UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

FEB 27 2013

In response refer to:
2013/9443

Howard Q. Zhang, Ph.D. and Director
Western Regional Research Center
USDA-ARS
800 Buchanan Street
Albany, California 94710

Dear Dr. Zhang:

This letter is in response to the United States Department of Agriculture's (USDA) January 4, 2013, request for section 7 consultation pursuant to the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), with NOAA's National Marine Fisheries Service (NMFS) on the proposed 5-year (2013-2017) Water Hyacinth Control Program (WHCP) in the Sacramento-San Joaquin Delta (Delta) and the San Joaquin River (SJR) basin. Specifically, USDA has determined that the proposed WHCP may affect, but is not likely to adversely affect, the federally listed as endangered Sacramento River winter-run Chinook salmon (*Oncorhynchus tschawytscha*), threatened Central Valley (CV) spring-run Chinook salmon (*O. tschawytscha*), threatened California CV steelhead (*O. mykiss*), the threatened Southern distinct population segment (DPS) of North American green sturgeon (*Acipenser medirostris*), or designated critical habitats for these listed species. In addition, this letter serves as essential fish habitat consultation for Pacific salmon pursuant to provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and consultation under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act of 1934, as amended.

Description of the Proposed Action

USDA serves as the Federal nexus for a cooperative project with its applicant, the California Department of Boating and Waterways (CDBW), with regard to managing invasive plants in the Delta and its tributaries and providing research and scientific expertise. USDA proposes to utilize chemical treatment and physical removal methods to control water hyacinth in the Delta and SJR waterways from 2013 through 2017[1]. The chemical treatment is the use of four

[1] USDA originally proposed on October 25, 2012, biological methods to control water hyacinth but withdrew them from the proposed action on January 4, 2013.

herbicides[2]: 2,4-D, glyphosate, imazamox, and penoxsulam. As alternatives to chemical treatment, USDA proposes to physically remove water hyacinth, including handpicking, herding, and mechanical removal. The WHCP emphasizes chemical treatment, with limited physical removal, to control water hyacinth.

Action Area

The action area for the WHCP includes the Delta, mainstem SJR, Tuolumne River, and Merced River. The general boundaries for the action area are as follows (starting from the Delta):

(1) West up to and including Sherman Island at the confluence of the Sacramento and San Joaquin Rivers;
(2) West up to the Sacramento Northern Railroad to include water bodies north of the southern confluence of the Sacramento River and Sacramento Deep Water Ship Channel;
(3) North to the northern confluence of the Sacramento River and Sacramento Deep Water Ship Channel, plus waters within Lake Natoma;
(4) South along the San Joaquin River to Mendota, just east of Fresno;
(5) East along the San Joaquin River to Friant Dam on Millerton Lake;
(6) East along the Tuolumne River to LaGrange Reservoir below Don Pedro Reservoir; and
(7) East along the Merced River to Merced Falls, below Lake McClure.

There are approximately 350 treatment sites that average between one and two miles in length. In any given year, USDA and CDBW will treat only a portion of the total treatment sites. During the past 29 years of the WHCP, the highest annual treatment area was 2,770 acres in 2004 and the lowest was 166 acres in 1985, accounting for 4.1 percent and 0.2 percent, respectively, of the total waterway area (~67,800 acres[3]) of the Delta and the SJR basin. However, the action area is expected to encompass a greater area than the actual treatment area due to water movement resulting from flow and tidal influences.

The action area contains waterways where Sacramento River winter-run Chinook salmon, CV spring-run Chinook salmon, California CV steelhead, and/or the Southern DPS of North American green sturgeon may be present. The three listed salmonids have the greatest potential to occur in the action area primarily between November and June, based on the timing of adult and juvenile migrations in and through the waterways of the Delta. Juvenile steelhead may occur in the SJR and its tributaries from October through June. Green sturgeon presence is presumed to be year-round within the Delta.

