal is approximately 13 percent greater than the Conference Year flow schedules included in the Yuba Accord Conference Year flow schedules. The total annual Conference Year flow schedule volume is 197,445 ac-ft in Licensee's proposal, and 174,208 ac-ft in the Yuba Accord.

Second, the potential for redd dewatering has been studied by Licensee and the RMT during the past seven years. As a result, Licensee is proposing a more consistent Conference Year flow schedule during the November through March time frame (consistent with spawning and the incubation period of Chinook salmon in the Yuba River). Licensee believes that this consistent flow level will provide less potential for redd dewatering than the original Conference Year flow schedules in the 1963 FERC license. This also represents an approximate 14 percent increase in total volume of Conference Year releases during the November through March time period.

Third, Licensee believes that slightly higher Conference Year releases of the original Accord flows, which are the flows during the summer months (July through September), could provide better thermal conditions in the Yuba River than the Conference Year releases included in the 1963 FERC license. Accordingly, Licensee suggests additional releases totaling 14,598 ac-ft, or approximately 114 percent increase during the July through September time period.

3.2.4.2 NMFS Recovery Planning

Section 4(f) of the federal Endangered Species Act of 1973 (16 U.S.C. § 1533(f)) directs NMFS to develop and implement plans for the conservation and survival of NMFS-listed species. On July 22, 2014, NMFS published in the Federal Register (79 FR 42504) of its adoption of a Final Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-Run Chinook Salmon, Central Valley Spring-Run Chinook Salmon and the Distinct Population Segment of Central Valley Steelhead (NMFS 2014b - Recovery Plan).

The NMFS Recovery Plan states in part: "*Recovery plans are not regulatory documents and successful implementation and recovery of listed species will require the support, efforts and resources of many entities, from Federal and state agencies to individual members of the public. Another goal will be to encourage and support effective partnerships with regional stakeholders to meet the objectives and criteria of the Recovery Plan.*"

The recommended recovery actions under the NMFS Recovery Plan for the Yuba River include: 1) conducting feasibility studies, habitat evaluations, pilot testing programs and implementing long-term fish passage programs for a phased approach to salmon reintroduction planning to recolonize historical habitats above Englebright Dam; and 2) improving spawning habitat in the lower Yuba River below Englebright Dam.

3.2.4.3 Yuba Accord Monitoring and Evaluation Program

On March 18, 2008, the SWRCB approved a consensus-based, comprehensive program to protect and enhance approximately 24 mi of aquatic habitat in the lower Yuba River¹⁰, extending from Englebright Dam downstream to the river's confluence with the Feather River near Marysville. This program is known as the Lower Yuba River Accord (Yuba Accord).

The Yuba Accord consists of a Fisheries Agreement and several other elements including any necessary Conjunctive Use Agreements, and a Water Purchase Agreement. Sections of the Fisheries Agreement most pertinent to the Yuba Accord River Management Team (RMT), the River Management Fund (RMF), and the Monitoring and Evaluation Program (M&E Program) are described below. The Fisheries Agreement in its entirety can be found as Exhibit YCWA-9 on the SWRCB website¹¹.

The RMT Planning Group (herein referred to as the RMT) includes representatives of the YCWA, NMFS, USFWS, Cal Fish and Wildlife, PG&E, DWR and the non-governmental organizations (NGOs - American Rivers, The Bay Institute, SYRCL, and Trout Unlimited) that are parties to the Fisheries Agreement. The Fisheries Agreement enables the RMT to address operational, monitoring, and enhancement actions through fisheries monitoring, studies, and enhancement programs, with the use of RMF expenditures. The Fisheries Agreement provides that to ensure reasonable and prudent disbursement of funds, the RMT will adopt a structure for fund allocation based on specific prioritized goals for monitoring studies, actions, and activities. Money from the RMF may be spent for any of the following actions:

- Monitoring and evaluating the effectiveness of the implementation of the Lower Yuba River Accord, including flow schedules, Conference Year flows, and the Water Purchase Agreement;
- Evaluating the condition of fish resources in the lower Yuba River; and

¹⁰ River mile distances reported in this document extend upstream from the mouth of the lower Yuba River, and are based upon previously reported linear distances estimated through evaluation of topographic maps. Alternative representations of linear distances of the lower Yuba River are based upon the valley centerline, and the baseflow thalweg centerline (Wyrick and Pasternack 2012).

