

RECLAMATION

Managing Water in the West

Categorical Exclusion Checklist

Rock Slough Fish Screen Operations and Prototype Rake Testing Modifications

CEC-15-004

Prepared by:


Rain L. Emerson
Supervisory Natural Resources Specialist
South-Central California Area Office

Date: 02/20/2015

Concurred by:

See Attachment A
Archaeologist
Mid-Pacific Regional Office


Date: See Attachment A

Concurred by:

See Attachment B
Native American Affairs Specialist
Mid-Pacific Regional Office

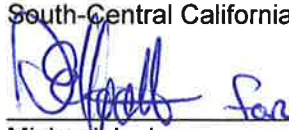
Date: See Attachment B

Concurred by:


Ned Gruenhagen, Ph.D.
Wildlife Biologist
South-Central California Area Office

Date: 04/26/2015

Approved by:


Michael Jackson
Area Manager
South-Central California Area Office

Date: 02/26/2015



Need for the Proposal

In April 2014, Reclamation completed Categorical Exclusion Checklist (CEC)-13-049 for proposed testing operations of a prototype rake (rake No. 2) at the RSFS. Based on several factors, including the presence of migratory birds at the facility, CCWD was not able to test the prototype rake fully. CCWD has recently proposed modifications to the previously approved testing plan that are outside the project description covered in CEC-13-049 and additional environmental review is needed. CCWD has an immediate need to commence testing of the prototype rake and to operate the remaining rakes as the Canal is expected to resume operations as early as February 2015.

The RSFS facility is subjected to extraordinary amounts of aquatic vegetation and consequently has, at times, been unable to maintain a vegetation free screen essential to facility function and protection of fish from entrainment. There have been ongoing operational challenges with the RSFS, primarily associated with the automated debris handling system. It is extremely important that the rakes be fully functional so that the screen can be maintained to meet design specifications to minimize impingement and entrainment of smaller sensitive aquatic species.

CCWD needs to test prototype rake No. 2 as much as possible to confirm that it will operate on a reliable basis. During testing, additional design improvements may be necessary. Once it is confirmed that rake No. 2 can operate reliably, the prototype design will be used to improve the remaining three rakes (Nos. 1, 3 and 4) at the facility. Improvements to the other three rakes will be addressed in a separate environmental review once a project description is determined.

Proposed Action

Reclamation, proposes to approve CCWD's continued testing of prototype rake No. 2 and also the original rake designs.

The amount of overall raking will be the least amount necessary for adequate testing. And, to the degree possible, the most intensive testing (i.e., highest number of runs per day) will be conducted when special status fish are not present in the area.

Two test runs, as described below, would be utilized to evaluate the suitability of the system for meeting operating objectives. Testing would involve the original rake designs, the modified prototype rake previously described, or with rakes additionally modified as a result of new discoveries made during the testing.

Initially, two test runs (continuous and comparative test runs) will be alternated on a weekly basis. Testing is expected to begin in early February 2015 and continue seven days per week over a 3 to 9 month period. This duration may be longer if testing cannot be done on a continuous basis as described below and/or reliability of prototype rake No. 2 cannot be confirmed within the testing period.

While prototype rake No. 2 is being tested, CCWD will continue to operate rakes Nos. 1, 3 and 4 at least once but possibly up to 72 times per day, until all of the rakes have been modified to be consistent with the final prototype rake No. 2 design. Regardless, all rakes must function so that design requirements for maintaining specified flows through the screens are maintained.

The Continuous Test Run

CCWD will run prototype rake No. 2 on a continuous basis (24 hours per day for 7 days) in order to test the mechanical and hydraulic system. Rakes No. 1, 3, and 4 will be disabled during the continuous run testing intervals.

The Comparative Test Run

CCWD will test the comparative performance of prototype rake No. 2 and the original rake head design on rake No. 3. The test will run at 120 minute intervals (20 minute rake head cycle within each interval) 24 hours a day for 7 days. Rakes No. 1 and 4 will be disabled during the comparative testing intervals.

A CCWD maintenance staff person or contractor will be on site once each day over the 7 day testing phases in order to observe one prototype run cycle to confirm no obvious mechanical or hydraulic system failure has occurred. Prototype SCADA alarms will notify CCWD of a potential problem and the Control Operator will shut down the prototype in an emergency; no automatic shutdown of the prototype will occur.