The action area includes waters that have been designated as critical habitat for CV spring-run Chinook salmon, California CV steelhead, and the Southern DPS of North American green

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[2] USDA proposed on October 25, 2012, the use of a fifth herbicide imazapyr, which was withdrawn as part of the proposed action on January 4, 2013, because it has not been approved by the California Department of Pesticide Regulation for use in controlling water hyacinth.
[3] The total water area is 61,619 acres in the Delta and 6,180 acres in the San Joaquin River basin.

sturgeon. The primary constituent elements (PCE) of the critical habitat in the action area for the listed species include areas for emigration, rearing, and/or smoltification of juveniles and immigration of adults. The PCE attributes of prey availability, primary productivity, shelter availability, and water quality (*i.e.*, dissolved oxygen) are the primary assessment endpoints addressed when evaluating the effects of the proposed action on the designated critical habitat. Information evaluated for effects to prey, primary production, or shelter includes survival, growth, reproduction, or abundance of prey (*e.g.*, macroinvertebrates), phytoplankton, and macrophytes.

General Procedure for Controlling Water Hyacinth

Prior to the start of each treatment season, USDA and CDBW will conduct environmental awareness training for all field crew members. The training will include: species identification and impact avoidance guidelines; protocol for identification and protection of Chinook salmon, steelhead, green sturgeon, and associated protected habitats. In addition, field crew members will be trained on the use and calibration of spray equipment and the WHCP Operations Management Plan.

USDA and SDBW will conduct pre- and post-season surveys to identify locations and coverage of water hyacinth, and supplement these formal surveys with mid-season evaluations of water hyacinth coverage. Starting in February, and again in October and November, field crews will conduct visual surveys of all treatment sites. For each site, crews will record water hyacinth coverage (acres and percent coverage) and growth at the site.

In the early season survey, field crews will identify problem areas such as those with the greatest impact on navigation, public safety, nursery areas, and sites close to pumps or other structures. Treatment crews will also identify crops adjacent to treatment sites in order to help select the appropriate herbicide for treatment. Crews will validate field survey information with data from the prioritization process and note any changes. This survey information will be used to help prioritize treatment locations at the start of the treatment season, and to measure efficacy of water hyacinth treatments at the end of the season.

During the treatment season, as crews are working throughout the Delta, they will continue to monitor and record water hyacinth coverage by site. This ongoing survey will assist the management team in identifying mid-season adjustments to prioritizing treatment sites and determining treatment effectiveness. The crews will follow specific requirements to account for wind, dissolved oxygen, drinking water intakes, agricultural intakes, and total acres treated. Treatment crews will follow all label requirements and implement a fish passage protocol (described below in Chemical Control) to ensure that listed anadromous fish species and their critical habitats are not impacted by the WHCP.

USDA and CDBW will prepare an annual report for the WHCP and submit the report to NMFS by February 1 of each year starting 2014. This annual report will summarize infestation levels, treatment acreage and types, amount of each herbicide used, materials and methods, and water

quality monitoring results (including herbicide concentration and dissolved oxygen). NMFS will review the report and assess whether or not the WHCP poses negative effects to listed anadromous fish species and their critical habitats from the use of the herbicides, particularly the two new herbicides—imazamox and penoxsulam.

Chemical Control

USDA proposes to use four herbicide products: Weedar 64, AquaMaster, Clearcast, and Galleon SC (Table 1). The products contain one of the four active ingredients (a.i.): 2,4-D, glyphosate, imazamox, and penoxsulam. Imazamox and penoxsulam are new to the WHCP. All herbicides will be applied with an adjuvant, either Agridex or Competitor. Only one herbicide will be utilized in a given site for any single treatment.

The proposed maximum application rate and the estimated environmental concentration (EEC) are presented in Table 1. The EEC in water column is calculated using the maximum application rate, spray efficiency, and water depth. Spray efficiency is defined as the fraction of the a.i. intercepted by the target plant canopy. The amount of droplet capture will depend on the canopy coverage and the volume, speed and direction of the spray cloud. According to USDA, the typical spray efficiency is between 80 and 90 percent when applying 2,4-D to water hyacinth mats. NMFS assumes that the 1-meter water depth is appropriate for estimating the concentration of herbicide to which salmon and steelhead may be exposed and 2-meter water depth is appropriate for green sturgeon. Salmonid juveniles generally migrate or rear in the top layer of water column ranging from 3-6 meters while green sturgeon migrate or rear at the bottom of a waterbody. Use of 1-meter for salmonids and 2-meter for green sturgeon is conservatively protective of the species.

