December 17, 2015

Chair Marcus and Members of the
State Water Resources Control Board
By email to commentletters@waterboards.ca.gov

Subject: **Comments on SB 88 Draft Emergency Regulation for Measuring and Reporting on the Diversion of Water**

Summary

"You are what you measure."

Dan Ariely
Harvard Business Review[1]

We are writing on behalf of Trout Unlimited, The Nature Conservancy, and California Trout, organizations with more than 160 years of experience on behalf of rivers and fisheries in California.

Our groups enthusiastically support better measurement and reporting of water diversions. It is impossible for Californians to manage water without knowing how much there is and how people use it. In the 21st Century there is no question that all water diversions should be measured. A critical question – and challenge for the Board – is how to develop appropriate criteria and prioritize monitoring and reporting for different types of diversions across California.

In general, we support the proposed rule, including the tiered system intended to require more detailed measurements and faster implementation for the most important diversions. However, we recommend against using diversion size as the sole factor for prioritization. Diversions that might be inconsequential relative to Sacramento River flows could make all the difference for survival – or extirpation – of coho salmon in coastal streams. Instead, we recommend using the federal recovery plans for salmon and steelhead as a screening method so that even small diversions in coastal "Core" recovery watersheds receive top tier priority.

[1] Dan Ariely is an author and professor of Psychology and Behavioral Economics at Duke University. He notes that "Human beings adjust behavior based on the metrics they're held against. Anything you measure will impel a person to optimize his score on that metric. What you measure is what you'll get. Period. This phenomenon plays out time and again in research studies." (See Hsee, Christopher K. and Yu, Frank and Zhang, Jiao and Zhang, Yan, Medium Maximization. Journal of Consumer Research, Vol. 30, 2003. Available at SSRN: http://ssrn.com/abstract=929944.)

Specifically, diversions in coastal Core A and B recovery plan streams would have the same measurement standard as that required for new permits in the North Coast Instream Flow Policy. Using the framework established in the rule, measurement standards for direct diversions and diversions to offstream storage correspond roughly to measurement category I and diversions in onstream storage to Measurement Category IV.

Diversions that only affect flows on rivers regulated by large dams, such as the mainstem Russian, may be excluded from this analysis. In fact, there may be even more flexibility to de-prioritize diversions between 10 and 25 acre feet than presented in the draft rule for those areas.

Finally, we applaud the provisions in the rule for collaborative measurement. Our organizations are working with local landowners and state agencies in coastal California and throughout the state to develop meaningful collaborative landowner programs that will support landowners to find better ways to improve water reliability and flows for fish.

Our specific recommendations for implementing this suggestion are presented below.

Comments and Recommendations

We applaud the State Water Board for beginning to require devices and standard methodologies for tracking and reporting water diversions. The State's inability to accurately track or account for water diversions is a major roadblock to sound, science-based water management – and it's long overdue for addressing this issue. This is a great step in the right direction towards correcting this problem and putting us on better footing for tackling the state's bigger water accounting and tracking problems.

While we understand that this emergency regulation is implementing specific legislation, we urge the Board to take additional steps to make appropriate device-based measurement and reporting a reality for all types of water diverters.

1. **Prioritize Diversions in Core Recovery Streams for the California Coast**

While S.B. 88 calls for reporting diversions of 10 acre feet or more, this threshold is arbitrary from the standpoint of aquatic systems. In smaller coastal streams the support critical coho and steelhead populations, diversions of far less than 10 acre feet can have very significant impacts on instream habitat. As the Board well knows from implementing this year's Drought Orders for the Russian River tributaries, even a "trickle" of water in the right place is a matter of life or death for coho and steelhead.

Conversely, in larger rivers and those with flows regulated from large dams, 10 acre feet may be too small an amount to warrant the added expense to water users and the state.

For streams in Coastal California, we urge the State Water Board to use the existing Recovery Plans and the North Coast Instream Flow Policy as a guide for streams that warrant reporting requirements.

   a. **Core Recovery Watersheds Identified by NMFS**

The National Marine Fisheries Service has identified "Core" recovery watersheds for coastal California in recovery plans for the Southern Oregon/Northern California Coast coho salmon, Central California Coast coho salmon, South-Central California Coast steelhead, and Southern California steelhead. For each, NOAA identified "flows and water temperatures affecting all life stages" as key limiting factor. These Core A and B streams are compiled in the attached Letter from Patrick J. Rutten, NOAA Restoration Center Southwest Regional Supervisor, Maria Rea, Assistant Regional Administrator, NOAA California Central Valley Office, and Alecia Van Atta, NOAA Acting Assistant Regional Administrator, California Coastal Office, to Chuck Bonham, California Department of Fish and Wildlife, April 8, 2015.

Our organizations urge the State Water Board to prioritize water measurement and reporting for these streams. Specifically, we urge the State Water Board to use the measurement standards developed for the North Coast Instream Flow Policy for the Core A and B watersheds identified in these Recovery Plans. These standards are described in Policy Section 10 and implemented in Standard Permit Terms. The Board should require that level of monitoring and reporting for all diversions in these areas.

To reduce unnecessary reporting burdens, we further recommend that the Board could exclude from this requirement diversions that only affect flow regulated rivers, such as the Russian. (Those diversions would be subject to the generally applicable standards found elsewhere in the rule.)

If further exclusions are desired, the Board could narrow the list more by exempting watersheds where flow is considered a "low" priority in the recovery plans, or where the watershed is urbanized and small diversions are likely to be insignificant relative to municipal demand. See attached spreadsheet for a list of Core A and B streams tagged for these factors.

b. Direct Diversions and Diversions to Offstream Storage

In coastal areas, the time of greatest water demand is also the time of greatest water scarcity and greatest danger for salmon and steelhead. Direct diversions represent the greatest threat to coastal fisheries, because they are most likely to operate during the most critical times for coho and steelhead and cannot be timed to periods of greater water availability.

The vast majority of direct diversions in coastal California operate via pumps. For these diversions, the frequency of recording has little effect on cost. Once the instruments are installed, data can be recorded at hourly intervals as easily as it can be recorded daily or monthly. For the stream, however, the frequency of recording is vital. For that reason the North Coast Policy mandates continuous measurement and hourly recording. That approach is warranted in this rule.

Measurement of Direct Diversions: We recommend that the State Water Board require measurement of all direct diversions in under the rule equivalent to the Policy, using Standard Permit Term R, which is attached. This is substantially equivalent to the standard used in the draft rule for Measurement Category I.

Diversions to Offstream Storage: We recommend that diversions to offstream storage within the coastal recovery streams be treated like direct diversions, because their impact on aquatic resources is like that

of a direct diversion, and not like a diversion to onstream storage. We recommend that the State Water Board require measurement of direct diversions under the rule equivalent to the Policy, using Standard Permit Term 46, which is attached. This is substantially equivalent to the standard used in the draft rule for Measurement Category I.

