

**Questions from Delta Vision Blue Ribbon Task Force:
Response from NOAA's National Marine Fisheries Service**

A. General Questions:

- 1. *How do your department's activities contribute to achieving the co-equal values of sustaining both Delta ecosystem and water reliability functions, recognizing the Delta as a unique and valued area warranting special legal status?***

NOAA's National Marine Fisheries Service (NMFS) is part of the Department of Commerce, and is the Federal agency responsible for the stewardship of the nation's living marine resources and their habitat. In central California, Federally listed endangered Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), threatened Central Valley spring-run Chinook salmon (*O. tshawytscha*), threatened Central Valley steelhead (*O. mykiss*), and their designated critical habitat; threatened Southern distinct population segment (DPS) of North American green sturgeon (*Acipenser medirostris*); and the Essential Fish Habitat (EFH) of Pacific salmon are often the primary focus of NMFS stewardship activities. Although we are not charged to provide a reliable water supply, we are engaged in processes that involve other entities with such a charge. We recognize the importance of a reliable freshwater source to California's agriculture and residents, and encourage actions to improve water conservation, storage, and delivery system efficiency. This recognition and knowledge helps us work with others to balance water supply reliability actions with those needed to ensure the survival and recovery of anadromous fish.

NMFS authority and resource responsibilities in the Delta are not limited to but stem primarily from the Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The discharge of our responsibilities under the ESA and MSA occurs at many levels throughout central California and the Central Valley watershed. For example, NMFS is involved with State and Federal water operations (OCAP), levee management, and agricultural and municipal water diversions. Most of these activities have the potential to affect the availability and movement of water through the Delta.

- 2. *How do your department's activities contribute to achieving the remaining ten recommendations in the adopted vision?***

- a. *The Delta ecosystem must function as an integral part of the San Francisco Bay Estuary.***

Central Valley salmon, steelhead, and sturgeon depend on the Sacramento-San Joaquin Delta (Delta) and San Francisco Bay Estuary (Estuary) ecosystems for critical portions of their life stages. NMFS' Draft Recovery Plan for Central Valley salmonids (which has recently undergone co-manager review) identifies the Delta and Estuary as integral links to freshwater and marine ecosystems. Each freshwater, estuarine, and marine ecosystem is critical to the life cycle of anadromous fishes. The Delta and Estuary serve as a continuous pathway to unique Central Valley watersheds, such as the Sacramento River watershed, San Joaquin

River watershed, including east side tributaries of Mokelumne, Cosumnes, and Stanislaus Rivers.

Past actions taken to manage the Delta ecosystem while attempting to be responsive to competing freshwater demands between humans and fish have failed. NMFS is participating in the development of a long term solution to balance water demand and ecosystem conservation in the Delta. As part of the 20 member Steering Committee of the Bay Delta Conservation Plan (BDCP), NMFS is collaborating with state and federal water agencies and contractors, non-governmental environmental organizations, and state and other federal fish and wildlife agencies to develop a Habitat Conservation Plan covering activities over a 30-50 year period.

NMFS is also involved in the implementation of the CALFED Ecosystem Restoration Program (ERP), along with the California Department of Fish and Game (CDFG), and the U.S. Fish and Wildlife Service (USFWS). The multi-agency ERP is charged with restoration of ecosystem functions and processes in the San Francisco Bay-Delta estuary and its tributaries. Together the agencies are preparing the ERP Conservation Strategy (Strategy) for ERP Stage 2 implementation, which is currently focused on the Delta and Suisun Marsh. This Strategy is an ecosystem-based (rather than species-focused) approach to restoring the estuary. The Strategy priorities are: adequate flows into and out of the Delta, restoration of the aquatic food web, restoration of functional floodplain and tidal habitats, and reduction of environmental stressors. NMFS has also been involved in the development and review of several conceptual models as part of ERP's Delta Regional Ecosystem Restoration Implementation Plan (DRERIP). These models will be used for evaluation of ERP actions as well as evaluation of various actions described in the BDCP.

