



"The New Voice of Salmon"
1370 Auto Center Drive
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February 14, 2012

Mr. Charles R. Hoppin
Chairman
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814



Dear Mr. Hoppin:

Attached are comments of the Golden Gate Salmon Association (GGSA) in regard to the Water Board's consideration of revisions to the 2006 Bay-Delta plan. These comments are submitted in response to the Board's request for interested parties to provide information at the February 21st meeting for agenda item #5 (Informational review of the 2006 San Francisco Bay-Delta plan).

The Golden Gate Salmon Association is providing comments and recommendations on behalf of the California Salmon fishing industry.

Yours truly,

A series of five handwritten signatures in black ink, written from left to right. The signatures are: Zeke Grader, Roger Thomas, Dick Pool, Victor Gonella, and John Mc Manus.

Zeke Grader
Vice President

Roger Thomas
Chairman

Dick Pool
Secretary

Victor Gonella
President

John Mc Manus
Executive Committee

Attachment – GGSA Water Board Statement 2.21.2012

cc. Mr. Chuck Bonham, DFG
Mr. Ren Lohofener, USFWS
Dr. Jerry Meral, Natural Resources
Mr. Rod McInnis, NMFS



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**Comments of the Golden Gate Salmon Association
to
The State Water Resources Control Board
February 21, 2012**

Reference – February 25 letter from Tom Howard requesting salmon industry comments on the Water Board schedule for Delta Plan actions and the relationship of these actions to the BDCP.

The Golden Gate Salmon Association (GGSA) is pleased to offer its comments on the above subjects. GGSA is a 501 C3 corporation and represents the interests of the salmon fishing industry. This includes commercial salmon fishermen, recreational salmon anglers, seafood processors, seafood restaurants, ocean charter operators, river guides, coastal marinas, salmon equipment manufacturers, salmon equipment wholesalers and salmon equipment retailers. We are deeply concerned about the dramatic crash of the four Central Valley runs of Chinook Salmon in the last decade. We relate much of this loss to the water policies of the decade and particularly the impact of the increased Delta pumping. From the scientific evidence we have reviewed, it is apparent increased pumping has led to unacceptable levels of entrainment and related losses at the State and Federal pumping plants, exacerbated levels of predation on out-migrating salmon, and damaged the Bay-Delta Estuary - the ecosystem where salmon feed and grow before migrating to sea.

GGSA has reviewed the Board' Supplemental Notice of Preparation and the Notice of Scoping Meeting. That document indicates the Board intends to review the elements of the 2006 Bay Delta Plan and it asks for information on changes needed to protect the beneficial uses of the Bay Delta. It also asks for information on potentially significant environmental effects. GGSA will comment on both of these questions.

The [2006 Delta Plan](#) that the Water Board is considering updating now acknowledges the salmon doubling goal stated in the 1992 CVPIA. This states that water quality conditions

shall be maintained together with other measures in the watershed, sufficient to achieve a doubling of natural production of chinook salmon from the average production of 1967-1991, consistent with provisions of State and federal law. The average number of naturally spawning chinook salmon between 1967 and 1991 was around [375,000](#). If the doubling was accomplished we would be seeing averages of 750,000 salmon annually when averaged over ten years. Instead, over the last ten years we've seen 371,000 salmon returning annually when averaged. Obviously the doubling requirement is not being met. There are several reasons for this which we detail below. Chief among them is the impact of increased delta water exports, especially the roughly 16 percent increase that started in the year 2000 and continued through 2006.

One of the significant beneficial uses of the Bay Delta has been the traditional production and harvest of Central Valley salmon. These fish have historically provided tens of thousands of jobs, they have provided an economic engine for California communities from Santa Barbara to Crescent City – even Oregon and Washington coastal salmon ports - and they have fed millions of citizens with some of the most wholesome and nutritious protein sources available. Salmon have been a mainstay to California citizens starting with the gold rush. The gold rush miners lived on canned Central Valley salmon. GGSA contends that the iconic Central Valley salmon must be considered near the top of the list of beneficial uses of the San Francisco Bay Delta. The Central Valley salmon runs were originally second only to the Columbia River in their size and contribution to the economy.