Timing: We recommend that this category be implemented as part of Measurement Category I, by July 1, 2016.

Installation: We do not recommend requiring that the measurements be implemented by a professional unless otherwise required by the rule.

c. Diversions to Onstream Storage

Measurement: Diversions to onstream storage are harder to record at hourly intervals, and that interval of recording is less important for management of aquatic resources. We recommend that the State Water Board require measurement of all direct diversions in under the rule equivalent to the Policy, using Standard Permit Term 47 and Standard Permit Term 52 attached. This is roughly equivalent to the standard used in the draft rule for Measurement Category IV. (If the diversion is large enough to warrant a higher level of measurement or reporting under other provisions of the rule, those provisions should apply.)

Timing: We recommend that this category be implemented as part of Measurement Category IV, by January 1, 2018 unless otherwise required by the rule.

Installation: We do not recommend requiring that the measurements be implemented by a professional unless otherwise required by the rule.

2. Consider Additional Flexibility in Future Amendments

The State Water Board has requested comment on the circumstances in which the threshold for measurement and reporting should be raised. Our groups to not make a specific recommendation at this time, but we agree that there are likely to be circumstances where a higher threshold is warranted.

We recommend that the Board direct staff to evaluate diversions that only affect flow regulated rivers as a metric for assessing a higher threshold.

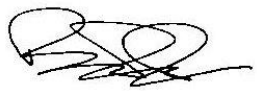
There may also be other circumstances where more stringent measurement and reporting thresholds are warranted than currently contemplated by the rule. Again, we do not make a specific recommendation at this time. Instead, we recommend that the Board direct staff to evaluate whether smaller diversions on unregulated rivers that have listed species in the Central Valley and Sierra Nevada or Cascades. Again, fisheries recovery plans may be useful as a screening device for those rivers.

Conclusion

It is imperative that California gain a better understanding of flows, groundwater-surface water dynamics and a clear framework to measure those conditions. We applaud the State Water Board for its draft rule.

Thank you for considering our comments. If you have any questions or would like further information, please contact the authors.

Sincerely,



Brian J. Johnson	Curtis Knight	Jay Ziegler
California Director	Executive Director	Director External Affairs and Policy
Trout Unlimited	California Trout	The Nature Conservancy

Category:
Reservoirs

Title:
Monitoring, Diversion, Offstream Storage

When Used:
For all rights that include diversion to offstream storage.

Background/Justification:
Wat. Code §§ 1058, 1605; Mandatory Term 15; Cal. Code Regs., tit. 23, §§ 925 et seq., 846; Policy for Maintaining Instream Flows in Northern California Coastal Streams § 10.0

TERM 046

No water shall be diverted to offstream storage under this right unless right holder is monitoring and reporting said diversion of water. This monitoring shall be conducted using a device(s) and methods satisfactory to the Deputy Director for Water Rights. The device(s) shall be capable of continuous* monitoring of the rate and quantity of water diverted and shall be properly maintained.

Right holder shall provide the Division of Water Rights with evidence that the device(s) has/have been installed with the first annual report submitted after device installation. Right holder shall provide the Division of Water Rights with evidence that substantiates that the device(s) is/are functioning properly every five years after device installation as an enclosure to the current annual report or whenever requested by the Division of Water Rights.

Right holder shall maintain a record of all diversions under this right that includes the date, time, rate of diversion at time intervals of one hour or less*, and the amount of water diverted. The records shall be submitted with the annual report or whenever requested by the Division of Water Rights.

(0060046)

*Continuous recording is required in the Policy area or in critical watersheds.

Category:
Reservoirs

Title:
Monitoring, Storage, Water Surface Elevation

When Used:
For use in all rights that include reservoirs unless site specific conditions preclude the installation of a device.

Background/Justification:
Wat. Code §§ 1058, 1605; Mandatory Term 15; Cal. Code Regs., tit. 23, §§ 925 et seq., 846; Policy for Maintaining Instream Flows in Northern California Coastal Streams § 10.0

TERM 047

No water shall be diverted under this right unless right holder is monitoring and reporting the water surface elevation in the reservoir(s). This monitoring shall be conducted using a device(s) and methods satisfactory to the Deputy Director for Water Rights. The device(s) shall be capable of monitoring water surface elevations from the maximum water line to the minimum water line known to exist for the reservoir(s) and shall be properly maintained.

Right holder shall provide the Division of Water Rights with evidence that the device(s) has/have been installed and the mark or reading corresponding to the maximum water line of the reservoir(s) with the first annual report submitted after device installation. Right holder shall provide the Division of Water Rights with evidence that substantiates that the device(s) is/are functioning properly every five years after device installation as an enclosure to the current annual report or whenever requested by the Division of Water Rights.

Right holder shall maintain a record of water surface elevations. The records shall be submitted with the annual report or whenever requested by the Division of Water Rights. The State Water Board may require release of water held in storage that cannot be verified by monthly records. Failure to maintain or submit the required records may result in the requirement to release the entire content of the reservoir's storage.

(0100047)

Category:
Reservoirs

Title:
Monitoring, Onstream Storage, Withdrawals and Releases

When Used:
For all water rights that include storage in an onstream reservoir.

Background/Justification:
Wat. Code §§ 1058, 1605; Mandatory Term 15; Cal. Code Regs., tit. 23, §§ 925 et seq., 846; Policy for Maintaining Instream Flows in Northern California Coastal Streams §§ 5.0, 10.0

TERM 052

No water shall be diverted under this right unless right holder is monitoring and reporting the withdrawal of water for beneficial use and the release of water* from the reservoir(s). This monitoring shall be conducted using a device(s) and methods satisfactory to the Deputy Director for Water Rights. The device(s) shall be capable of continuous** monitoring of the rate and quantity of water withdrawn for beneficial use or released to the stream channel* from each reservoir and shall be properly maintained.

Right holder shall provide the Division of Water Rights with evidence that the device(s) has/have been installed with the first annual report submitted after device installation. Right holder shall provide the Division of Water Rights with evidence that substantiates that the device(s) is/are functioning properly every five years after device installation as an enclosure to the current annual report or whenever requested by the Division of Water Rights.

Right holder shall maintain a record of all withdrawals of water for beneficial use or releases of water to the stream channel* under this right that includes the date, time, rate of withdrawal or release at time intervals of one hour or less**, and the amount of water withdrawn or released. The records shall be submitted with the annual report or whenever requested by the Division of Water Rights.

(0100052)

*Monitoring of reservoir releases is required for onstream reservoirs in the Policy area or in critical watersheds.
**Continuous recording is required in the Policy area or in critical watersheds.

Category:
Special Situation

Title:
Monitoring and Reporting, Direct Diversion

When Used:
For use in all rights that include direct diversion.