NMFS actively participates in regulatory processes through section 4(d), 7, and 10 of the Endangered Species Act (ESA), affecting availability and quality of water in the estuary and its tributaries with a focus on protecting fishery resources by recommending protective instream work windows, flows and water quality standards.

b. California's water supply is limited and must be managed well to be adequate for its future population, growing economy and vital environment.

NMFS recognizes the social, economic, and environmental constraints associated with the increasing demand for California's water supply. This is reflected in NOAA's mission to understand and predict changes in Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social, and environmental needs. The mission of the NMFS Sacramento Office is to provide stewardship of anadromous resources through conservation and enhancement of Central Valley anadromous fish populations and habitats using a science-based approach. In carrying out this mission, NMFS works with water resource managers throughout the State and makes recommendations at local, county, State, and Federal levels on management alternatives that benefit anadromous resources.

Specific Contributions:

CALFED Bay Delta Program: The California Bay Delta Authority Act names NMFS as an implementing agency of the CALFED Bay-Delta Program's ERP. The ERP is focused on advancing the restoration of the Delta ecosystem and its tributaries to support species recovery.

BDCP: NMFS is an ex-officio member of the BDCP Steering Committee, and we are actively engaged in the BDCP working groups and technical teams. We are involved to advise and guide the BDCP process to the successful development of a Habitat Conservation Plan and application for an Incidental Take Permit as provided under the section 10 of the ESA. Once a completed application is accepted, NMFS will discharge its responsibilities under both sections 7 and 10 of the ESA responding to the request for incidental take coverage for BDCP covered activities. NMFS is also a co-leader along with the USFWS and the Bureau of Reclamation (BOR) in the discharge of Federal agency responsibilities under NEPA and the related BDCP environmental impact statement (EIS). Our NEPA efforts are closely coordinated with the California Department of Water Resources and other affected agencies.

OCAP Consultation: NMFS has completed several formal ESA consultations, for the coordinated operation of BOR's Central Valley Project (CVP), and the State Water Project (SWP). Project related facilities and operations have significant effects on the flows and tidal patterns of the Delta. In concluding these consultations, NMFS provides recommendations, measures, or alternatives for the purpose of avoiding jeopardy of listed species and adverse modification of their critical habitat. NMFS also provides recommendations that may contribute to the long-term viability of salmonid and green sturgeon resources within the project area.

Anadromous Fish Restoration Program (AFRP): The Central Valley Project Improvement Act (CVPIA) established the Department of Interior's AFRP, to help restore fish habitat and double fish populations that are affected by the authorization and operation of the CVP. The program includes many subprograms for fish screens, habitat restorations, river flows, temperature control, and fishery monitoring. NMFS participates on numerous AFRP technical and management teams.

Levee Consultations: The Sacramento and San Joaquin River Flood Control Projects has approximately 1,600 miles of levees. These levees convey flood flows and water deliveries through the Delta, and have adversely affected fishery resources through their impact on natural river function, and riparian and flood plain habitat loss. NMFS reviews State and Federal levee repair and maintenance projects and programs to evaluate their effects on Federally listed anadromous fish species, their critical habitat and the essential fish habitat of Pacific salmon.

- c. ***The foundation for policymaking about California water resources must be the constitutional principles of “reasonable use” and “public trust;” these principles are particularly important to the Delta.***

This is primarily a state doctrine, but the concept of reasonable use of public trust resources is one which NMFS is very familiar as the Federal manager of the public’s living marine resources. NMFS promotes the reasonable, sustainable use of ocean fisheries while preventing overfishing, species declines, and habitat degradation. The management of California’s water resources is central to our efforts to sustainably manage certain resources such as salmon, steelhead, and sturgeon.