¹¹ http://www.waterboards.ca.gov/waterrights/water_issues/programs/hearings/lower_yuba_accord/exhibits.shtml

- Evaluating the viability of lower Yuba River fall-run Chinook salmon and any subpopulations of the Central Valley steelhead and spring-run Chinook salmon ESUs that may exist in the lower Yuba River.

The RMT developed the M&E Program to guide the efficient expenditure of RMF funds to evaluate the biological provisions of the Fisheries Agreement of the Yuba Accord. In addition, the parties to the Fisheries Agreement intended that the monitoring and data collection activities implemented via the M&E Program will produce a useful database for the proceedings of the FERC regarding the relicensing of YCWA's Project (FERC Project No. 2246).

The primary purpose of the M&E Program is to provide the monitoring data necessary to evaluate whether implementation of the Yuba Accord flow schedules are "*protective*" of the fish and aquatic habitat resources of the lower Yuba River. The RMT (2013a) released a Yuba Accord M&E Program Draft Interim Report (Interim Report) to compile and display the results of multiple years of RMT-led monitoring efforts, and discuss the results of these efforts within a comprehensive context. Although a substantial amount of data has been collected, monitoring is ongoing. Thus, the Interim Report was intended to facilitate adaptive management and refinement of the monitoring program, as appropriate. The Interim Report describes results of monitoring conducted to date and evaluates the efficacy of the Yuba Accord flow schedules. The RMT continues to meet on a regular basis, and lower Yuba River monitoring activities are ongoing.

3.2.4.4 Yuba Salmon Forum

The Yuba Salmon Forum (YSF) is comprised of a stakeholder group including YCWA, NMFS, the USACE, Cal Fish and Wildlife, USFWS, SWRCB, Placer County Water Agency (PCWA), PG&E, the U.S. Forest Service (Forest Service), and NGOs, including American Rivers, American Whitewater, California Sportfishing Protection Alliance, FWN, Sierra Club, SYRCL, and Trout Unlimited. According to the YSF Final Charter (April 2011) the purpose of the YSF is "*... to identify, evaluate, recommend, and seek to achieve implementation of effective near-term and long-term actions to achieve viable salmonid populations in the Yuba River watershed to contribute to recovery goals, while also considering other beneficial uses of water resources and habitat values in neighboring watersheds, as part of Central Valley salmonid recovery actions*". The YSF process is ongoing.

3.2.4.5 Yuba Salmon Partnership

Originating in 2014, the Yuba Salmon Partnership (YSP) comprises a group of stakeholders that include YCWA, NMFS, Cal Fish and Wildlife, American Rivers and the California Sportfishing Protection Alliance. The goal of the YSP is to collaboratively develop, fund and implement a cost-effective program that continues to expand the Yuba River watershed's contribution to recovery of anadromous salmonids in the Central Valley. The YSP goal would be accomplished through implementation of: 1) anadromous salmonid habitat actions in the lower Yuba River; and 2) collect and transport actions for anadromous salmonid reintroduction to historical habitat in the North Yuba River upstream of New Bullards Bar Dam.

Preliminary salmonid reintroduction actions currently under consideration include a spring-run Chinook salmon collect and transport project from the lower Yuba River to the North Yuba River upstream of New Bullards Bar Dam, possibly subsequently accompanied by a similar steelhead collect and transport program once various technical challenges have been addressed. The reintroduction program presently envisions long-term operation and maintenance of the Project, potentially including the following project elements, which will be informed by additional technical studies, pilot programs and the feasibility-level design process.

