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

JAN 8 1999

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Mr. William H. Luce, Jr.
Bureau of Reclamation
South-Central California Area Office
2666 North Grove Industrial Drive, Suite 106
Fresno, California 93727-1551

Dear Mr Bill Luce:

The National Marine Fisheries Service (NMFS) is writing this letter to summarize and confirm our progress to date in addressing the requirements of the Endangered Species Act (ESA) for the Cachuma Project. We met with your agency on November 19, 1998 to discuss the time frame for consultation under section 7 of the ESA, the activities to be included in consultation, and the draft Biological Assessment (BA) prepared by the Bureau of Reclamation (BOR). We believe we have a common understanding of these issues with BOR.

NMFS has provided BOR with detailed comments on the draft BA. These comments have been updated to reflect the discussion at our November 19, 1998, meeting, and are enclosed with this letter. Upon receipt of a complete and acceptable BA, NMFS will initiate formal consultation. NMFS is committed to concluding consultation and issuing a biological opinion within the 135 day time frame provided in the section 7 regulations (50 CFR Part 402.14 (e)). NMFS has been working closely with your staff and your consultant to facilitate completion of the BA. We expect it will be finished and consultation initiated in late January or early February of this year.

NMFS will consult with the BOR on the all the operations and maintenance actions of the Cachuma Project that could adversely affect steelhead, and other activities downstream of Bradbury Dam involving BOR actions, including: yield and diversions from the project, spills, downstream water rights releases (conjunctive operation), state water deliveries, Hilton Creek watering system operation and habitat modification, emergency winter operations, fish rescues, conservation easements, tributary and mainstem enhancement (including barrier removal and other physical habitat modifications), and public education and outreach. Issues such as trapping and trucking of steelhead (*Oncorhynchus mykiss*) and a steelhead hatchery require careful long term development and assessment; and are not appropriate for consultation at this time.

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Craig Wingert (562-980-4021) is the policy lead at NMFS for this project. Eric Shott is the lead biologist (562-980-4026). Please contact them if you have any questions or would like additional information.

Sincerely,

James H. Lecky
Assistant Regional Administrator
Protected Resources

Enclosure

cc: Dr. William Hogarth, NMFS
David Young, BOR

Enclosure: Specific Comments to the August 6, 1998, Draft Biological Assessment for the Lower Santa Ynez River Operations Plan.

1) The proposed action.

More information is needed on several aspects of the project operations identified above:

Spills, draft BA p. 2-13:

- The draft BA notes that spills have occurred 15 times since completion of Bradbury Dam. Information is lacking as to timing and mechanics of spill events. Effects to steelhead will depend upon what life history stages are present in the mainstem below the dam. Specifically, what control does the facility have regarding the timing, magnitude, frequency, and flow specifics (ramping up or down) of spill events? Rapid cut off of spill flows may harm steelhead by stranding them in pools where they may be exposed to increased water temperature, decreased dissolved oxygen concentrations, and predators, or by exposing them to dewatering or desiccation. It appears that such a rapid cut off may have occurred this year when releases were cut from 151 acre feet to 68 acre feet between July 8 and 9.

Downstream water rights releases, pp. 2-13->2-17.

- NMFS understands that WR89-18 and WR94-5 mandate water rights releases to downstream water users from two different accounts set up based on downstream water user location. The draft BA should specifically describe the methodology used to calculate downstream releases, and the flexibility that may be available in the timing, frequency, magnitude and flow specifics (ramping up and down) of these releases. It appears from figure 2-5 in the draft BA that the amount of flow released downstream to the Santa Ynez river is reduced by half in 2-3 days time. As noted above, steelhead could become stranded by quick flow reductions.

Fish Account releases and conjunctive operation, p. 2-17, pp. 3-8->3-13, pp. 4-6->4-8:

- What flow releases correspond to achieving the flow targets? Are flow targets currently used to manage releases?

- There appears to be a gap between the high point of water rights releases shown on Figure 2-5 (130-140 cfs) and Table 3-1, where ramp downs start at 30 cfs. How would a reduction of flow from 140 cfs to 30 cfs be accomplished?

State Water Deliveries, pp. 2-21, 3-14->3-16.

- How often will state water be mixed with water from Lake Cachuma given the ability to use the Hilton Creek water supply line to deliver lake water to the Santa Ynez without interrupting state water deliveries?