As a Federal agency, the NMFS role is to work cooperatively with State and local entities to achieve such common goals. The authority for such action is derived from the Fish and Wildlife Coordination Act (FWCA) of 1934, as amended. The FWCA provides the basic authority for NMFS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It also requires Federal agencies involved with water resource development projects to first consult with Federal and State fish and wildlife agencies regarding the impacts on fish and wildlife resources, and provide for measures to mitigate these impacts.

- d. ***The goals of sustainable use and conservation must drive all of California’s water management policies.***

NMFS recognizes that water must be used as efficiently as possible in order to protect all beneficial uses. Conservation and water reuse are critical in achieving the competing environmental, agricultural and economic needs of the State. Conservation of California’s water resources is central to NMFS’ efforts to sustainably manage marine resources such as salmon, steelhead, and sturgeon, and protect the ecosystems upon which they depend.

In the ESA, the term conservation means to use all methods and procedures that are necessary to bring and endangered or threatened species to the point at which the protective measures of the ESA are no longer needed. In order to effectively accomplish the conservation of a species, the ESA definition needs to be integrated into any conservation planning in the Delta. NMFS is in the process of developing a recovery plan for Federally listed salmon and steelhead in the Central Valley. The plan will identify threats to the species, provide a conservation strategy, and will include actions necessary to recovery listed species. NMFS expects to complete a public-review draft of for Central Valley salmon and steelhead in early October 2008.

- e. ***A revitalized Delta ecosystem may require reduced diversions, or changes in patterns of diversions upstream, within, and exported from the Delta.***

NMFS has worked successfully with water management agencies to modify patterns of diversions upstream for the necessary protection of fishery resources in several watersheds. These efforts are most clearly demonstrated in real-time, adaptive management processes

employed by the Sacramento River Temperature Task Force, and the Clear Creek Technical Team. NMFS also works with water districts, water companies, and State and Federal water managers and contractors to protect river and delta ecosystems through the construction and operation of diversion consolidation projects, fish screens, and water exchange and flow enhancement programs. NMFS strongly encourages a rigorous assessment of existing water diversions in the Delta, including demand analysis, alternative cropping patterns, expected conversions of agricultural users to municipal and industrial uses and likely demand patterns, as compared to ecosystem needs.

While reducing diversion may be necessary, water transfers can also help ameliorate the negative consequences of reduced diversions. It might be useful to collect and analyze data on transfers to evaluate how this market-driven aspect of deliveries is functioning.

NMFS, in line with other State and Federal fish and wildlife agencies, suggests that comprehensive evaluation of the State's water allocation and distribution system is necessary for making water management decisions that could affect the Delta. This should include and evaluation of Delta diversion in conjunction with water operations in the Sacramento San Joaquin River basins.

f. New facilities for conveyance and storage, and better linkage between the two, are needed to better manage California's water resources for both the estuary and exports.

NMFS has contributed to discussions and analyses for increased storage in the recent past through the CALFED Program. Other new facilities are being reviewed through the BDCP process. We are fully committed to participating in the BDCP process..NMFS has been unable to full participate in expanding storage proposals due to staff constraints. As we move toward recovery and in the face of climate change, NMFS will be supporting additional feasibility studies for reintroducing species to their native cold-water habitats above the rim dams. It is important that any additional storage proposals not preclude these opportunities for recovery.

g. Major investments in the California Delta and the Statewide water management system must integrate and be consistent with specific policies in this vision. In particular, these strategic investments must strengthen selected levees, improve floodplain management, and improve water circulation and quality.

We agree that major water management, levee, and ecosystem improvements in the Delta and upstream watersheds should address Delta Vision's goals and policies. Programs and projects should be designed and coordinated to meet the co-equal benefits of ecosystem protection, flood protection and water supply reliability. The BDCP and the ERP Stage 2 Conservation Strategy will provide information on where investments could be made to for the purpose of achieving these benefits. Levee management alternatives need to be developed for the Delta that that reduce flood damage, provide reliable water conveyance, and protect, restore, or create ecosystem features. Water diversion strategies need to be developed and prioritized that meet flood damage reduction and ecosystem goals; and

similarly, ecosystem enhancement measures need to consider the water use and flood protection priorities goals.