Unfortunately, environmental damage in the Bay Delta system now threatens the very existence of these fish. In the past decade changes in the water operations of the Delta and the Central Valley have taken a heavy toll. There are four separate runs of Chinook salmon in the Central Valley. One only has to look at the population crash of each of these runs to understand the magnitude of the problem. The figures are:

	<u>Population drop since the most recent peak</u>
Fall Run salmon	91.1% drop since 2002
Late Fall Run	77.7% drop since 2002
Winter Run	90.8% drop since 2006
Spring run	84.7% drop since 2001

Environmental damage to the habitats that these fish need to survive is the root cause of these declines. The winter run is of special concern. In 1991 this fish was listed under the Endangered Species Act. At that time only 191 fish were left in the entire population.

A massive government effort was undertaken to recover them. Over \$1 billion was spent in Sacramento River improvements. By 2006 the population reached a modern record of 16,926 returning adults. Some were even talking of potentially delisting this fish. Environmental damage since 2006 to the spawning, rearing and migrating needs of the winter run fish have nearly wiped it out. In 2011 only 636 adult winter run fish returned to spawn. It is ironic that 2006 was the last time the Water Resources Control Board reviewed the Bay Delta plan. The GGSA strongly supports the comprehensive review of the plan by the Water Board and urges that the environmental damage caused principally by over pumping of the Delta estuary be reversed so that these salmon can once again thrive.

The crash of the fall run is also significant. This is the run that historically supported the commercial and recreational salmon fisheries of the state. In 2002 there were 1,490,468 fall run fish in the ocean. 720,600 were harvested and 769,868 returned to spawn. By 2010 virtually none were harvested and only 133,014 returned to spawn. This is the largest crash of a salmon run in the U.S. since the dams were built. The same Delta and river environmental problems and the loss of critical habitat were the cause of this crash. This crash severely damaged the salmon industry. In 2008 the federal government was forced to completely close down salmon fishing to prevent even nominal fishing from exacerbating the destruction wrought by the losses in Bay-Delta Estuary from flow/habitat related causes. The closure lasted the better part of three years. Thousands of people were thrown out of work and hundreds of businesses were forced to close their doors. Southwick and Associates, one of the most prominent outdoor economists in the country, estimated that the shut down caused a loss of 23,000 jobs and a \$1.4 billion loss to the California economy annually. The same study showed that if the salmon stocks are rebuilt, 94,000 jobs will be created and the economic contribution to the state will be over \$5 billion annually.

One should note. When the fishing seasons were closed the runs continued to steadily decline. This speaks to the environmental problems as the root cause rather than fishing.

The following paragraphs highlight where the environmental damage to the salmon has occurred and what kinds of steps are needed to offset the damage.

There are four fresh water life cycle stages of salmon. Each of these is currently impacted negatively by water flows, water temperatures and physical habitat degradation.

We will comment on each and also suggest actions by the Water Board that could mitigate the damage. The life cycle stages are:

- Adult Salmon Upstream Migration – The return of mature adult salmon, which are three or four years old, from the ocean to headwaters of the rivers or tributaries where they were originally hatched.
- Salmon Spawning and Egg Incubation – To successfully reproduce, adult salmon must find gravel beds free of silt with cold water (56 degrees or less) and 18 to 24 inches deep flowing rapidly over the gravel. Once the salmon lay their eggs in this gravel, the flow and temperature conditions must remain the same for 50 days or more while the eggs incubate.
- Fry and Juvenile Salmon Rearing – Once the fry emerge from the gravel they must find areas with abundant food (small insects and zooplankton) and areas of cover where they can hide from predators. These are usually shallow brushy areas with slow moving water at stream channel margins.
- Juvenile Salmon Outmigration As the fry and juvenile salmon grow, they will begin their downstream migration through physiological and environmental cues. This stage takes them all the way through the Delta and to the ocean. As they move down the rivers they need to hide in shallow shaded bushy covered areas along the river edges. Open water areas where the river banks are steep ripped levees take a heavy predator toll on the salmon. The current conditions in the Delta create the most severe problems of all because the smolts are pulled into open water areas loaded with predators.

Currently there are significant problems for the salmon in each of these life cycle areas. They include flow releases that don't match the salmon needs, high lethal temperatures in spawning areas, migration paths that provide no cover and smolts being pulled into predator filled open areas in the Delta. There are other problems where the adult salmon are blocked from reaching their spawning areas. It is the belief of the Golden Gate Salmon Association and its science advisors that the salmon runs cannot survive and rebuild under these current conditions. When these problems are combined with a bad water year, so few smolts reach the ocean that re-population is impossible. Unless conditions are changed, another severe drought or another cycle of poor ocean conditions will almost assuredly wipe out one or more of the runs.