Operation of the permanent watering system on Hilton Creek, pp.3-1->3-3.

- How much water can the Hilton Creek pipe supply if all three release points are open simultaneously and/or if the stilling basin release point and one of the creek release points are open?
- Specifically how will the Santa Ynez River Technical Advisory Committee (SYRTAC) make decisions regarding modifications to Hilton Creek operations? Will modifications be based upon temperature needs, habitat area availability, dissolved oxygen, or a combination of these and other factors? If so, what criteria will be used?

Modification of Hilton Creek habitat, pp. 3-3->3-8.

- The draft BA notes that modifications to Hilton Creek should be operational in the year 2000 (p. 6-5). If construction is proposed to start in 1999, NMFS will need specifics as to the construction schedule and methodology for preventing adverse impacts to steelhead and steelhead habitat to evaluate the potential impacts from construction.
- Specifics regarding the operation of the bypass/control works, flow levels in the channel extension, material to be used in the channel including the exact type of zone B material to be used in the liner, the exact location of the channel extension, and the expected effect on the natural Hilton Creek channel need to be provided in the BA.
- Maintenance needs should be estimated based on expected high flow years and the characteristics of the constructed channel and bypass/control works.
- In order for NMFS to consult on proposed modification to remove a potential natural barrier at the chute pool, the specifics of the project will need to be developed. It will be important to compare environmental benefits and costs, as well as financial.

Emergency winter operations pp. 3-16->3-18.

- It is unclear in the draft BA if the description of emergency winter operations given will be the final used. Discussions among BOR and local jurisdictions on emergency winter operations are described as ongoing.
- The specifics of lowering the reservoir need to be described in the draft BA.
- The specifics of releasing storm runoff need to be described in the draft BA in relation to how flow levels downstream are increased and decreased.

The flow aspects of pool habitat management:

- What releases are expected for the Long Pool based on the criteria found on pages 3-20 and 3-21?
- Would better monitoring sites exist if access were available?

- Why is habitat unit area not included in the criteria for pool habitat management?

- Would meeting the flow targets given elsewhere in the draft BA be used as a surrogate for objectives given at the bottom of page 3-20 and top of page 3-21? Or might flow targets be affected by flow management of pool habitat?

- What percentage or amount of water releases would be lost to percolation between the HWY 154 bridge and Alisal Road? How would this vary based on water year type?

Fish rescues on BOR property:

- The draft BA contains enough information on this activity for NMFS to consult.

Maintenance:

- NMFS received a request this year to cease flow deliveries for 1-2 hours to the Santa Ynez River from Bradbury Dam in order to test a state water pipeline valve. Such activities could adversely affect steelhead, and need to be documented in the BA.

- Other maintenance activities, such as replacement of the temporary road crossing after storms or spills need to be described in the BA if they could adversely affect steelhead.

2) Life history information for Santa Ynez River steelhead.

In addition to data contained in the draft BA, we understand data concerning steelhead (i.e., presence, adult and juvenile emigration and immigration, spawning, and distribution of instream habitat) have been collected in the mainstem, tributaries, and lagoon. Much of these data are located in several documents referenced by the draft BA. These data should be incorporated in the BA and used to the extent possible in the effects analysis. For example, redd surveys were conducted in the lower 1,500 feet of Hilton Creek in 1995. In addition, the draft BA reports that steelhead have been observed in the mainstem (p. 2-43). The numbers observed and survey years and methodologies should also be indicated.

NMFS needs more information on the following data reported in the draft BA:

Mainstem habitat mapping, pp. 2-23-2-25:

- The flows at which the Entrix 1994 study (Entrix 1995) was conducted are not given in the draft BA. Flow levels can affect habitat area and availability and are thus very important information that needs to be included in all physical habitat survey data presented. Where were flows from (water rights releases, fish account, etc.)?

- NMFS notes that the SYRTAC mapping of habitat units also occurred in August, September, October, and November of 1995. Flows were different depending upon the month sampling occurred. It appears that releases from the reservoir ceased on July 9, 1995 and fish account releases were about 5 cfs until mid December when they were reduced to 3 cfs. This information needs to be noted in the draft BA and analyzed. (It also appears that pool and riffle habitat area changed significantly during the period

surveyed). Complete information on survey data should be given in the BA. If certain information is not included, the reasons for its exclusion should be stated.