Background/Justification:
Wat. Code §§ 1058, 1605; Mandatory Term 15; Cal. Code Regs., tit. 23, §§ 925 et seq., 846; Policy for Maintaining Instream Flows in Northern California Coastal Streams § 10.0

TERM R

No water shall be directly diverted under this right unless right holder is monitoring and reporting said diversion of water. This monitoring shall be conducted using a device(s) and methods satisfactory to the Deputy Director for Water Rights. The device(s) shall be capable of continuous* monitoring of the EITHER rate and quantity of water diverted** OR daily amount of water diverted*** and shall be properly maintained.

Right holder shall provide the Division of Water Rights with evidence that the device(s) has/have been installed with the first annual report submitted after device installation. Right holder shall provide the Division of Water Rights with evidence that substantiates that the device(s) is/are functioning properly every five years after device installation as an enclosure to the current annual report or whenever requested by the Division of Water Rights.

Right holder shall maintain a record of all diversions under this right that includes the date, time, rate of diversion at time intervals of one hour or less*, and the amount of water diverted. The records shall be submitted with the annual report or whenever requested by the Division of Water Rights.

(000000R)

* Continuous recording is required in the Policy area or in critical watersheds.
** For direct diversion in cubic feet per second or gallons per minute.
*** For direct diversion in gallons per day.

NOAA Recovery Plan Priority Watersheds

SONCC Coho Salmon	NOAA Priority	Recovery Plan low risk flows	Urban
Central Coastal Smith River	A	x	
Elk Creek	B	x	
Wilson Creek	B	x	
Lower Klamath River	A		
Redwood Creek	A		
Maple Creek/Big Lagoon	B		
Little River	B		
Strawberry Creek	B	x	
Norton/Widow White Creek	B		
Mad River	B		
Interior Klamath River Middle Klamath River	A		
Upper Klamath River	A		
Salmon River	B	x	
Scott River	A		
Shasta River	A		
Interior Trinity River Lower Trinity River	A		
Upper Trinity River	A		
SF Trinity River	B		
Southern Coastal Humboldt Bay Tributaries	A		
Lower Eel and Van Duzen	A		
Guthrie Creek	B	x	
Bear River	B	x	
Mattole River	B		
Interior Eel River SF Eel River	A		
Mainstem Eel	A		
Middle Fork Eel River	B		
North Fork Eel River	B		
Middle Mainstem Eel River	A		
Upper Mainstem Eel River	B		

CCC Coho Salmon	NOAA Priority	Recovery Plan low risk flows	Urban
Lost Coast - Navarro Point Usal Creek	B		
Lost Coast - Navarro Point Cottaneva Creek	B		
Lost Coast - Navarro Point Juan Creek	B		
Lost Coast - Navarro Point DeHaven	B		
Lost Coast - Navarro Point Wages Creek	B		
Lost Coast - Navarro Point Ten Mile River	A		
Lost Coast - Navarro Point Pudding Creek	A		
Lost Coast - Navarro Point Noyo River	A	x	
Lost Coast - Navarro Point Hare Creek	B		
Lost Coast - Navarro Point Jug Handle Creek	B		

Lost Coast - Navarro Point Casper Creek	B
Lost Coast - Navarro Point Russian Gulch	B
Lost Coast - Navarro Point Big River	A
Lost Coast - Navarro Point Little River	B
Lost Coast - Navarro Point Albion River	A
Lost Coast - Navarro Point Big Salmon Creek	B
Navarro Point - Gualala Point Navarro River	A
Navarro Point - Gualala Point Greenwood Creek	B
Navarro Point - Gualala Point Elk Creek	B
Navarro Point - Gualala Point Alder Creek	B
Navarro Point - Gualala Point Brush Creek	B
Navarro Point - Gualala Point Garcia River	A
Navarro Point - Gualala Point Gualala River	A
Coastal - Russian River	A
Coastal - Salmon Creek	B
Coastal - Pine Gulch	B
Coastal - Walker Creek	A
Coastal - Lagunitas Creek	A
Coastal - Redwood Creek	B
Santa Cruz Mountains - San Gregorio	B
Santa Cruz Mountains - Pescadero Creek	A
Santa Cruz Mountains - Gazos Creek	B
Santa Cruz Mountains Waddell Creek	A
Santa Cruz Mountains Scott Creek	A
Santa Cruz Mountains - San Vicente Creek	A
Santa Cruz Mountains - Laguna Creek	B
Santa Cruz Mountains - San Lorenzo River	A
Santa Cruz Mountains - Soquel Creek	B
Santa Cruz Mountains - Aptos Creek	A

CCC Steelhead	**NOAA Priority**	**Recovery Plan low risk flows**	**Urban**
Coastal S.F. Bay - San Francisco Bay Estuary	N/A		x
Coastal S.F. Bay - Guadalupe River	A		x
Coastal S.F. Bay San Francisquito Creek	A		x
Coastal S.F. Bay Corte Madera Creek	A		x
Coastal S.F. Bay Stevens Creek	A		x
Coastal S.F. Bay Miller Creek (Marin Co.)	B		x
Coastal S.F. Bay San Mateo Creek	B		x
Coastal S.F. Bay Novato Creek	B		x
Interior - Upper Russian River	A		
Interior - Maacama Creek	A		
Interior - Dry Creek (tributaries)	A		
Interior - Mark West Creek	A		
Interior - Miller Creek (Russian)	B		
Interior - Crocker Creek	B		
Interior - Gill Creek	B		

Interior - Sausal Creek	B		
Interior S.F. Bay Codornices Creek	B		x
Interior S.F. Bay Pinole Creek	B		x
Interior S.F. Bay Wildcat Creek	B		x
Interior S.F. Bay Alameda Creek	A		x
Interior S.F. Bay Napa River	A		
Interior S.F. Bay Coyote Creek	A		x
Interior S.F. Bay Petaluma River	A		x
Interior S.F. Bay Green Valley/Suisun Creek	A		x
Interior S.F. Bay Sonoma Creek	A		
Interior S.F. Bay San Lorenzo Creek	B		x
Interior S.F. Bay San Leandro Creek	B		x
Interior S.F. Bay San Pablo Creek	B		x
North Coastal - Austin Creek	A		
North Coastal - Lagunitas Creek	A		
North Coastal - Green Valley Creek	A		
North Coastal - Salmon Creek	A		
North Coastal - Walker Creek	A		
North Coastal - Sheephouse Creek	A		
North Coastal - Redwood Creek (Marin Co.)	A		
North Coastal - Willow Creek	A		
North Coastal - Freezeout Creek	A		
North Coastal - Pine Gulch	A		
North Coastal - Hulbert Creek	A		
North Coastal - Porter Creek	A		
North Coastal - Dutch Bill Creek	A		
North Coastal - Drakes Bay	B		
North Coastal - Americano Creek	B		
Santa Cruz Mountains - San Pedro Creek	B		
Santa Cruz Mountains - Scott Creek	A		
Santa Cruz Mountains - Pescadero Creek	A		
Santa Cruz Mountains - San Lorenzo River	A		
Santa Cruz Mountains - Aptos Creek	A		
Santa Cruz Mountains - Pilarcitos Creek	A		
Santa Cruz Mountains - San Gregorio Creek	A		
Santa Cruz Mountains - Soquel Creek	A		
Santa Cruz Mountains - Waddell Creek	A		
Santa Cruz Mountains - San Vicente Creek	A		
Santa Cruz Mountains - Tunitas Creek	B		
Santa Cruz Mountains - Gazos Creek	A		
Santa Cruz Mountains - Laguna Creek	B		