Reliability Operation Testing of RSFS Post Testing Period

Once rake testing is complete and results are satisfactory, CCWD, on behalf of Reclamation, will continue to operate the RSFS rakes through April 2018, as previously covered in the 2009 National Marine Fisheries Service Biological Opinion on Long Term Operation of the Central Valley Project and State Water Project and the 1993 U.S. Fish and Wildlife Service Biological Opinion for the Central Valley Project Improvement Act and the Los Vaqueros Biological Opinion.

Environmental Commitments

CCWD will implement the following environmental commitments, including those within Attachment C, to avoid any potential environmental consequences associated with the Proposed Action:

- An upstream log boom will be relocated approximately 600 feet upstream (east) of its current location in front of the RSFS. The log boom will remain in this location until the operation and maintenance is transferred from Reclamation to CCWD.
- A block net with 3/8 inch openings to allow delta smelt passage will be installed just downstream (west) of the log boom from November 1 through April 30 each year.
- A preconstruction survey for migratory birds shall be conducted prior to any rake modifications.

Environmental consequences for biological resources assume the measures specified will be fully implemented.

Exclusion Category

516 DM 14.5 paragraph A (3): *Research activities, such as nondestructive data collection and analysis, monitoring, modeling, laboratory testing, calibration, and testing of instruments or procedures and nonmanipulative field studies.*

Evaluation of Criteria for Categorical Exclusion

- | | | | |
|---|---|---------------------------------------|---------------------------------|
| 1. This action would have a significant effect on the quality of the human environment (40 CFR 1502.3). | No
<input checked="" type="checkbox"/> | Uncertain
<input type="checkbox"/> | Yes
<input type="checkbox"/> |
| 2. This action would have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA Section 102(2)(E) and 43 CFR 46.215(c)). | No
<input checked="" type="checkbox"/> | Uncertain
<input type="checkbox"/> | Yes
<input type="checkbox"/> |
| 3. This action would have significant impacts on public health or safety (43 CFR 46.215(a)). | No
<input checked="" type="checkbox"/> | Uncertain
<input type="checkbox"/> | Yes
<input type="checkbox"/> |
| 4. This action would have significant impacts on such natural resources and unique geographical characteristics as historic or cultural resources; parks, recreation, and refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (EO 11990); flood plains (EO 11988); national monuments; migratory birds; and other ecologically significant or critical areas (43 CFR 46.215 (b)). | No
<input checked="" type="checkbox"/> | Uncertain
<input type="checkbox"/> | Yes
<input type="checkbox"/> |
| 5. This action would have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks (43 CFR 46.215(d)). | No
<input checked="" type="checkbox"/> | Uncertain
<input type="checkbox"/> | Yes
<input type="checkbox"/> |
| 6. This action would establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects (43 CFR 46.215 (e)). | No
<input checked="" type="checkbox"/> | Uncertain
<input type="checkbox"/> | Yes
<input type="checkbox"/> |
| 7. This action would have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects (43 CFR 46.215 (f)). | No
<input checked="" type="checkbox"/> | Uncertain
<input type="checkbox"/> | Yes
<input type="checkbox"/> |
| 8. This action would have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by Reclamation (LND 02-01) (43 CFR 46.215 (g)). | No
<input checked="" type="checkbox"/> | Uncertain
<input type="checkbox"/> | Yes
<input type="checkbox"/> |

- | | No | Uncertain | Yes |
|--|-------------------------------------|--------------------------|--------------------------|
| 9. This action would have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated critical habitat for these species (43 CFR 46.215 (h)). | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. This action would violate a Federal, tribal, State, or local law or requirement imposed for protection of the environment (43 CFR 46.215 (i)). | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. This action would affect ITAs (512 DM 2, Policy Memorandum dated December 15, 1993). | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. This action would have a disproportionately high and adverse effect on low income or minority populations (EO 12898) (43 CFR 46.215 (j)). | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. This action would limit access to, and ceremonial use of, Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (EO 13007, 43 CFR 46.215 (k), and 512 DM 3)). | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. This action would contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act, EO 13112, and 43 CFR 46.215 (l)). | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Attachment A: Cultural Resources Determination


CULTURAL RESOURCES COMPLIANCE
Mid-Pacific Region
Division of Environmental Affairs
Cultural Resources Branch (MP-153)