- The 1995 SYRTAC effort included snorkeling and electrofishing surveys for steelhead. It should be reported in the BA that not all habitat areas were sampled by either method. Thus the number of steelhead reported could underestimate the total.

- NMFS also understands that habitat data has recently been collected in the mainstem and at Hilton Creek. NMFS has been informed that it will take 1-2 months for this data to be analyzed. We request that the raw habitat data from this recent effort be forwarded to NMFS (paper and electronic copies). It is our understanding that this data will allow for some evaluation of flow targets and conjunctive operation plans.

Instream Vegetation, pp. 2-26-2-27:

- It appears from the description given that instream vegetation (algal mats) was surveyed extensively in 1995, and again in 1996 (although the exact extent of surveys is unclear). Have any other instream vegetation surveys been done on the lower Santa Ynez?

Substrate, p. 2-27:

- Were the 1994 surveys part of the Entrix effort noted on page 2-23?

- Page 2-27 notes that gravel was outside of the wetted channel between Refugio Road and Bradbury Dam. At what flows were these surveys conducted? Where were flows from (water rights releases, fish account, etc.) at the time of each survey?

- Are there any other surveys in the lower Santa Ynez that characterize the substrate?

Santa Ynez River Lagoon, pp. 2-29-2-30:

- Have any habitat mapping surveys been done in the lagoon pertinent to steelhead?

Hilton Creek, p 2.30:

- How much shading (percentage) is provided by riparian vegetation and the topography of the channel?

- At what flow was the SYRTAC survey conducted? Was habitat mapping confined to the wetted width of the channel?

- What criteria were used to determine "suitable spawning habitat".

- Have any other surveys of Hilton Creek habitat been conducted?

Mainstem Water Temperature, pp. 2-31-2-34:

- Were temperature data taken over several years and seasons or during one year and

season only?

- The duration of temperatures exceeding 25 degrees Celsius at surface thermographs needs to be given in the draft BA for each reach and temperature monitoring station. NMFS would like to see a graph showing temperatures during a day in which exceedence of 25 degrees Celsius occurred. Were measurements taken every hour? ½ hour? every 6 hours?

- How were the 1996 downstream water rights releases ramped up or down?

- At what flows were models run and actual temperature data taken? Only one flow rate, 5cfs, is given for one model. Where were flows from (water rights releases, fish account, etc.)?

- On page 2-34 it is reported the three temperature simulation models show that "stressful water temperatures were predicted (and observed to occur) within 4.4 miles below the dam...". What specifically is meant by 'stressful water temperatures'? NMFS would like more information concerning these temperatures, including diel variation, location (surface or depths) etc..

Mainstem Dissolved Oxygen, pp. 2-34-2-35:

- Were dissolved oxygen data taken over several years? At the surface or at depth or both? for all surveys?

- Where specifically (in which reaches and pools) were dissolved oxygen measurements taken?

- Did the different flow release rates (50, 75, and 135 cfs) remove the same amount of algae from pool habitats?

Santa Ynez River Lagoon, p. 2-35:

- Discuss habitat conditions including temperature, salinity, and dissolved oxygen in relation to seasonal and monthly occurrence and more specific location in the lagoon.

Hilton Creek, p. 2-36:

- Were the temperatures reported measured at the bottom of pools or the surface?

- How many temperature monitoring stations were used in 1995?

- Were temperature data taken during other years?

- At what flows were temperature data taken?

- Were dissolved oxygen data taken in Hilton Creek? If so, when and where?

3) Effects of Cachuma Project operations and maintenance on steelhead.

The BA should identify and describe the effects (both direct and indirect) of the existing Cachuma Project on steelhead abundance and distribution, life history, and habitat requirements. The effect analysis for the existing Cachuma Project should be performed for each operation and maintenance action associated with the existing project. The analysis should be performed in the context of the life history of steelhead and the environmental baseline. The environmental baseline "includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area..." (50 CFR 402.02). The methodology used for the effects analysis should be clearly described. The analysis also needs to include any cumulative effects that may occur (50 CFR 402.14(c)(4)).

For example: 1) Migrating adults- when do adults migrate? Are there any estimates of how many (redd counts)? Where do adults migrate and how are project operations expected to affect migrating adults. 2) Fry- where do fry emerge from the gravel and where do they spend their time rearing as fry? How do project operations affect fry (stranding, sediments, turbidity, habitat amounts and quality including temperature, dissolved oxygen, etc.)?