Table 1. Maximum application rates and estimated environmental concentrations of the proposed herbicides and adjuvants

Product	Active Ingredient (a.i.)	Proposed Maximum Application Rate (pound a.i/acre)	Estimated Environmental Concentration (mg/L)	
			1-meter Water	2-meter Water
Weedar 64	2,4-D	4.58	0.103	0.051
AquaMaster	Glyphosate	4.05	0.091	0.045
Clearcast	Imazamox	0.5	0.012	0.006
Galleon SC	Penoxsulam	0.088	0.002	0.001
Agridex	Oil, esters, and emulsifier	3.67	0.082	0.041
Competitor	Ester and glycol	3.68	0.083	0.041

Crews for herbicide application will conduct treatments with hand-held sprayers applied from aluminum airboats or aluminum outboard motor boats. The work boats will be equipped with direct metering of herbicides, adjuvants, and water pump systems. The crews will spray the

chemical mixture directly onto the plants utilizing pump-driven hand-held spray nozzles. The pump will mix calibrated amounts of herbicide, adjuvant, and water.

USDA and CDBW will only treat those sites that have water hyacinth infestations, treating only the water hyacinth plants within those sites. The WHCP may also be limited by time and resource constraints. Within a given treatment location, field crews will treat according to current herbicide label requirements or the fish passage protocol to limit the potential for the decay of plants to cause low dissolved oxygen levels.

USDA and CDBW will follow the fish passage protocol to ensure that during herbicide applications a zone of the treatment area is left untreated for passage of listed fish species at all times, taking into account the location and size of treatment areas.

(1) In slow-moving and back-end sloughs infested with water hyacinth, USDA and CDBW will treat up to 30 percent of the water hyacinth mat at one time. Mats will be treated in up to 3-acre strips, leaving at least 100-foot buffer strips between treated areas. The untreated buffer strips and remaining 70 percent of the water hyacinth mat will be treated at least three more times following the initial treatment (in 30 percent increments). These follow-up treatments will take place at three-week intervals.

(2) In Delta tidal waters, USDA and CDBW will treat up to 50 percent of the water hyacinth mat at one time. Mats will be treated in up to 3-acre strips, leaving at least 100-foot buffer strips between treated areas. The untreated buffer strips and remaining 50 percent of the mat will be treated three weeks following the initial treatment for 2,4-D treatments, and one week following initial treatment for other herbicides.

The size of treatment sites ranges from 6.5 acres to 1,707 acres, with an average size of 219 acres. Thus, there may be several different water hyacinth infestations spread out within a site that require treatment. In these cases, USDA and CDBW will treat all water hyacinth mats in the site as time and resources allow.

Repeat treatments, when needed, may utilize a different herbicide, depending on conditions at the site, for example:

(1) A location will not be treated again if, after the herbicide has had time to take effect, the initial treatment was effective in killing the majority of water hyacinth plants at that site.

(2) A given water hyacinth mat will be treated a second time if buffer strips for fish passage were left untreated. In this case, DBW will return to treat the remainder of the site after the specified time[4] between treatments, per herbicide label requirements or the fish passage protocol, whichever is more protective of listed fish species. In this case, new plants within a given water hyacinth mat will be treated, not the previously treated plants.

[4] The label required time between treatments is 21 days for 2,4-D and 1 day for glyphosate.

(3) Previously treated water hyacinth plants will be treated a second time at a given site if the first treatment was not effective in killing the plants. In this case, the second treatment will not be conducted until the specified time period, per label requirements or the fish passage protocol, whichever is more protective of listed fish species.

(4) The actual number of locations that will be treated more than once depends on factors such as herbicide efficacy, growth of the water hyacinth plants, and tidal movement that cannot be easily predicted. USDA and CDBW will seek to minimize the number of times that a given water hyacinth mat will be treated, and will follow herbicide labels regarding total number of applications allowed.

Daily treatments occur Monday through Thursday when weather, wind-speed, and other environmental conditions are favorable for treatment to be maximized. On any given treatment day, treatment acres per day are limited by: (1) the number of crews available; (2) travel time to reach the site; (3) time required to set-up, conduct monitoring, and treat a site; (4) the amount of water hyacinth growing at a particular site; (5) the herbicide label restrictions; (6) fish passage protocols; and (7) weather and tide conditions. The crew can treat, on average, between 5 and 16 acres per day, based on historical data from 2007 through 2011.