MP-153 Tracking Number: 15-SCAO-068

Project Name: Rock Slough Fish Screen Operations and Prototype Rake Testing Modifications

NEPA Document: CEC-15-004

NEPA Contact: Rain Emerson, Supervisory Natural Resources Specialist

MP-153 Cultural Resources Reviewer: Joanne Goodsell, Archaeologist 

Date: January 28, 2015

Reclamation proposes to test prototype rake No. 2 at the Rock Slough Fish Screen Facility (RSFS), located at the junction of the Contra Costa Canal and Rock Slough, near the town of Oakley, California. The testing would be completed in alternating continuous and comparative test runs over the course of several months and be used to assess the reliability of the current rake design and to determine if any improvements to it and the other RSFS rakes (Nos. 1, 3, and 4) are needed.

Reclamation has determined that the proposed action is the type of undertaking that does not have the potential to cause effects to historic properties, should such historic properties be present, pursuant to the National Historic Preservation Act (NHPA) Section 106 regulations codified at 36 CFR Part 800.3(a)(1). As such, Reclamation has no further obligations under Section 106. In concurrence with item 8 on CEC-15-004, the action would have no significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places.

This document conveys the completion of the cultural resources review and NHPA Section 106 process for this undertaking. Please retain a copy in the administrative record for this action. Should changes be made to the proposed action, additional review under Section 106, possibly including consultation with the State Historic Preservation Officer, may be necessary.

Attachment B: Indian Trust Assets Determination



Emerson, Rain <remerson@usbr.gov>

Re: RESUBMITTAL - ITA Determination Request (15-004)

STEVENSON, RICHARD <rstevenson@usbr.gov>

Wed, Feb 18, 2015 at 12:54 PM

To: "Emerson, Rain" <remerson@usbr.gov>

Rain,

I have reviewed the attached project description and the prior ITA determination made for the same area last April. The proposed project does not have the potential to affect Indian Trust Assets.

Dick Stevenson
Deputy Regional Resources Manager

On Tue, Feb 17, 2015 at 4:21 PM, Emerson, Rain <remerson@usbr.gov> wrote:

Good afternoon Mr. Stevenson,

Attached is a determination request for the proposed Rock Slough Fish Screen Prototype Modifications (Word doc). I have also attached a previous determination that was made for the same area (pdf email).

Rain L. Emerson, M.S.
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Richard M. Stevenson
Deputy Regional Resources Manager
2800 Cottage Way, MP-400
Sacramento, CA 95825-1898
(916) 978-5264
(916) 396-3380 iPhone
rstevenson@usbr.gov

Attachment C: National Marine Fisheries Service Concurrence Memo



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

FEB 20 2015

Refer to NMFS No: WCR-2015--2095

David E Hyatt
Chief, Resources Management Division
U.S. Bureau of Reclamation, Mid-Pacific Region
South-Central California Area Office
1243 N Street
Fresno, California 93721-1813

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter, and Magnuson-Stevens
Fishery Conservation and Management Act Essential Fish Habitat Response for Testing
and Modifications of the Rock Slough Fish Screen

Dear Mr. Hyatt:

On February 3, 2015, NOAA's National Marine Fisheries Service (NMFS) received your February 2, 2015, request for a written concurrence (SCC-423 Env-7.00) that Contra Costa Water District's (CCWD) continuation of testing and modification of the Rock Slough Fish Screen (RSFS, proposed action) is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation. EFH designated within the Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagic Species Management Plans is present in the action area. In this case, NMFS concluded that the proposed action would not adversely affect EFH. Thus, consultation under the MSA is not required for this proposed action.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through NMFS' Public Consultation Tracking System (<https://pcts.nmfs.noaa.gov/pcts-web/homepage.pcts>). A complete record of this consultation is on file at the NMFS California Central Valley Area Office.



Proposed Action

The U.S. Bureau of Reclamation (Reclamation) owns the Contra Costa Canal and built the RSFS in 2009 with funding through the American Recovery and Reinvestment Act to comply with requirements of the Central Valley Project Improvement Act and the 1993 Los Vaqueros Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS). NMFS issued a concurrence letter regarding construction of the RSFS on August 20, 2009 (PCTS 2009/03303). The USFWS issued its biological opinion regarding construction and operation of the RSFS on September 3, 2009 (81420-2009-I-1015-1). Both NMFS and the USFWS found that construction and operation of the RSFS would be beneficial to ESA-listed fish species. CCWD is responsible for the daily operation and maintenance of the RSFS. The testing and modifications of the RSFS are interrelated to the construction and operation of the RSFH, which NMFS has already concurred on (see August 20, 2009 letter). The operation of the RSFS is described in the long-term operations of the Central Valley Project and State Water Project (NMFS 2009).