The following effects information is lacking for the following project actions identified above:

Capture of watershed runoff and water releases (including downstream water rights, fish account and conjunctive use):

- What does the pre-project hydrograph indicate for habitat conditions in the mainstem during different steelhead life history stages for dry, normal, and wet water years?
- What effects do the current amounts and frequencies of downstream releases and other water deliveries have on steelhead and steelhead habitat in the Lower Santa Ynez? Water releases may also affect temperature, dissolved oxygen, habitat unit area, instream vegetation growth, and other factors important to steelhead. Some analysis or comment on these issues and water releases is in the draft BA. But, little estimation as to the current effects of water releases on steelhead and steelhead habitat is given.
- How do water releases affect factors limiting the population?

Spills:

- As noted above for downstream water rights releases, spills may result in stranding of steelhead should flows be cut off too quickly when spilling ceases. Spills may also help steelhead migration in certain instances. The draft BA does not evaluate the effects of current spill operations on steelhead.

State water deliveries, p. 4-10:

- Steelhead were not listed in 1995. NMFS is concerned that CCWA water deliveries may affect not only temperature and imprinting, but also dissolved oxygen levels and habitat area available. The effects of current CCWA water deliveries need to be evaluated in the BA.

Emergency winter operations, p. 4-10:

- Emergency releases occurring within the natural range of stream flow fluctuations may strand fish if flow is reduced faster than it would naturally tail off after a winter storm. It is unclear if the "naturally occurring range of stream flow fluctuations" addresses this issue.

Flow aspects of pool habitat management:

- It is unclear if pool habitat management is part of the current operations of the Cachuma Project. If fish account or other releases are used in this manner the effects need to be evaluated in the BA.

Maintenance needs:

- Maintenance actions should analyzed for potential effects to steelhead and steelhead habitat including (but not limited to) stranding, turbidity, sedimentation, and toxics.

4) Biological basis of Reasonable Conservation Measures (section 3.1 draft BA)

Currently, little biological justification is given for the water in the fish reserve account and flow targets in the mainstem. Evaluation of proposed revisions should be based in part on the life history and habitat requirements of steelhead. How these revisions avoid, minimize, and/or mitigate any adverse effects to steelhead that are described in the effects analysis of project operation and maintenance should be clearly described in the BA. The methodology used in this determination also should be clearly described in the BA.

Fish Reserve Account:

- What is the biological basis for the amount of water allocated? How does the amount of water in the fish reserve account, and its use, mitigate for any adverse effects of proposed project and maintenance operations identified in the effects analysis?

Flow Targets:

- How do the flow targets described in the draft BA mitigate for any adverse effects of the proposed project?

- What is the biological basis for the 5cfs flow target at the HWY 154 bridge? Can data available distinguish the biological benefits to steelhead of other flow targets (for example 30, 15, 10, 7.5, and 2.5 cfs)?

General Comments:

Page xii:
"Based upon the foregoing, the Biological Assessment determines that the Plan will not result in jeopardy to Southern California steelhead populations in the Santa Ynez River. Accordingly,

Reclamation and the Member Units request that NMFS issue a finding that the Plan is not likely to adversely affect steelhead in the lower Santa Ynez River and issue an incidental take permit to allow implementation of the Plan".

Initiation of consultation will be triggered by the receipt of the final BA. Following the conclusion of consultation NMFS will issue a Biological Opinion containing an incidental take statement for the BOR's Cachuma Operations.

Page 1-1:

NMFS believes that the information collected, including DNA and fish surveys, indicates that federally endangered steelhead do indeed inhabit the lower Santa Ynez. Note that page 3-1 indicates that observations have "documented the migration of adult steelhead into Hilton Creek".

Other Issues:

When will state water deliveries reach the maximum capacity of the state water pipeline?

What data exists to quantitatively compare tributary habitat available in the Lower Santa Ynez River with mainstem habitat?

What amount and quality of habitat is available for steelhead in the mainstem at the following flows: 2.5, 5, 7.5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, and 125 cfs? This information should be developed based on water year, month, and location in the mainstem. See the last comment under number 4) above.

Specifically how will the results of revisions to long term operations be monitored?