GGSA along with its independent scientists and the fishery agencies are currently studying measures that can be taken at early dates to reverse the current fatal freshwater conditions. Many of the flow and temperature opportunities come within the sole jurisdiction of the Water Resources Control Board. We are very encouraged to see the progress being made on the San Joaquin system. However, the current problems for the salmon and the salmon industry are mostly on the Sacramento River side.

We are aware the Board is considering more focus on the Sacramento River side. We feel this is very appropriate particularly since there are very few actions underway which will rebuild the salmon runs including actions by the BDCP. We strongly encourage Sacramento River, Sacramento tributary and Delta actions by the Water Board. There are many changes needed to rebuild the salmon populations. Some of the larger physical construction projects are very expensive and take years to complete. Change by the Water board to improve flows and temperatures in two or three years could possibly do more good than anything else.

Last fall GGSA undertook a project to identify 20 or 30 actions that can be completed at early dates without extraordinary costs that will kick start the rebuilding of the Fall Run and wild salmon stocks. The project studies are proceeding well and are scheduled to be complete by summer. Our scientists have identified a number of flow and temperature change projects that will be included. We do not yet have the full salmon benefits quantified for these, but we are listing some of the projects here for the Board's reference. By summer we will have them completed with benefits. If there is interest by the Board, we will be happy to share our studies and conclusions.

GGSA Juvenile Outmigration Projects

Project D.22 Delta Entrainment

By far the most significant salmon rebuilding project on the entire list is reduction of the entrainment of salmon smolts in the Delta. In the late winter and spring up to 50 million smolts start down the Sacramento River and attempt to migrate through the Delta to reach Suisun Bay where they are safe. Numerous studies show that up to 90% of them never make it. They are drawn south towards the pumps and perish to predators. Salmon are not the only victims of this problem. Sacramento Splittail, Threadfin Shad, American Shad and young striped bass are all victims of the same fate. The staggering numbers of these fish that end up in the salvage facilities of the state and federal pumps speaks to the

severity of the environmental entrainment problem. In 2011 over 11 million fish were counted in the salvage tanks of the two pumping facilities between January and September. Most of these fish die in the salvage attempt. Some of the salvage figures are:

Sacramento Splittail	8,985,009 fish
Threadfin Shad	742,850
American Shad	514,921
Striped Bass	496,601
White Catfish	100,373
Chinook Salmon	35,560
Steelhead	1,642
Delta Smelt	51
Green Sturgeon	14

It is widely recognized that the pump salvage counts are only a small fraction of the total loss in the Delta. The loss factors range from 5 to 10 times the salvage count. Acoustical tag studies on salmon at Clifton Court Forebay and the federal pumping plant show more than 90% loss to striped bass predation. These fish never reach the salvage tanks. Although the proximal cause of the death is attributable to predation, the south Delta export facilities have artificially created ideal conditions for predation.

The plain fact is that there is severe environmental damage in the Delta estuary because there is too much water moving south in the winter and spring of the year. The tiny salmon smolts cannot overcome the strong pull of the pumps in their efforts to reach Suisun Bay. The salmon populations cannot be rebuilt until these environmental problems are corrected and flows are reduced. GGSA strongly supports the 2009 staff recommendations that the Board further review (1) Delta Outflow Objectives, (2) export/import objectives, (3) Delta Cross Channel Gate Closure Objectives, (4) Suisun Marsh objectives, (5) Potential new reverse flow objectives for Old and Middle Rivers, and (6) potential new floodplain habitat flow objectives.

Project D.23 Delta Flows

GGSA is studying flow recommendations for the Delta. We are being assisted by the Bay Institute in developing a proposal. Our recommendations will parallel those previously issued by the Water Board and those recommended by the Department of Fish and Game.

Project D.1. Pulse flows

Springtime reservoir releases are not currently coordinated with salmon releases from the hatcheries. Strong pulse flows, as the hatcheries release salmon, push the smolts rapidly down the river past predators. Strong pulse flows also increase the turbidity of the river making it hard for predators to find the smolts. GGSA proposes that better pulse flow coordination is needed at Shasta, Oroville, Folsom and Camanche reservoirs.

Project D.5 Yolo Bypass Flooding.