The RSFS protects fish from becoming entrained into the Contra Costa Canal when water is diverted from the Delta to the Los Vaqueros Reservoir and portions of the San Francisco Bay Area. Due to the location of the RSFS at the terminal end of Rock Slough and in the southern part of the Delta, it is subjected to large amounts of aquatic vegetation that render the screen inoperable. The current rake cleaning system designed for the RSFS is unable to handle the large amounts of aquatic vegetation that ends up on the fish screen. Therefore, the fish screen has been only partially operational since 2009.

Reclamation's purposed action is to authorize the implementation of continued testing and modifications of a prototype rake design and eventually turn over the long-term operations at RSFS to CCWD. Testing and monitoring at RSFS was authorized for 9 months in 2014 (NMFS 2014/288), however, due to construction shutdowns and permit delays, the testing was not completed. Reclamation is proposing to extend the RSFS testing period from 2015 to 2018. The details of the test runs (*i.e.*, both continuous and comparative runs) are described in the biological evaluation provided with your February 2, 2015, letter. Testing is expected to begin in February 2015 and continue seven days per week over a 3- to 9-month period each year. A CCWD maintenance worker or contractor will be on site each day that the prototype rake is testing in order to observe any failure of the mechanical or hydraulic system. Once testing is completed, CCWD will resume normal operations.

In addition, CCWD will relocate the log boom approximately 600 feet upstream (east) of its current location in front of the RSFS. A block net (3/8 inch openings) will be installed just downstream (west) of the log boom from November 1 through April 30 each year, to prevent adult salmon and steelhead from becoming entrained in the rakes. Past observations at RSFS indicate that adult salmon and steelhead are not likely to present from May 1 through September 30.

Action Area

The RSFS is located at the junction of the unlined Contra Costa Canal and Rock Slough, which is part of the San Joaquin-Sacramento Delta (Delta), approximately four miles southeast of the City of Oakley in Contra Costa County, California (Latitude 37.97611°, Longitude -121.64125 °). The action area includes the adjacent waters in Rock Slough, 600 feet east (upstream) of the RSFS, and westward to the terminus of Rock Slough. No upland or wetland habitats suitable for listed species would be affected by the proposed action. The waterside areas, including those sections of the levee immediately adjacent to the RSFS, are sparsely vegetated, with dense riprap revetment, supporting very little riparian or aquatic vegetation. Rock Slough is located off of the main migratory routes through the Delta for listed fish species. However, due to tidal action, salmon and steelhead occasionally stray into Rock Slough.

The action area encompasses waterways where the following listed species are present: endangered Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), threatened Central Valley (CV) spring-run Chinook salmon (*O. tshawytscha*), threatened California CV steelhead (*O. mykiss*), and the threatened Southern distinct population segment (sDPS) of North American green sturgeon (*Acipenser medirostris*). Critical habitat is not present in Rock Slough for any of the above species.

Reclamation's Effects Determinations

Reclamation determined that the proposed action is wholly beneficial and, therefore, not likely to adversely affect endangered Sacramento River winter-run Chinook salmon, threatened CV spring-run Chinook salmon, threatened California CV steelhead, and the threatened sDPS of North American green sturgeon due to expected improvements to the efficiency of the RSFS. These improvements would increase the efficiency of the fish screen and reduce areas of high velocity that can entrain and impinge juvenile salmonids and sturgeon. Critical habitat for the above listed species does not extend to the waters of Rock Slough adjacent to the RSFS, therefore, the proposed action would not affect critical habitat for these species and concurrence regarding critical habitat is not being requested.