- Adult Chinook salmon collection facility on the lower Yuba River
- Potential spring-run Chinook salmon spawning sanctuary on the lower Yuba River
- Adult spring-run Chinook salmon release location(s) on the North Yuba River upstream of New Bullards Bar Reservoir
- Juvenile Chinook salmon collection facility comprising an on-river collector on the North Yuba River upstream of New Bullards Bar Reservoir
- Juvenile spring-run Chinook salmon release locations on the lower Yuba River
- Upstream and downstream transportation
- Other elements, as deemed appropriate

The YSP Program continues to build upon about 5-years (2010-2014) of technical investigations conducted by the YSF. On May 7, 2015, the YSP signatories approved a “Term Sheet” that was accompanied by a Concept Plan (YSPI 2015) and, thus, committed to a series of collaborative steps to implement the YSP Program. Since approval of the Term Sheet, the YSP Parties have been developing a Settlement Agreement that will identify roles, responsibilities, and obligations of the parties in implementation of the YSP Program. As an exhibit to the Settlement Agreement, an Action Plan is being developed to describe the process for making technical and implementation decisions for the YSP Program.

During 2016, the YSP also convened a Technical Advisory Group (TAG) to consider potential reintroduction alternatives and begin refining proposed facility locations, designs and costs specifically for the YSP Program. The TAG was charged with undertaking the following two overall tasks:

- Develop recommendations for the general location and configuration of facilities to collect and transport anadromous salmonids to and from the North Yuba River upstream of New Bullards Bar Dam.
- Provide the recommendations in writing, with basic justification for the recommendations, including operational considerations necessary for project description refinement.

Following development of the recommendations for project refinement, including preliminary cost projections, the TAG recently completed a draft report titled, *Yuba Salmon Partnership Technical Advisory Group Project Description Refinement Technical Memorandum* (Bratovich

et al. 2016) to inform the YSP Parties. The refined project description and associated costs from the TAG's 2016 report serve as the basis for the information related to the North Yuba River reintroduction presented in the Action Plan. Additionally, the Action Plan describes the types of habitat actions, and the process by which the YSP parties will evaluate potential lower Yuba River habitat actions and identify priority projects to implement or support. It is anticipated that the Action Plan and the Settlement Agreement will be completed during 2017.

3.2.4.6 Habitat Enhancement Plan

DWR and PG&E prepared the Final Habitat Expansion Plan (HEP) as part of the Oroville FERC relicensing process. The Plan was submitted to NMFS for approval on November 19, 2010. The recommended actions in the Final HEP (DWR and PG&E 2010) consisted of the following three components, collectively referred to as the Lower Yuba River Actions:

- Expansion of spawning habitat at Sinoro Bar in the Englebright Dam Reach above the Deer Creek confluence;
- Expansion of spawning habitat at Narrows Gateway in the Narrows Reach below the Deer Creek confluence; and
- The option of planning for and installing a seasonally operated segregation weir on the Yuba River below the outlet of the Narrows Pool to segregate spring-run and fall-run Chinook salmon, if deemed necessary by the resource agencies (NMFS, USFWS, and Cal Fish and Wildlife).

The Lower Yuba River Actions would achieve the goals of the Habitat Expansion Agreement (HEA) by expanding habitat in the Yuba River below Englebright Dam to support spawning, rearing, and adult holding of spring-run Chinook salmon and steelhead (DWR and PG&E 2010). On January 9, 2014, NMFS filed its Response to the Final Habitat Expansion Plan submitted by the DWR and PG&E (NMFS 2014c). In that filing, NMFS stated that the Final Habitat Expansion Plan did not meet NMFS' approval criteria. NMFS determined that alternative or modified habitat expansion actions should be developed that will fulfill the purpose, goal, and approval criteria of the Amended HEA.

On December 6, 2016, NMFS issued a BO for FERC's relicensing of the Oroville Facilities Hydroelectric Project (FERC Project No. 2100-134), which concluded that the effects of the Oroville Project are not likely to jeopardize the continued existence of winter-run Chinook salmon, spring-run Chinook salmon, steelhead, or green sturgeon, or destroy or adversely modify designated critical habitat for these listed species. However, because NMFS determined that incidental take will occur, the BO included an incidental take statement with non-discretionary terms and conditions.