Physical Removal

USDA proposes to use four physical removal methods to supplement the chemical control of water hyacinth under some specific circumstances. Handpicking will be used to manually remove water hyacinth in nursery areas (e.g., slow moving waterways, temporarily isolated oxbow lakes, tule stands along channel margins, and stagnant, dead-end sloughs). The area for handpicking is estimated to be less than 100 acres per year. Herding will be used in order to push water hyacinth mats (1) into main channels where it flows naturally out of the Delta and dies in the more saline water of San Francisco Bay; or (2) toward mechanical removal sites. Due to timing and logistical limitations of herding activities, this method may not be used as frequently as handpicking. USDA will primarily use boats to push water hyacinth mats towards the U.S. Bureau of Reclamation excavator at the Tracy Fish Facility. The area for herding is estimated to range from 500 to 1,000 acres per year.

USDA proposes two mechanical approaches to remove dense mats of water hyacinth in locations where chemical treatment is precluded and/or mechanical removal is likely to be more successful. The area for mechanical removal is estimated to be less than 200 acres per year. The first approach will be to park a small excavator and dump truck on a concrete boat ramp and mechanically lift water hyacinth from the waterway surrounding the ramp. Field crews will support the excavation by herding water hyacinth that is outside of the excavator's reach closer to the equipment. This mechanical removal approach will be used only in limited locations when water hyacinth growth is concentrated near a boat ramp. There may be relatively few locations within the Delta that are appropriate for excavation.

The second mechanical removal approach will utilize mechanical equipment designed specifically to safely remove aquatic weeds from waterways. This mechanical equipment utilizes cutters and conveyors to physically remove the plant from the water, and onto the bed of the equipment. The equipment will collect and unload vegetation using a conveyor system on a boom, adjustable to the appropriate cutting height (two to three feet below the surface for water hyacinth). Cutter bars will collect material and bring it aboard the vessel using the conveyor; when the vessel has reached capacity (between 2,000 and 15,000 pounds of plant material), the cut plant material will be offloaded to a dump truck parked at a nearby boat ramp to offload water hyacinth. Water hyacinth will be disposed of at an authorized location, typically utilizing nearby farm fields. This mechanical removal will primarily be utilized to remove dense mats of water hyacinth in locations where chemical treatment must be avoided, such as sites with many valley elderberry shrubs along the shoreline.

Timing of Control Activities

USDA proposes a calendar-based schedule for WHCP activities from 2013 to 2017 (Table 2). USDA proposes to apply 2,4-D according to the following application windows established by NMFS[5] to minimize the potential negative effects to steelhead:

(1) June 15 to September 15 within the Delta, and
(2) July 15 to August 15 in the SJR.

USDA proposes to apply glyphosate, imazamox, and penoxsulam between March and November. USDA proposes to use physical (herding and mechanical) removal from July to April. Neither chemical treatment nor physical removal will be performed at or near sites where listed anadromous fish species are likely to be present.

The actual start date will depend on a combination of calendar-dates, field surveys of water hyacinth to evaluate plant growth, and surveys to determine presence of listed fish species. The objective of this approach is to improve WHCP chemical treatment efficacy without negatively impacting listed fish species. Seasonal temperature fluctuations in the Delta impact both water hyacinth growth and migratory fish activity. These weather fluctuations can become relatively extreme, and may make calendar-based start dates less relevant.

On any given treatment day, actual start of treatments depends on the distance from CDBW's boat dock to the treatment site. Field crews begin their work day at 6:30 a.m., thus treatment activities generally occur in mid-morning, and again in early-afternoon.

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[5] NMFS. 2011. Biological Opinion on US EPA's Registration of Pesticides: 2,4-D, Triclopyr BEE, Diuron, Linuron, Captan, and Chlorothalonil. Appendix 9.

Table 2. Proposed calendar-based control activities and application window (shaded) for the WHCP from 2013 to 2017. The darker shading indicates the 2,4-D application window in the SJR.