Northern California winter steelhead	**NOAA Priority**	**Recovery Plan low risk flows**	**Urban**
Central Coastal - Brush Creek	B		
Central Coastal - Elk Creek	B		
Central Coastal - Garcia River	A		

Central Coastal - Gualala River	A		
Central Coastal - Navarro River	A		
Central Coastal - Schooner Gulch	B		
Lower Interior - Bell Springs Creek	B		
Lower Interior - Bucknell Creek	B		
Lower Interior - Chamise Creek	A		
Lower Interior - Outlet Creek	A		
Lower Interior - Soda Creek	B		
Lower Interior - Tomki Creek	A		
Lower Interior - Woodman Creek	A		
North Mountain Interior - Dobbyn Creek	B		
North Mountain Interior - Larabee Creek	A		
North Mountain Interior - Middle Fork Eel River	A		
North Mountain Interior - North Fork Eel River	A		
North Mountain Interior - Upper Mainstem Eel River/ Upper N	A		
North Mountain Interior - Van Duzen River	A		
North-Central Coastal - Albion River	B		
North-Central Coastal - Big River	B		
North-Central Coastal - Caspar Creek	B		
North-Central Coastal - Cottaneva Creek	B		
North-Central Coastal Noyo River	A		x
North-Central Coastal - Pudding Creek	B		
North-Central Coastal - Ten Mile River	A		
North-Central Coastal - Usal Creek	A		
North-Central Coastal - Wages Creek	A		
Northern Coastal Guthrie Creek	B		x
Northern Coastal - Maple Creek/Big Lagoon	A		
Northern Coastal - Oil Creek	B		
Northern Coastal Bear River	A		x
Northern Coastal - Big Creek	B		
Northern Coastal - Big Flat Creek	B		
Northern Coastal - Howe Creek	B		
Northern Coastal - Humboldt Bay	A		
Northern Coastal - Jackass Creek	B		
Northern Coastal - Little River (Humboldt County)	A		
Northern Coastal - Lower Mainstem Eel River	B		
Northern Coastal - Mattole River	A		
Northern Coastal - McNutt Gulch	B		
Northern Coastal - Shipman Creek	B		
Northern Coastal - South Fork Eel River	A		
Northern Coastal - Spanish Creek	B		
Northern Coastal - Telegraph Creek	B		
Northern Coastal/North Mountain Interior - Mad River	A		
Northern Coastal/North Mountain Interior - Redwood Creek (	A		

South-Central CA Coast Steelhead	**NOAA Priority**	**Recovery Plan low risk flows**	**Urban**

Interior Coast Range - Pajaro River	A
Interior Coast Range - Salinas River	A
Carmel River Basin - Carmel River	A
Big Sur Coast - San Jose Creek	B
Big Sur Coast - Little Sur River	A
Big Sur Coast - Big Sur River	A
San Luis Obispo Terrace - San Carpoforo Creek	B
San Luis Obispo Terrace - Arroyo de la Cruz	B
San Luis Obispo Terrace - San Simeon Creek	A
San Luis Obispo Terrace - Santa Rosa Creek	A
San Luis Obispo Terrace - San Luis Obispo Creek	A
San Luis Obispo Terrace - Pismo Creek	A
San Luis Obispo Terrace - Arroyo Grande Creek	A

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region

April 8, 2015

Mr. Chuck Bonham
California Department of Fish and Wildlife
1416 9th Street, 12th Floor
Sacramento, California 95814

Dear Mr. Bonham:

NOAA's National Marine Fisheries Service (NMFS) appreciates the many years of collaboration with the State to further salmon and steelhead (salmonid) recovery in California. This letter serves to advance the State and Federal collaboration in accordance with Proposition 1 and provide comments on the draft guidelines outlining the process, procedures, and prioritization criteria to fund watershed protection and restoration including water storage and conservation.

To achieve the Proposition 1 objectives of assisting in recovery of endangered or threatened species and ensuring funds are used for projects that provide fisheries or ecosystem benefits, it is our recommendation all program entities utilize the best available information found in formalized species or watershed plans such as State and Federal recovery plans. In California, there are 10 salmonid species, one green sturgeon southern population segment and one eulachon southern population segment that are federally listed as threatened or endangered under the Federal Endangered Species Act. NMFS is required to prepare recovery plans for these federally listed species and plans are now final for:

- Southern Oregon/Northern California Coast coho salmon;
- Central California Coast coho salmon;
- Sacramento River winter-run Chinook salmon;
- Central Valley spring-run Chinook salmon;
- Central Valley steelhead;
- South-Central California Coast steelhead; and
- Southern California Coast steelhead.

The Coast Multispecies recovery plan (Central California Coast steelhead, Northern California steelhead, and California Coastal Chinook), the green sturgeon plan and the eulachon plan are under development. The Federal recovery plans for California's salmonids were developed in cooperation with California Department of Fish and Wildlife (CDFW) and many others, and reflect the best available information, and bring significant new information into the public domain.

Recovery plans can be used by Proposition 1 project applicants as well as the program administering entities to identify:

- priority watersheds which have a greater influence on long-term salmonid viability;
- the intrinsic potential of stream reaches to support spawning and rearing salmonids which can guide actions to areas more likely to respond to restoration;
- priority recovery actions for estuarine and freshwater habitats that address factors limiting salmonid recovery, including water conservation;
- priorities for green sturgeon recovery; and
- research and monitoring needs and priorities that refine recovery goals and track and assess the effectiveness of recovery activities.

For projects benefiting salmonids, NMFS recommends a geographic and limiting factor focus of funds to those areas of greater importance to salmonid viability and persistence in California. Priority watersheds for California's anadromous salmonids and green sturgeon, and factors limiting their recovery, are identified in the aforementioned recovery plans and summarized in the enclosed tables[1]. Decisions to focus funds to specific areas do not imply other areas are less important or not needed for recovery. Rather, decisions to focus are necessary to ensure funds are optimizing benefits to fisheries and ecosystem processes. Should Proposition 1 program funds be tracked to priorities and actions identified in Federal recovery plans, NMFS would be able to more explicitly report to Congress in 5-Year Status Reviews and Biennial Reports to Congress on our collective efforts and successes to recover California's native anadromous fishes.