In addition, Reclamation had determined that the proposed action is not likely to adversely affect EFH for Pacific salmon (*i.e.*, fall-run and late-fall run Chinook salmon in addition to Sacramento River winter-run and CV spring-run Chinook salmon) and groundfish species such as Starry flounder (*Platichthys stellatus*), and requested concurrence from NMFS pursuant to Section 305(b)(2) of the MSA. The reasoning, similar to that for listed species, is that the improvements made to the RSFS will also improve the habitat for fall-run and late-fall run Chinook salmon by minimizing entrainment and impingement on the fish screen. As of January 20, 2015, habitat areas of particular concern (HAPCs) have been designated in the Central Valley within the Pacific Coast Salmon Fishery Management Plan (PFMC 2014). The action area lies within the estuarine HAPC for Pacific salmon. EFH designated within the Pacific Coast Groundfish and Coastal Pelagic Species Fishery Management Plans is present in the action area.

Consultation History

- March 18, 1993, NMFS issued a non-jeopardy opinion for effects of CCWD's Los Vaqueros Reservoir (including the Rock Slough Intake) on Sacramento River winter-run Chinook salmon.
- June 4, 2009, NMFS issued a biological opinion on the long-term operations of the Central Valley Project (including CCWD's diversions) and State Water Project which included incidental take for the Rock Slough Intake and future fish screen (AR 151422SWR2006SA00268).
- August 20, 2009, NMFS issued a letter of concurrence for construction of the RSFS (NMFS 2009/03303).
- February 25, 2014, NMFS issued a letter of concurrence for testing and modifications of the RSFS (NMFS 2014/288).
- January 2015, conference call and technical assistance with Reclamation, CCWD, and USFWS.
- February 3, 2015, NMFS receives request for extending testing of the RSFS.

ENDANGERED SPECIES ACT

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is NLAA listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

The effects of the proposed action are likely to include minor operational modifications that would allow testing of the prototype rake under a range of conditions are not expected to affect ESA listed species. The new rake head is expected to improve removal of debris and vegetation, thereby reducing "hot spots" (areas of high velocity) and maintaining uniform water flow across the fish screens. This will improve fish protection (*i.e.*, screen efficiency) by minimizing the chance a listed fish will become entrained or impinged on the RSFS.

A small amount of habitat in Rock Slough (~600 feet) would be made temporarily unavailable due to the installation of a block net from November 1 to April 30. The block net and operation of the rakes would not change the habitat quality. Since the habitat in front of RSFS is of poor quality, and not currently being utilized for rearing by listed fish species (*i.e.*, migratory only), this temporary effect would be insignificant. As mentioned above, Rock Slough is located off of the main migratory routes through the Delta for listed fish species, however, due to tidal action, salmon and steelhead occasionally stray into Rock Slough.

The effects of the proposed action are wholly beneficial to listed fish species in that they will reduce entrainment or minimizing the risk of contaminants such as hydraulic fluid entering the water. NMFS assumes that by improving the efficiency of the RSFS, in the long-term, listed fish species will be protected from being diverted into the Contra Costa Canal. In addition, since the improvements are confined to the area of the RSFS itself, it is unlikely that any water quality impacts would be carried out to the larger Delta where there is designated critical habitat for the listed species.

Conclusion

Based on this analysis, NMFS concurs with Reclamation that the proposed action is not likely to adversely affect the subject listed species and designated critical habitats. In addition, NMFS has reviewed the incidental take coverage for the RSFS contained within the NMFS (2009) biological opinion. NMFS considers that incidental take for CCWD's Rock Slough Intake will continue as specified in NMFS (2009) until such time as the RSFS testing and modifications are complete and Reclamation turns over operations and maintenance to the CCWD.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by Reclamation or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (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 identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Please direct questions regarding this letter to Bruce Oppenheim, Fishery Biologist, California Central Valley Area Office at 916-930-3603 or bruce.oppenheim@noaa.gov.

Sincerely,



William W. Stelle, Jr.
Regional Administrator

cc: File copy -ARN #151422SWR2014SA00018

Mark Seedall, Contra Costa Water District, P.O. Box H20, Concord, CA 94524-2099
Carl Dealy, U.S. Bureau of Reclamation, 16650 Kelso Road, Byron, CA 94514-1909
Armin Halston, U.S. Fish and Wildlife Service, 650 Capitol Mall, Suite 8-300,
Sacramento, CA 95814-4700

Reference cited:

NMFS. 2009. Biological and conference opinion on the long-term operation of the Central Valley Project and State Water Project. NMFS-Southwest Region, Long Beach, California. 844 pages plus appendices. June 4.

PFMC, Pacific Fisheries Management Council 2014. Appendix A, to the Pacific Coast Salmon Fishery Management Plan. 227 pp.