The flooded Yolo Bypass has significant benefits for salmon. The flooding period should be extended by notching the Freemont Weir with removable gates. Salmon will benefit with reduced stranding, increased growth reduced Delta entrainment and increased smolt production.

GGSA Salmon Spawning and Egg incubation Projects

Project B.7 American River Cold Water

GGSA proposes that cold water be held behind Folsom Dam so that American River spawning and rearing temperatures are maintained at 56 degrees or below from September through early November. Pre-spawning mortality of returning adults and egg and fry mortality is near 100% when the cold water is released from Folsom Reservoir in the spring and summer to meet pumping needs. Currently in the fall, only warm water is left.

Project B.8 Feather River Cold Water

GGSA proposes that cold water be held behind Orville Dam and that releases be managed so that Feather River spawning and rearing temperatures are maintained at 56 degrees or below from September through early November. In addition, Oroville releases should be managed such that salmon redds are not left high and dry following fall run spawning.

Project B.9 Upper Sacramento River Cold Water

GGSA proposes that more cold water be held behind Shasta Dam and releases be managed so that the prime upper river spawning and rearing temperatures are maintained at 56 degrees or below down the river to the Red Bluff Dam from September through early November. Shasta releases should also be managed to ensure that salmon redds are not left high and dry following fall run spawning.

GGSA Adult Salmon Upstream Migration Projects

Project A.1 Upstream Migration Failure at the Cross Channel Gates

In October the Delta cross channel gates are normally wide open. At the same time the state and federal pumps are running at full capacity. The heavy flows through the gates creates strong attraction flows for adult Mokelumne fall run salmon and diverts these fish through the cross channel gates into the Sacramento River. The Mokelumne River and the Mokelumne Hatchery are thereby deprived of the brood stock they need for salmon production. Delta salinity is maintained by holding the cross channel gates wide open so the fresh water from the Sacramento River suppresses Delta saltwater intrusion. This practice destroys the adult returns to the prime spawning areas of the Mokelumne River and destroys the returns to the Mokelumne hatchery which is the most modern and efficient salmon hatchery in the state. GGSA urges the Water Board to correct this problem by regulating the water flows and closing the cross channel gates for 10 to 14 days annually in October. This was done in October of 2011 and the Mokelumne River received a record all time high count of adult salmon. This is the most significant short term action that can be taken for salmon rebuilding in the entire Central Valley.

GGSA Comments on the Relationship between Bay Delta Plan Actions and the BDCP

The Golden Gate Salmon Association and the salmon industry are very disillusioned with the Bay Delta Conservation Plan. When its impact on salmon is analyzed, we find it does very little towards recovery of these fish. Further, it does not meet the requirements of The California Water Conservation Act of 2009 (SB1).

SB1

Chapter 2 Section 85320(b) says The BDCP shall not be incorporated into the Delta Plan and the public benefits associated with the BDCP shall not be eligible for state funding unless the BDCP does all of the following: (A) A reasonable range of flow criteria, rates of diversion and other operational criteria required to satisfy the criteria of a natural community conservation plan as provided in subdivision (a) of Section 2820 of the Fish and Game code, and other operational requirements and flows necessary for recovering the Delta ecosystem and restoring fisheries under a reasonable range of hydrologic conditions which will identify the remaining water available for export and other beneficial uses.

GGSA finds little or no salmon benefits in the BDCP habitat conservation plan. If fact there is strong evidence that under the circumstances of increased water exports and continued operation of the current pumps, serious further damage will be done to the runs. We conclude that the current BDCP habitat conservation plan should not be accepted by the Delta Stewardship Council and incorporated into the Delta plan. We further conclude that the fishery agencies which have to approve the BDCP plan if it is to proceed will not be able to approve the plan when it is evaluated against the NCCP and CEQA acceptance criteria.

Federal law requires that a habitat conservation plan does not appreciably reduce the likelihood or the survival or the recovery of a listed species in the wild. California state law requires that recovery be aided by the project. The federal CVPIA Act requires that wild salmon populations be doubled and California SBI requires that the Delta Plan contain conditions for salmon doubling.