The HEA was not part of FERC's proposed action for purposes of NMFS' BO, but it was considered by NMFS to be interrelated to the proposed action, and the effects of the action were analyzed as such for purposes of the BO, to the extent that NMFS had available information on those effects (NMFS 2016a). Any specific effects of the selected habitat expansion actions will be analyzed in applicable regulatory proceedings when the action is selected and specific effects

can be determined (NMFS 2016a). NMFS, DWR, and PG&E are continuing discussions about measures needed to implement the HEA. Although the exact actions and locations have not been finally determined, the long-term implementation of the HEA would increase the spatial distribution and abundance of spring-run Chinook salmon and reduce the risks to the ESU related to catastrophic events. As described in NMFS (2016a), NMFS reserves its authority under FPA Section 18 to prescribe the construction, operation, and maintenance of fishways for the Oroville Facilities and other hydroelectric projects in the Feather River Basin during the terms of the licenses as provided in the HEA. If the HEP does not meet the requirements of the agreement and there is no agreement on an alternative habitat expansion plan that would meet the requirements of the HEA, the HEA will be terminated, and NMFS may decide to exercise its authority under FPA Section 18 in connection with the Oroville Project (NMFS 2016a).

Because a separate EFH consultation was conducted for system-wide operations of the CVP/SWP OCAP, NMFS' (2016a) EFH consultation for the Oroville Facilities did not analyze the effects of Oroville Facilities water management operations on areas downstream of the mouth of the lower Feather River, and concentrated the analysis on spring-run Chinook salmon and fall-run Chinook salmon EFH in the lower Feather River. The EFH consultation also concentrated on the following designated HAPCs: 1) complex channels and floodplain habitats; 2) thermal refugia; and 3) spawning habitat substrate (NMFS 2016a).

NMFS (2016a) concluded that the Oroville Facilities proposed action would adversely affect EFH for Chinook salmon, and that the following adverse effects on EFH are reasonably certain to occur: 1) the creation of complex channels and inundation of floodplain habitats will be reduced; 2) reservoir operations are expected to affect thermal conditions in the Feather River downstream of Oroville Dam; and 3) recruitment of spawning substrate has been impacted by Oroville Dam, and will continue to be impacted as long as the dam is in place. However, due to the conservation measures included in the proposed action (e.g., gravel supplementation, water temperature management, implementing a fish weir program and channel improvement program) and NMFS' EFH conservation recommendations, NMFS (2016a) determined that the adverse effects on EFH will be reduced over time. Full implementation of NMFS' EFH conservation recommendations will protect, by avoiding or minimizing the adverse effects, approximately 242 acres of designated EFH for Pacific Coast salmon (NMFS 2016a).

3.2.4.7 Other Yuba River Basin FERC Relicensing Efforts

In addition to the Yuba River Development Project relicensing process, there are three other ongoing FERC relicensing proceedings for hydroelectric power projects within the Yuba River watershed. The first is South Feather Water and Power Agency's (SFWPA) 117.5-megawatt (MW) South Feather Power Project, FERC Project No. 2088. This water supply/power Project was constructed in the late 1950s/early 1960s. None of the project facilities or features are located in the Yuba River watershed except for the Slate Creek Diversion Dam, which is located on a tributary to the North Yuba River. Slate Creek Diversion Dam and the associated tunnel have the capacity to divert up to 848 cfs of water out of Slate Creek, and to convey it to Sly Creek Reservoir on Lost Creek, a tributary to the South Fork Feather River. SFWPA's water rights limit Slate Creek diversions to 600 cfs during January 1 through July 1 and to 300 cfs during July 2 through December 31. At times, diversions are physically limited to 500 cfs due to

high water elevations in Sly Creek Reservoir. In anticipation of the expiration of the initial license, on March 31, 2009, SFWPA filed with FERC an application for a new license on March 6, 2007. A Final EIS was completed in June 2009, and FERC submitted a request to NMFS for informal consultation on June 9, 2009. The Final EIS was filed with NMFS as FERC's BA for the proposed licensing on spring-run Chinook salmon and steelhead. Following the addressing of NMFS' concerns regarding water temperature effects associated with the Kelly Ridge powerhouse, and the completion of an operations agreement in October 2012 to resolve the water temperature issues, NMFS issued a letter of concurrence to FERC on May 11, 2016. NMFS concurred with FERC's determination that the South Feather Power Project is not likely to adversely affect the listed fish species spring-run Chinook salmon and steelhead, or their critical habitats. Since the initial license expired, SFWPA has operated the Project under annual licenses from FERC and will continue to do so until a new license is issued.