Control Method	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2,4-D												
Glyphosate												
Penoxsulam												
Imazamox												
Handpicking												
Herding												
Mechanical Removal												

Endangered Species Act Section 7 Consultation

NMFS has received all of the information necessary to initiate consultation on federally listed anadromous fish species and their designated critical habitats within the action area. Based on our review of the material provided, and the best scientific and commercial data currently available, NMFS concurs with USDA and CDBW's determination that the proposed use of herbicide products, adjuvants, or physical removal methods is not likely to adversely affect federally listed Sacramento River winter-run Chinook salmon, CV spring-run Chinook salmon, California CV steelhead, or the Southern DPS of North American green sturgeon, or any of their respective designated critical habitats. NMFS reached this concurrence based on the following project elements:

Chemical Control

Application of the proposed herbicides and adjuvants may pose negative direct or indirect effects to listed fish species and/or their critical habitats, as summarized in Table 3. Note that the potential indirect effects to the listed species overlap with the potential effects to critical habitats.

Table 3.Summary of potential direct or indirect effects of herbicides and adjuvants to listed fish spices and/or critical habitats

Target	Potential Direct Effects	Potential Indirect Effects
Listed Species	(1) Kill fish (2) Reduce growth (3) Reduce reproduction	(1) Reduce native aquatic plants (shelter for listed species) (2) Reduce invertebrates (food for listed species) (3) Reduce phytoplankton (food for invertebrates) (4) Degrade water quality (*i.e.*, dissolved oxygen)
Critical Habitat	(1) Delta and SJR: Habitat for migration, rearing, and/or smoltification (2) Habitat Loss: Unlikely	

	(3) Habitat Modification (a) Reduce native aquatic plants (b) Reduce invertebrates (c) Reduce phytoplankton (d) Degrade water quality (*i.e.*, dissolved oxygen)

USDA determined that the proposed use of four herbicides and two adjuvants is not likely to:

(1) kill individuals of the listed fish species;
(2) reduce growth and reproduction of the listed fish species;
(3) reduce prey availability for the listed fish species;
(4) reduce aquatic plants serving as a shelter for the listed fish species; or
(5) reduce primary productivity that would affect the food source for primary consumers (*e.g.*, macroinvertebrates), which are food sources for listed fish species.

NMFS conducted effects analyses and risk assessments using the data submitted by USDA and from other sources (*e.g.*, ECOTOX database) and the well-established process developed by the U.S. Environmental Protection Agency (US EPA) and NMFS[6]. Briefly, the analytical framework includes organizing, evaluating, and synthesizing available data and information on listed resources and the potential stressors of the proposed action. Separate evaluations are conducted for the effect and risk to listed species and to designated critical habitats from the stressors of the proposed action. Studies using listed species are preferable, however, when there is not a complete suite of information relating to effects on listed fish species, data from surrogate species are used. Specifically, rainbow trout are used as surrogates for salmonids and white sturgeon for green sturgeon. Even though there may be interspecies extrapolation, data from surrogates are considered the best available and were used in previous national pesticide consultations.

Exposure of the listed species to 2,4-D, glyphosate, imazamox, penoxsulam, or adjuvants, if applied as proposed, poses a low risk to fish mortality and reduction in fish growth and reproduction. Although the chronic toxicity data for rainbow trout indicated that the application of 2,4-D or glyphosate as proposed may have potential negative chronic effects of 2,4-D or glyphosate on Chinook or steelhead juveniles, the potential chronic effect is deemed insignificant[7] or discountable[8] considering the dissipation half-life and observed concentration of the herbicides, the size of a treatment area, and juvenile migration speed in the Delta.

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[6] NMFS, 2013. Effect Analysis and Risk Assessment for Exposure of the Water Hyacinth Control Program Stressors to Listed Anadromous Fish Species and Their Designated Critical Habitat in the Sacramento-San Joaquin Delta

[7] Insignificant effects – relate to the magnitude of the impact: the effects cannot be meaningfully detected, measured, or evaluated, and should never reach the scale where a "take" occurs. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects.

[8] Discountable effects – relate to the likelihood of the impact: the effects are extremely unlikely to occur. Based on best judgment, a person would not expect discountable effects to occur.

The proposed use of the herbicides and adjuvants poses a low risk to the critical habitats designated for spring-run Chinook salmon, CCV steelhead, and green sturgeon. Although the use of imazamox or penoxsulam may negatively affect aquatic vascular plants, the potential effect is deemed insignificant or discountable considering the dissipation half-life of the herbicides, recoverability of affected aquatic plants, and the size of a treatment area.