- h. The current boundaries and governance system of the Delta must be changed. An independent body with authority to achieve the co-equal goals of ecosystem revitalization and adequate water supply for California while also recognizing the importance of the Delta as unique and valued area, with secure funding and the ability to approve spending, planning and water export levels is essential.***

The challenge to coordinate the many layers of local, State, and Federal water management, flood reduction, and habitat improvement efforts that are ongoing or planned for the future, is significant. We see opportunities for changes to streamline regulatory processes and improve communication and coordination. Past experience suggests that an important challenge will be how to codify the State-Federal relationship in the governance structure and processes, and where the Federal agencies have sufficient resources to participate in any new governance system. An entity with sufficient leadership and land use authority is needed to provide a comprehensive framework for land use decision making, preserve the Delta's unique character and ensure adequate public safety while balancing the competing interests and needs in the Delta. Using the state conservancy model, it has been recommended by many parties, they have significant benefits for ensuring that restoration projects are implemented in an efficient way that is sensitive to landowners.

- i. Discouraging inappropriate urbanization of the Delta is critical both to preserve the Delta's unique character and to ensure adequate public safety.***

NMFS recognizes that poorly planned development of the Delta can place the region's critical functions at risk. NMFS routinely comments on development projects incrementally through ESA consultations, and through the FWCA. A more comprehensive review is necessary to preserve the Delta, and regional approach to land use decision making is necessary to assure protection of the ecological health of the Delta. Furthermore, development projects often occur incidental effects that cannot be fully offset onsite. A more complete approach could use mitigation and conservation banks as a tool to help achieve competing needs.

- j. Institutions and policies for the Delta should be designed for resiliency and adaptation.***

NMFS supports this principal and would add that institutions and policies need to include clearly defined sideboards, and triggers, that relate to a formalized decision making system with clearly articulated authorities and powers. The best available science and information needs to be continually reviewed and applied to make long-term sustainable policy and management decisions. For example, recent information on population growth, increased water demand, and climate change illustrate the fact that there will new and evolving pressures put on Delta resources, and that processes that are informed, resilient and capable of adapting to change will be most successful.

B. Agency Specific Questions:

1. What institutional and/or policy weaknesses have contributed to listing of Delta species? How might these weaknesses be addressed?

There has been too much demand placed on the resources of the Delta, with its current configuration and water supply. There is also a historic focus on single species management instead of ecosystem management that has contributed to decline of certain species, and a lack of adequate monitoring, protection and conservation measures to ensure the long-term viability of species and the ecosystems upon which they depend. Long-term, comprehensive, multi-species, and regional or ecosystem-based conservation planning mechanisms are needed to address these weaknesses. There needs to be a substantial shift in thinking away from a perspective that considers how much impact an ecosystem or a species can endure, while still meeting the other beneficial uses of the Delta, to a perspective that considers the beneficial uses and the ecological requirements and functional processes that are needed for the long-term viability of all of the native species of the Delta; all in a highly variable environment. The coordinated implementation of State and Federal species recovery plans should be considered a tool for improving the status of at-risk species in the Delta through ecosystem restoration. Species recovery plans need to address the underlying ecosystem problems and be institutionalized and integrated into policy, program, and project planning through the Delta.