We have the following additional recommendations on solicitations, review criteria, and program processes:

- Provide information on the targeted annual distribution of the funding program.
- Ensure public transparency and reporting on criteria, scoring, and technical and selection panel processes to include the monitoring and assessment reports of funded projects.

[1] The watersheds ranked priority "A" are highest priority for species recovery and may include key areas supporting monitoring and/or conservation hatchery programs. Watersheds ranked as a priority "B" or "C" are other watersheds that may be needed for recovery but are considered lower in priority, relative to "A" watersheds. The intent is not to exclude watersheds but request that priority "A" watersheds are weighted more heavily if competing with priority "B" or "C" watersheds. Similarly, "B" watersheds should be weighted more than "C" watersheds. Also note the priority watersheds are grouped into Diversity Strata or Diversity Groups in the attached tables. Salmon and steelhead restoration and recovery efforts must be occurring across all groups to make meaningful strides in the recovery of the species'.

- Program guidelines, solicitations, and review criteria should: (1) make specific reference to anadromous fishes and their habitats and the associated state and Federal recovery plans, (2) utilize recovery plan information, and (3) include website links to recovery plans as appropriate to program objectives.

- Encourage grant applicants to develop projects that support actions specified in recovery plans or require salmonid projects align with recovery actions in a state or Federal recovery plan (e.g., The Fisheries Restoration Grant program requires all projects link directly to a state or Federal recovery action).

- Develop a mechanism to track projects that are implementing Federal recovery plan priorities and actions to improve State and national reporting to Congress on progress.

- Invite NMFS as a technical reviewer or member of the grant program selection panel on salmonid and sturgeon related projects, provided technical review participation by NMFS does not exclude NMFS from potential selection panel membership.

- Consider the ability for applicants to apply for both the Watershed Restoration Grant Program and the Fisheries Restoration Grant Program with one application if the proposal benefits fish.

- Clarify that resource conservation districts are eligible for the programs.

- The NOAA Restoration Center's Northern California Office *Restoration Programmatic Biological Opinion for Restoration Projects* provides an estimated cost savings for taxpayers ranging from $25,000 to $64,000 per project. Consider using existing permitting efficiencies that are already in place such as the RGP 12 and RGP 78 for Proposition 1-funded projects that fit within those programs. If this is not feasible, work with NMFS and others to streamline permitting to reduce permitting costs and bring more dollars to on-the-ground restoration.

- Provide information in the solicitation notice regarding potential permits required for implementation projects such as agency websites and/or regional contact information. This small detail can help reduce the number of projects that have to delay or are unable to implement funded projects because of failure to meet all the environmental compliance requirements.

- A statewide grant program that aims to produce on the ground projects for environmental benefits will require a high degree of oversight to ensure projects are designed and implemented correctly to provide the targeted benefits. Regional coordinators committed to the grant program will be vital to program success. Consider allocating staff or funding dedicated coordinators to the various regions to improve communication, coordination and implementation of Proposition 1 funds with cooperating entities.

Thank you for the opportunity to comment. We look forward to a higher level of collaboration to ensure the continued protection and restoration of the States anadromous fisheries resources.

If you have questions please direct them to Charlotte Ambrose, California Programs Coordinator, at 916-930-3704.

Sincerely,

Patrick J. Rutten
NOAA Restoration Center
Southwest Region Supervisor

Maria Rea
Assistant Regional Administrator
California Central Valley Office

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California Coastal Office

Enclosure

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Priorities for Southern Oregon/Northern California Coast coho salmon

Federal Status: Federally Threatened

Key Limiting Factors:

- Loss of diversity in habitats, life-histories, genetic vigor, and ecological processes
- Simplification and loss of estuarine and offchannel or floodplain habitats
- Flows and water temperatures affecting all life stages
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Predation
- Degraded water quality from agricultural and urban runoff
- Fish passage impediments/barriers for immigrating adults

Lack of abundance and distribution data

Priority Populations or "Watersheds":

Diversity Strata	SONCC Coho Salmon Populations	Priorities
Central Coastal	Smith River	A
	Elk Creek	B
	Wilson Creek	B
	Lower Klamath River	A
	Redwood Creek	A
	Maple Creek/Big Lagoon	B
	Little River	B
	Strawberry Creek	B
	Norton/Widow White Creek	B
	Mad River	B
Interior Klamath River	Middle Klamath River	A
	Upper Klamath River	A
	Salmon River	B
	Scott River	A
	Shasta River	A
Interior Trinity River	Lower Trinity River	A
	Upper Trinity River	A
	SF Trinity River	B
Southern Coastal	Humboldt Bay Tributaries	A
	Lower Eel and Van Duzen	A
	Guthrie	B
	Bear River	B
	Mattole River	B
Interior Eel River	SF Eel River	A
	Mainstem Eel	A
	Middle Fork Eel River	B
	North Fork Eel River	B
	Middle Mainstem Eel River	A
	Upper Mainstem Eel River	B

Priorities for Central California Coast coho salmon

Federal Status: Federally Endangered

Key Limiting Factors:

- Loss of diversity in habitats, life-histories, genetic vigor, and ecological processes
- Simplification and loss of estuarine and offchannel or floodplain habitats
- Flows and water temperatures affecting all life stages
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Predation
- Degraded water quality from agricultural and urban runoff
- Fish passage impediments/barriers for immigrating adults
- Lack of abundance and distribution data

Priority Populations or "Watersheds":

Diversity Strata	CCC Coho Salmon Populations	Priorities	Notes
Lost Coast - Navarro Point	Usal Creek	B	
Lost Coast - Navarro Point	Cottaneva Creek	B	
Lost Coast - Navarro Point	Juan Creek	B	
Lost Coast - Navarro Point	DeHaven	B	
Lost Coast - Navarro Point	Wages Creek	B	
Lost Coast - Navarro Point	Ten Mile River	A	
Lost Coast - Navarro Point	Pudding Creek	A	Long-Term Monitoring of Coho
Lost Coast - Navarro Point	Noyo River	A	
Lost Coast - Navarro Point	Hare Creek	B	
Lost Coast - Navarro Point	Jug Handle Creek	B	
Lost Coast - Navarro Point	Casper Creek	B	
Lost Coast - Navarro Point	Russian Gulch	B	
Lost Coast - Navarro Point	Big River	A	
Lost Coast - Navarro Point	Little River	B	
Lost Coast - Navarro Point	Albion River	A	
Lost Coast - Navarro Point	Big Salmon Creek	B	
Navarro Point - Gualala Point	Navarro River	A	
Navarro Point - Gualala Point	Greenwood Creek	B	
Navarro Point - Gualala Point	Elk Creek	B	
Navarro Point - Gualala Point	Alder Creek	B	
Navarro Point - Gualala Point	Brush Creek	B	
Navarro Point - Gualala Point	Garcia River	A	
Navarro Point - Gualala Point	Gualala River	A	
Coastal	Russian River	A	Outplanting for Captive Broodstock
Coastal	Salmon Creek	B	