Dissolved Oxygen

Decomposition of water hyacinth and other aquatic plants following application of herbicide products may reduce dissolved oxygen (DO) concentrations, and low DO can result in fish mortality. However, according to USDA and CDBW, application of Weedar 64 and AquaMaster is not likely to reduce DO to a level unsafe for listed fish species. Of 719 treatments occurring between 2007 and 2011, there were 13 cases with no change in DO, 404 cases with an increase in DO (average increase of 0.8 mg/L), and 302 cases with an average decrease of 0.6 mg/L in DO. The average pre-treatment DO was 7.9 mg/L, and the average post-treatment DO was 8.1 mg/L. Since imazamox and penoxsulam are slow-acting systemic herbicides, they are not expected to result in reduced DO levels.

Following the herbicide label requirements or the fish passage protocol regarding the number of treatments and time between treatments for each treatment site and herbicide application will minimize the potential for low DO as a result of herbicide applications. To further minimize the effect of potential decreases in DO on listed species, USDA and CDBW will monitor DO pre- and post-treatment for all WHCP treatments. No treatments will be performed if DO levels are between 3 mg/L and the Basin Plan limits established by the Central Valley Regional Water Quality Control Board (ranging from 5 mg/L to 8 mg/L).

Physical Removal

The negative effects of handpicking and herding on listed fish species are extremely unlikely to occur due to the nature and limited scope of the activities. Mechanical removal may negatively affect the listed species if and when they co-occur with the removal activities. However, the potential effects would be discountable as they are highly unlikely to occur, based on the following information and mitigation measures:

(1) Mechanical removal methods will be used in limited locations when water hyacinth growth is concentrated near a boat ramp or where chemical treatment must be avoided, such as sites with many valley elderberry shrubs along the shoreline. The area where mechanical removal may be used is estimated to be less than 200 acres or 0.3 percent of the total waterway area in the Delta;

(2) Mechanical removal methods are limited to dense water hyacinth mats where listed salmonid species are not likely present; and

(3) If a field survey[9] as described in the USDA's proposed action indicates that listed fish species are present or likely to be present, physical removal will not be conducted until such time as listed fish species are not likely to be present.

This concludes informal consultation for the USDA's proposed WHCP for 2013-2017. Reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Essential Fish Habitat (EFH) Consultation

With regards to EFH consultation, the action area has been identified as EFH for Pacific salmon in Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the MSA. Federal action agencies are mandated by the MSA (section 305(b)(2)) to consult with NMFS on all actions that may adversely affect EFH, and NMFS provides EFH conservation recommendations to those agencies pursuant to MSA section 305(b)(4)(A). Based on our review of the material provided, and the best scientific and commercial data currently available, NMFS has determined that the proposed action would adversely affect EFH for Pacific salmon. However, the proposed action includes adequate measures (described in the ESA section 7 Consultation section above) to avoid, minimize, or otherwise offset the adverse effects to EFH. Therefore, NMFS is not providing any EFH Conservation Recommendations at this time and the Federal action agency is not required to provide a written response under section 305(b)(4)(B) of the MSA and Federal regulations (50 CFR 600.920(k)). However, if there are revisions to the project description that could result in adverse effects to EFH, USDA will need to re-initiate EFH consultation.

Fish and Wildlife Coordination Act (FWCA) Consultation

[9] A field survey is the combination of visual observation by a trained biologist and fish migration probability based on juvenile monitoring data in the lower Sacramento River, San Joaquin River, and at fish collection facilities in the South Delta. Use of monitoring data would provide a good indication if salmonids are migrating through a particular location in the Delta. Chemical treatments during the sensitive March to June time period will be focused on areas where salmonids are not likely to be migrating.

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration and is coordinated with other aspects of water resources development (16 U.S.C. Sec. 661). The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage (16 U.S.C. Sec. 662(a)). Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA provides the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA and MSA. Because the proposed project is designed to avoid environmental impacts to aquatic habitat within the action area, NMFS has no FWCA comments to provide.

Please contact Dr. Li-Ming (Lee) He at (916) 930-5615, or via email at li-ming.he@noaa.gov, if you have any questions regarding this consultation.

Sincerely,

for Maria Rea
Rodney R. McInnis
Regional Administrator

cc: Copy to file: ARN 151422SWR2012SA001889

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