2. Assessing experience, what is the effectiveness of these approaches in protecting the Delta ecosystem, and species of concern?

a. Project Mitigation

Mitigation is not always successful and may take many years to replace the habitat features that were affected. Regional planning with implementation of advanced conservation measures is often more effective and sustainable. If conservation/mitigation banks are chosen through such a process, they are an important tool for recovery of the species.

b. Environmental Water Account (EWA)

The EWA works for water reliability, but the benefits to NMFS' jurisdictional species and habitats are not clear. The concept of EWA had the potential to benefit and protecting listed species. Unfortunately, the funding for this effort was not adequate to meet the desired benefits for fish. The CALFED technical review panel for EWA determined that EWA was too small to make a measurable difference to species conservation. In fact, the species of primary interest declined in abundance during the years when EWA was being used.

c. Habitat Restoration

Habitat Restoration as identified in the ERP Stage 2 Conservation Strategy is critical to restore habitat diversity and heterogeneity, improve productivity of the Delta, and restore physical and ecological processes. Little habitat restoration has occurred in the Delta of the

type needed to address the loss of wetlands, physical processes and the underlying problems of reduced productivity. Large scale, strategically placed restoration projects need to be designed and implemented within prioritized migration and rearing habitats. In addition to the concept of strategic placement, restoration projects should address the problem of habitat fragmentation, and seek to create connected corridors for target species. To be successful the challenges of levee alignments and subsided lands behind levees needs to be addressed. The existing alignment of levees along important rearing and migration routes makes it difficult to effectively restore important habitat features such as shallow water intertidal areas. Adding to this issue is land subsidence. Flooded subsided lands do not create the high value shallow-water habitat that is needed to restore salmon and steelhead rearing habitat. This point was demonstrated by the natural breaching of Prospect Island in 2006, where thousands of predatory striped bass quickly colonized the flooded habitat because it more closely represented a lake habitat rather than a shallow inundated floodplain or intertidal zone. Levee relocation and breaching projects need to be engineered and constructed to avoid creating habitat for introduced species.

d. County Habitat Conservation Plans

Habitat Conservation Plans (HCPs) can be effective mechanisms for comprehensive habitat protection, preservation and conservation. There are a number of planning processes in and near the Delta (e.g., South Sacramento County, Eastern Contra Costa County, Yolo County, and Solano County HCPs; San Joaquin County Multi-Species Conservation Plan). For the most part, these plans are focused on terrestrial species and communities, with less emphasis and effectiveness for protecting aquatic areas or species of concern. In addition, NMFS is working with Stockton East Water District on an HCP for steelhead in the Calaveras River.

e. Species Recovery Plans

Species Recovery Plans are the roadmap for guiding the recovery of listed species. NMFS is currently preparing a recovery plan for Central Valley salmon and steelhead. A draft plan recently has been distributed for co-manager review and is anticipated to be made available for public review in early October 2008. The draft threats assessment and recovery actions have been made available to the BDCP planners.

NMFS places high priority in completing and implementing the plan. The plan will still provide for recovery and provide a roadmap for a establishing partnerships with other Federal, state, local agencies and non-governmental organizations and landowners to achieve recovery.

f. Managed, wetlands, reserves and preserves

The Yolo Bypass is an excellent example of how managed wetlands, reserves and preserves can be managed for co-equal benefits. The toe drains of the bypass function as a water source for agriculture, the configuration and location of the bypass functions as an important element of the Sacramento River Flood Control Project, and the seasonally flooded habitats provide excellent migration and rearing conditions that optimize the growth and survival of

juvenile salmonids. Improvements are needed to reduce stranding, and these are being evaluated as part of the BDCP process.

g. Other policy tools

Other tools are available that could play an important part in protecting and restoring Delta habitats including:

- ESA section 6 Habitat Conservation Planning and Implementation grants.
 - Conservation banking. This is an emerging tool for NMFS that has been used by the USFWS for many years to preserve, restore and create new habitats for listed species.
- Subsidies for compensating farmers for growing crops in a wildlife friendly manner (e.g. Postpone mowing/burning until after ground nesting birds have fledged, leaving residual grain for birds, set-aside buffers, planting trees for raptors, integrated pest management, etc.)
- Conservation easements (either permanent or for an extended period of time) to discourage or eliminate development and other wildlife-incompatible uses in sensitive areas.
- Flood easements
- Advance mitigation planning
- Conservation grants for land acquisition