Coastal	Pine Gulch	B	
Coastal	*Walker Creek*	A	Outplanting for Captive Broodstock
Coastal	Lagunitas Creek	A	Long-Term Monitoring of Coho
Coastal	Redwood Creek	B	
Santa Cruz Mountains	San Gregorio	B	
Santa Cruz Mountains	Pescadero Creek	A	Outplanting for Captive Broodstock
Santa Cruz Mountains	Gazos Creek	B	
Santa Cruz Mountains	Waddell Creek	A	Outplanting for Captive Broodstock
Santa Cruz Mountains	Scott Creek	A	Outplanting for Captive Broodstock
Santa Cruz Mountains	San Vicente Creek	A	Outplanting for Captive Broodstock
Santa Cruz Mountains	Laguna Creek	B	
Santa Cruz Mountains	San Lorenzo River	A	Outplanting for Captive Broodstock
Santa Cruz Mountains	Soquel Creek	B	
Santa Cruz Mountains	Aptos Creek	A	Outplanting for Captive Broodstock

Priorities for Central California Coast steelhead

Federal Status: Federally Threatened

Key Limiting Factors:

- Loss of diversity in habitats, life-histories, genetic vigor, and ecological processes
- Dams blocking access to historical habitat
- Simplification and loss of estuarine and offchannel or floodplain habitats
- Flows and water temperatures affecting all life stages
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Levee maintenance actions that reduce the conservation value of migration and rearing corridors
- Predation
- Juvenile fish injury and mortality at unscreened or poorly screened water diversions
- Degraded water quality from agricultural and urban runoff
- Fish passage impediments/barriers for immigrating adults
- Lack of abundance and distribution data

Priority Populations or "Watersheds"

Diversity Strata	CCC Steelhead Populations	Priorities
Coastal S.F. Bay	San Francisco Bay Estuary	N/A
Coastal S.F. Bay	Guadalupe River	A
Coastal S.F. Bay	San Francisquito Creek	A

Coastal S.F. Bay	Corte Madera Creek	A
Coastal S.F. Bay	Stevens Creek	A
Coastal S.F. Bay	Miller Creek (Marin Co.)	B
Coastal S.F. Bay	San Mateo Creek	B
Coastal S.F. Bay	Novato Creek	B
Interior	Upper Russian River	A
Interior	Maacama Creek	A
Interior	Dry Creek	A
Interior	Mark West Creek	A
Interior	Miller Creek (Russian)	B
Interior	Crocker Creek	B
Interior	Gill Creek	B
Interior	Sausal Creek	B
Interior S.F. Bay	Codornices Creek	B
Interior S.F. Bay	Pinole Creek	B
Interior S.F. Bay	Wildcat Creek	B
Interior S.F. Bay	Alameda Creek	A
Interior S.F. Bay	Napa River	A
Interior S.F. Bay	Coyote Creek	A
Interior S.F. Bay	Petaluma River	A
Interior S.F. Bay	Green Valley/Suisun Creek	A
Interior S.F. Bay	Sonoma Creek	A
Interior S.F. Bay	San Lorenzo Creek	B
Interior S.F. Bay	San Leandro Creek	B
Interior S.F. Bay	San Pablo Creek	B
North Coastal	Austin Creek	A
North Coastal	Lagunitas Creek	A
North Coastal	Green Valley Creek	A
North Coastal	Salmon Creek	A
North Coastal	Walker Creek	A
North Coastal	Sheephouse Creek	A
North Coastal	Redwood Creek (Marin Co.)	A
North Coastal	Willow Creek	A
North Coastal	Freezeout Creek	A
North Coastal	Pine Gulch	A
North Coastal	Hulbert Creek	A
North Coastal	Porter Creek	A
North Coastal	Dutch Bill Creek	A
North Coastal	Drakes Bay	B
North Coastal	Americano Creek	B
Santa Cruz Mountains	San Pedro Creek	B
Santa Cruz Mountains	Scott Creek	A

Santa Cruz Mountains	Pescadero Creek	A
Santa Cruz Mountains	San Lorenzo River	A
Santa Cruz Mountains	Aptos Creek	A
Santa Cruz Mountains	Pilarcitos Creek	A
Santa Cruz Mountains	San Gregorio Creek	A
Santa Cruz Mountains	Soquel Creek	A
Santa Cruz Mountains	Waddell Creek	A
Santa Cruz Mountains	San Vicente Creek	A
Santa Cruz Mountains	Tunitas Creek	B
Santa Cruz Mountains	Gazos Creek	A
Santa Cruz Mountains	Laguna Creek	B

Priorities for Northern California steelhead

Federal Status: Federally Threatened

Key Limiting Factors:

- Loss of diversity in habitats, life-histories, genetic vigor and ecological processes
- Simplification and loss of estuarine and offchannel or floodplain habitats
- Flows and water temperatures affecting all life stages
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Predation
- Degraded water quality from agricultural and urban runoff
- Fish passage impediments/barriers for immigrating adults
- Lack of abundance and distribution data

Priority Populations or "Watersheds":

Diversity Strata	NC winter steelhead Populations	Priorities
Central Coastal	Brush Creek	B
Central Coastal	Elk Creek	B
Central Coastal	Garcia River	A
Central Coastal	Gualala River	A
Central Coastal	Navarro River	A
Central Coastal	Schooner Gulch	B

Lower Interior	Bell Springs Creek	B
Lower Interior	Bucknell Creek	B
Lower Interior	Chamise Creek	A
Lower Interior	Outlet Creek	A
Lower Interior	Soda Creek	B
Lower Interior	Tomki Creek	A
Lower Interior	Woodman Creek	A
North Mountain Interior	Dobbyn Creek	B
North Mountain Interior	Larabee Creek	A
North Mountain Interior	Middle Fork Eel River	A
North Mountain Interior	North Fork Eel River	A
North Mountain Interior	Upper Mainstem Eel River/ Upper Middle Mainstem Eel River (Summer)	A
North Mountain Interior	Van Duzen River	A
North-Central Coastal	Albion River	B
North-Central Coastal	Big River	B
North-Central Coastal	Caspar Creek	B
North-Central Coastal	Cottaneva Creek	B
North-Central Coastal	Noyo River	A
North-Central Coastal	Pudding Creek	B
North-Central Coastal	Ten Mile River	A
North-Central Coastal	Usal Creek	A
North-Central Coastal	Wages Creek	A
Northern Coastal	Guthrie Creek	B
Northern Coastal	Maple Creek/Big Lagoon	A
Northern Coastal	Oil Creek	B
Northern Coastal	Bear River	A
Northern Coastal	Big Creek	B
Northern Coastal	Big Flat Creek	B
Northern Coastal	Howe Creek	B
Northern Coastal	Humboldt Bay	A
Northern Coastal	Jackass Creek	B
Northern Coastal	Little River (Humboldt County)	A
Northern Coastal	Lower Mainstem Eel River	B
Northern Coastal	Mattole River	A
Northern Coastal	McNutt Gulch	B
Northern Coastal	Shipman Creek	B
Northern Coastal	South Fork Eel River	A
Northern Coastal	Spanish Creek	B
Northern Coastal	Telegraph Creek	B
Northern Coastal/North Mountian Interior	Mad River	A
Northern Coastal/North Mountian Interior	Redwood Creek (Humboldt Co)	A