The BDCP plan lists eight habitat restoration actions in the Delta region that it states will recover covered species. They are (1) Yolo Bypass Fishery Enhancement, (2) Tidal Habitat Restoration, (3) Seasonally Inundated Floodplain Restoration, (4) Channel Margin Habitat Enhancement, (5) Riparian Habitat Restoration, (6) Grasslands Communities Restoration, (7) Vernal Pool Complex Restoration and (8) Restore Non Tidal Marsh. One of these, the Yolo Bypass, can aid salmon recovery. Most of the others do little or nothing for salmon. In addition, they take decades to complete and cost billions. Any positive impact is dependent on future pumping rates, Delta flows and saltwater intrusion. Nowhere in the plan does the BDCP acknowledge these potential negatives and analyze the “effects” of them. Neither does the BDCP compare these actions to other recovery options which could occur sooner and be much more effective. Finally, nowhere does the BDCP acknowledge and evaluate the single greatest action needed to recover salmon, which is increased through Delta flows.

GGSA has several concerns with the habitat based actions.

1. Many of the salmon provisions of these actions are unproven and are not linked to any recovery analysis. To be accepted, it must be demonstrated scientifically that they will not further harm the species and will recover the listed species.
2. To be accepted as conservation actions, they must be linked to the “effects” of the project. There is no such linkage and there is no complete analysis of the “effects” of the project on salmon in the plan.

3. The BDCP actions are restricted to the Delta. The salmon runs cannot be recovered with Delta projects alone. The “effects” of the proposed project reach far upstream of the Delta and must be analyzed and addressed if salmon are to be recovered and a plan is to be accepted.

A number of “effects” are missing. The project proponents are seeking more water available for export. The amount of water exported, the timing and location of those exports, and the resulting conditions in the Delta will have a dramatic impact on salmon recovery. There is no analysis of those “effects” in the plan. The BDCP Entrainment Analysis released in August, 2011 indicates that exports will be made from both the new North Delta facility and the existing South Delta facilities (pumping up to 84% of the water in some dry years). In the public meeting of September 27th the BDCP announced that the South Delta facilities will only operate in emergencies or for maintenance at the North facility. The “effects” difference of these two alternates on salmon will be very large and needs documentation. The project operations will also impact a number of upriver practices that determine if salmon survive or will be recovered. Absent analysis of these “effects” with mitigating actions, GGSA believes the project will likely fail its stated objectives and must be rejected by the Delta Stewardship Council and the fishery agencies. SB-1, the California water legislation bill passed in 2009 indicates the BDCP shall not be incorporated into the Delta Plan and the public benefits associated with the BDCP shall not be eligible for state funding unless the BDCP recovers the Delta ecosystem and restores fisheries under a reasonable range of hydrologic conditions. Failing approval here eliminates the possibility of public funding.

Some of the “effects” analysis that are needed for salmon include:

- The unimpaired flow of water through the Delta present and future.
- The salinity of the Delta under a range of future pumping rates.
- The quantity, timing and upriver sources of the water exported in wet and dry years.
- The amount of water exported in wet and dry years from the new North facility and the current South facilities.
- The impact of upriver reservoir releases on needed flows and temperatures of salmon spawning and rearing areas.
- Reservoir practices for the storage of cold water necessary for successful salmon spawning.

GGSA concludes that the Salmon runs will not be recovered under the current BDCP plan. In fact, if the current plan proceeds, it is almost assured that the runs will further decline. Delays and interference caused by the BDCP will also make it difficult to get the right rebuilding projects underway.

Even more alarming than the scientific issues are the costs of the BDCP Delta mitigation measures. They range from a staggering \$3.0 to \$3.7 billion dollars. Annual maintenance, operations and other costs add \$35 to \$50 million per year. When GGSA asked the BDCP where this money would come from, the answer was “undetermined”. The final page of Chapter eight in the plan titled, Costs and Funding Sources, states, “The PREs have not committed to pay for any BDCP costs beyond the conveyance component and substantial public and other sources of funding are expected to contribute to the cost of implementing the elements of the plan.” Federal courts have repeatedly found such vague and voluntary actions insufficient to meet the standards of the Federal Endangered Species Act.

In summary, GGSA urges the State Water Resources Control Board to initiate and undertake its comprehensive review of the Bay Delta Plan. This should include studies of the water flows and other salmon habitat needs in the Delta, the Sacramento River and its tributaries. We recognize that this will take a period of years but interim decisions where improvements can be implemented could be very helpful to salmon recovery. We believe Water Board actions coupled with several key rebuilding projects represent the best available options for recovery of the Central Valley salmon.

We appreciate the Board’s consideration of our views.