The second ongoing relicensing is Nevada Irrigation District's (NID) 79.3-MW Yuba-Bear Hydroelectric Project, FERC Project No. 2266. This is a water supply/power Project constructed in the mid-1960s, although some project facilities were initially constructed in the late 1800s. The Project includes a storage reservoir on the Middle Yuba River (i.e., Jackson Meadows Reservoir) with a gross storage capacity of 69,205 ac-ft, and five storage reservoirs on Canyon Creek (i.e., Jackson, French, Faucherie, Sawmill and Bowman) with a combined gross storage capacity of 90,790 ac-ft). The Project also includes a diversion with a maximum capacity of about 450 cfs via the Milton-Bowman Diversion Dam from the Middle Yuba River to Bowman Lake on Canyon Creek, and a diversion with a maximum capacity of about 300 cfs via the Bowman-Spaulding Canal from Bowman Lake on Canyon Creek to PG&E's Spaulding Reservoir on the South Yuba River. In anticipation of the expiration of the initial license on April 30, 2013, NID filed with FERC an application for a new license on April 15, 2011. A Final EIS was completed in December 2014. In the Final EIS, FERC concluded that the interbasin transfer of flows associated with the Upper Drum-Spaulding, Lower Drum, Deer Creek, and Yuba-Bear Projects may adversely affect spring-run Chinook salmon, steelhead, and green sturgeon downstream of Englebright Dam (FERC 2014). FERC also recognized that diversions from the Middle and South Yuba rivers, in combination with operations of the YRDP, have the potential to cumulatively affect listed species. Consequently, FERC (2014) stated that it will initiate formal ESA consultation on the Upper Drum-Spaulding, Lower Drum, Deer Creek, and Yuba-Bear Projects after FERC completes the evaluation of recommended measures, including flow releases, associated with relicensing of the YRDP. Since the initial license expired, NID has operated the Project under annual licenses from FERC and will continue to do so until a new license is issued.

The third ongoing relicensing in the watershed is PG&E's 190-MW Drum-Spaulding Project, FERC Project No. 2310, which is located on the South Yuba River, Bear River, North Fork of the North Fork American River and tributaries to the Sacramento River Basin in Nevada and Placer counties, California. Major reservoirs of the Project include Lake Spaulding (74,773 ac-ft) on the South Yuba River and Fordyce Lake (49,903 ac-ft) on Fordyce Creek upstream of Lake Spaulding. In addition, the Project includes numerous smaller reservoirs on tributaries to the South Yuba River, and diversions from the South Yuba River to Deer Creek via the South Yuba Canal (maximum capacity of ~126 cfs) and to the Bear River via the Drum Canal (~840 cfs). In anticipation of the expiration of the initial license on April 30, 2013, PG&E filed with

FERC an application for a new license on April 12, 2011. As described in the paragraph above, a Final EIS (FERC 2014) was completed in December 2014, which stated that FERC will initiate formal ESA consultation on the Upper Drum-Spaulding, Lower Drum, and Deer Creek Projects after FERC completes the evaluation of recommended measures, including flow releases, associated with relicensing of the YRDP. Since the initial license expired, PG&E has operated the Project under annual licenses from FERC and will continue to do so until a new license is issued.

PG&E and NID provided an analysis of the projects' effects on Central Valley spring-run Chinook salmon and steelhead and their designated EFH (FERC 2014). PG&E and NID examined the effects of out-of-basin water diversions on seasonal flow and on water temperature, and determined that regulated conditions during the summer are essentially the same as unimpaired conditions, and do not affect flow or temperature upstream or downstream of Englebright Reservoir – and therefore do not affect anadromous fish species or EFH. After reviewing the information provided by PG&E, NID and NMFS, FERC (2014) concluded that the Yuba-Bear Hydroelectric Project and the Drum-Spaulding Project do not affect Pacific Coast salmon EFH upstream of Englebright Reservoir but could affect EFH downstream of Englebright Dam. Therefore, FERC (2014) stated that it will initiate EFH consultation after FERC's evaluation of recommended measures, including flow releases, associated with relicensing of the YRDP.

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