Priorities for California Coastal Chinook salmon

Federal Status: Federally Threatened

Key Limiting Factors:

- Simplification and loss of estuarine and offchannel or floodplain habitats
- Loss of diversity in habitats, life-histories, genetic vigor and ecological processes
- Flows and water temperatures affecting all life stages
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Predation
- Degraded water quality from agricultural and urban runoff
- Fish passage impediments/barriers for immigrating adults
- Lack of abundance and distribution data

Priority Populations or "Watersheds":

Diversity Strata	CC Chinook salmon Populations	Priorities
Central Coastal	Gualala River	B
Central Coastal	Navarro River	B
Central Coastal	Garcia River	A
Central Coastal	Russian River	A
North Coastal	Bear River	A
North Coastal	Humboldt Bay	A
North Coastal	Little River (Humboldt County)	A
North Coastal	Lower Eel River	A
North Coastal	Mad River	A
North Coastal	Mattole River	A
North Coastal	Redwood Creek (Humboldt Co)	A
North Coastal	South Fork Eel River	A
North Mountain Interior	Larabee Creek	A
North Mountain Interior	Upper Eel River	A
North Mountain Interior	Van Duzen River	A
North-Central Coastal	Albion River	B
North-Central Coastal	Big River	A
North-Central Coastal	Noyo River	A
North-Central Coastal	Ten Mile River	B

Priorities for Sacramento River winter-run Chinook salmon

Federal Status: Federally Endangered

Key Limiting Factors:

- Loss of diversity in habitats, life-histories, genetic vigor, and ecological processes
- Keswick and Shasta Dams blocking access to historical habitat
- Flows and water temperatures below Keswick and Shasta Dams affecting all life stages
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration

- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Levee maintenance actions that reduce the conservation value of migration and rearing corridors
- Predation
- Juvenile fish injury and mortality at unscreened or poorly screened water diversions
- Degraded water quality from agricultural and urban runoff
- Unnatural flow regimes through the Delta pulling juvenile salmonids towards the south Delta pumps
- Fish passage impediments/barriers for immigrating adults in the Yolo bypass, Colusa Basin Drain, and the Sacramento Deepwater Ship Channel

Priority Populations or "Watersheds":

Diversity Group	Sacramento River Winter-run Chinook Salmon Populations	Priorities
Basalt and Porous Lava	Sacramento River (below Shasta Dam)	A
	Little Sacramento River (above Shasta Dam)	Candidate Reintroduction Area
	Battle Creek	Primary Reintroduction Area
	McCloud River	Primary Reintroduction Area

Priorities for Central Valley spring-run Chinook salmon

Federal Status: Federally Threatened

Key Limiting Factors:
- Loss of diversity in habitats, life-histories, genetic vigor, and ecological processes
- Dams blocking access to historical habitat
- Unnatural flow patterns below dams
- Low flows and warm water temperatures
- Small passage impediments in Antelope, Mill, Deer, and Big Chico, and in the Feather and Yuba Rivers
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Levee maintenance actions that reduce the conservation value of migration and rearing corridors
- Predation
- Juvenile fish injury and mortality at unscreened or poorly screened water diversions
- Degraded water quality from agricultural and urban runoff
- Unnatural flow regimes through the Delta pulling juvenile salmonids towards the south Delta pumps
- Fish passage impediments/barriers for immigrating adults in the Yolo bypass, Colusa Basin Drain, and the Sacramento Deepwater Ship Channel

Priority Populations or "Watersheds":

Diversity Group	Central Valley Spring-run Chinook Salmon Populations	Priorities
Basalt and Porous Lava	Sacramento River (below Shasta Dam)	B
	Little Sacramento River (above Shasta Dam)	Candidate Reintroduction Area
	Battle Creek	A
	McCloud River	Primary Reintroduction Area
Northwestern California	Stony Creek	C
	Thomes Creek	C
	Cottonwood/Beegum	B
	Clear Creek	A
Northern Sierra Nevada	Mokelumne (below Comanche)	Candidate Reintroduction Area
	Mokelumne (above Pardee)	Candidate Reintroduction Area
	American River (above Folsom)	Candidate Reintroduction Area
	American River (below Nimbus)	Non-Candidate Reintroduction Area
	Feather River (below Oroville)	B
	West Branch Feather (above Oroville)	Non-Candidate Reintroduction Area
	North Fork Feather (above Oroville)	Candidate
	Middle Fork Feather (above Oroville)	Non-Candidate Reintroduction Area
	South Fork Feather (above Oroville)	Non-Candidate Reintroduction Area
	Yuba River (below Englebright)	B
	North Yuba River (above Englebright)	Primary Reintroduction Area
	Middle Yuba River (above Englebright)	Primary Reintroduction Area
	South Yuba River (above Englebright)	Candidate Reintroduction Area
	Butte Creek	A
	Big Chico	B
	Deer Creek	A
	Mill Creek	A
	Antelope Creek	B
Southern Sierra Nevada	Stanislaus River (below Goodwin)	Candidate Reintroduction Area
	Upper Stanislaus River (abvove New Melones)	Candidate Reintroduction Area
	Tuolumne River (below La Grange)	Candidate Reintroduction Area
	Upper Tuolumne River above La Grange and Don Pedro)	Candidate Reintroduction Area
	Merced River (below Crocker Huffman)	Candidate Reintroduction Area
	Upper Merced River above New Exchequer)	Candidate Reintroduction Area

Diversity Group	Central Valley Spring-run Chinook Salmon Populations	Priorities
	San Joaquin River (below Friant)	Primary Reintroduction Area
	San Joaquin above Friant	Non-Candidate Reintroduction Area

Priorities for Central Valley steelhead

Federal Status: Federally Threatened

Key Limiting Factors:

- Loss of diversity in habitats, life-histories, genetic vigor, and ecological processes
- Dams blocking access to historical habitat
- Unnatural flow patterns below dams
- Low flows and warm water temperatures
- Small passage impediments in Antelope, Mill, Deer, and Big Chico, and in the Feather, Yuba, Mokelumne, Calaveras, and San Joaquin Rivers
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Levee maintenance actions that reduce the conservation value of migration and rearing corridors
- Predation
- Juvenile fish injury and mortality at unscreened or poorly screened water diversions
- Degraded water quality from agricultural and urban runoff
- Unnatural flow regimes through the Delta pulling juvenile salmonids towards the south Delta pumps
- Fish passage impediments/barriers for immigrating adults in the Yolo bypass, Colusa Basin Drain, and the Sacramento Deepwater Ship Channel
- Lack of abundance and distribution data

Priority Populations or "Watersheds":

Diversity Group	Central Valley Steelhead Populations	Priorities
Basalt and Porous Lava	Sacramento River (below Shasta Dam)	B
	Little Sacramento River (above Shasta Dam)	Candidate Reintroduction Area
	Battle Creek	A
	Cow Creek	B
	McCloud River	Primary Reintroduction Area
Northwestern California	Putah Creek	B
	Stony Creek	C
	Thomes Creek	B
	Cottonwood/Beegum	B
	Clear Creek	A
Northern Sierra Nevada	Cosumnes River	C
	Mokelumne River (below Comanche)	B

Diversity Group	Central Valley Steelhead Populations	Priorities
	Mokelumne River (above Pardee)	Candidate Reintroduction Area
	American River (below Nimbus)	B
	Upper American (above Folsom)	Candidate Reintroduction Area
	Auburn Ravine	B
	Dry Creek	C
	Feather River (below Oroville)	B
	West Branch Feather (above Oroville)	Non-Candidate Reintroduction Area
	North Fork Feather (above Oroville)	Candidate Reintroduction Area
	Middle Fork Feather (above Oroville)	Non-Candidate Reintroduction Area
	South Fork Feather (above Oroville)	Non-Candidate Reintroduction Area
	Bear River	C
	Yuba River (below Englebright)	B
	North, Middle, South Yuba Rivers (above Englebright)	Primary Reintroduction Area
	Butte Creek	B
	Big Chico	B
	Deer Creek	A
	Mill Creek	A
	Antelope Creek	A
Southern Sierra Nevada	Calaveras River (below New Hogan)	A
	Upper Calaveras River (above New Hogan)	Non-Candidate Reintroduction Area
	Stanislaus River (below Goodwin)	B
	Upper Stanislaus River (above New Melones)	Candidate Reintroduction Area
	Tuolumne River (below La Grange)	B
	Upper Tuolumne River (abv La Grange and Don Pedro)	Candidate Reintroduction Area
	Merced River (below Crocker Huffman)	B
	Upper Merced River (above New Exchequer)	Candidate Reintroduction Area
	San Joaquin River (below Friant)	Candidate Reintroduction Area
	Upper San Joaquin (above Friant)	Candidate Reintroduction Area

Priorities for southern DPS green sturgeon

Federal Status: Federally Threatened

Key Limiting Factors:

- Loss of historical spawning and rearing habitat on the Sacramento, Feather, and Yuba rivers

- Unnatural seasonal flow and water temperature patterns on the Sacramento, Feather, and Yuba rivers
- Restricted passage caused by the Sunset Pumps diversion structure on the Feather River
- Juvenile fish injury and mortality at unscreened or poorly screened water diversions
- Degraded water quality from agricultural and urban runoff
- Unnatural flow regimes through the Delta pulling juvenile salmonids towards the south Delta pumps
- Fish passage impediments/barriers for immigrating adults in the Yolo bypass, Colusa Basin Drain, and the Sacramento Deepwater Ship Channel
- Limited understanding of the species' biological requirements

Priority Populations or "Watersheds":

Diversity Group	sDPS Green Sturgeon Watersheds	Priorities
Not applicable for green sturgeon	Sacramento River (below Shasta/Keswick Dams)	A
	Feather River (below Oroville Dam)	A
	Yuba River (below Englebright Dam	A

Priorities for South-Central California Coast steelhead

Federal Status: Federally Threatened

Key Limiting Factors: Dams blocking access to historical habitat

- Loss of diversity in habitats, life-histories, genetic vigor, and ecological processes
- Simplification and loss of estuarine and offchannel or floodplain habitats
- Flows and water temperatures affecting all life stages
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Levee maintenance actions that reduce the conservation value of migration and rearing corridors
- Predation
- Juvenile fish injury and mortality at unscreened or poorly screened water diversions
- Degraded water quality from agricultural and urban runoff
- Fish passage impediments/barriers for immigrating adults
- Lack of abundance and distribution data

Priority Populations or "Watersheds":

Diversity Group	So.-Cent. Steelhead Populations	Priorities
Interior Coast Range	Pajaro River	A
Interior Coast Range	Salinas River	A
Carmel River Basin	**Carmel River**	A
Big Sur Coast	San Jose Creek	B
Big Sur Coast	Little Sur River	A
Big Sur Coast	Big Sur River	A

San Luis Obispo Terrace	San Carpoforo Creek	B
San Luis Obispo Terrace	Arroyo de la Cruz	B
San Luis Obispo Terrace	San Simeon Creek	A
San Luis Obispo Terrace	Santa Rosa Creek	A
San Luis Obispo Terrace	San Luis Obispo Creek	A
San Luis Obispo Terrace	Pismo Creek	A
San Luis Obispo Terrace	Arroyo Grande Creek	A

Priorities for Southern California steelhead

Federal Status: Federally Endangered

Key Limiting Factors:

- Loss of diversity in habitats, life-histories, genetic vigor, and ecological processes
- Simplification and loss of estuarine and offchannel or floodplain habitats
- Flows and water temperatures affecting all life stages
- Loss of riparian habitat and instream cover affecting juvenile rearing and outmigration
- Loss of floodplain habitat affecting juvenile rearing and outmigration
- Levee maintenance actions that reduce the conservation value of migration and rearing corridors
- Predation
- Juvenile fish injury and mortality at unscreened or poorly screened water diversions
- Degraded water quality from agricultural and urban runoff
- Fish passage impediments/barriers for immigrating adults
- Lack of abundance and distribution data

Priority Populations or "Watersheds":

Diversity Strata	So. Calif. Steelhead Populations	Priorities
Monte Arido Highlands	Santa Maria River	B
Monte Arido Highlands	Santa Ynez River	A
Monte Arido Highlands	Ventura River	A
Monte Arido Highlands	Santa Clara river	
Conception Coast	Goleta Slough Complex	A
Conception Coast	Mission Creek	A
Conception Coast	Carpinteria Creek	A
Conception Coast	Rincon Creek	B
Santa Monica Mts.	Arroyo Sequit	B
Santa Monica Mts.	Malibu Creek	A
Santa Monica Mts.	Topanga Creek	A
Mojave Rim	San Gabriel River	A
Mojave Rim	Santa Ana River	A
Santa Catalina Gulf	San Juan Creek	A
Santa Catalina Gulf	San Mataeo Creek	A
Santa Catalina Gulf	Santa Margarita River	A
Santa Catalina Gulf	San Luis Rey River	A
Santa Catalina Gulf	San Dieguito	B