The intakes, though massive in size, are a comparatively small part of the proposed enormous water conveyance facilities. The two Tunnels have actually increased in size from a proposed diameter of 33 feet in 2012 to what is now the Preferred Alternative, Alternative 4. Under Alternative 4, the two Tunnels would have an internal diameter of 40 feet and an external diameter of 44 feet.

The reduction in the number of intakes is an obvious subterfuge intended to make the proposed project look smaller in response to federal agency concerns even though the ultimate 15,000 cfs carrying capacity of the Tunnels is preserved. In fact, the two Tunnels have actually been ***increased*** in diameter from 33 feet to 40 feet. Consequently, the Delta Water Tunnels project has not been downsized at all. Instead, the Administrative Draft fails to provide the "accurate, stable, and finite project description" required by CEQA and the accurate project description required by NEPA and ESA. By this same subterfuge, the BDCP process unlawfully segments, piecemeals, and chops up the project into different phases by seeking approval now based on intake capacity when the intent is to actually operate in the future at the capacity of the Tunnels. That also violates the ESA, NEPA, and CEQA. This violation is explained in more detail in our comment letter of August 13, 2013. (January 14, 2014 FOR comment letter, Attachment 2).

## VIOLATIONS OF THE ESA

### I) VIOLATION OF SECTION 7 OF THE ENDANGERED SPECIES ACT

The Sacramento River creates habitat for dozens of endangered and threatened species. Five of these species include the *Sacramento River Winter-Run Chinook Salmon, the Central Valley Spring-Run Chinook Salmon, the Central Valley Steelhead, the Southern Distinct Population Segment of the North American Green Sturgeon, and the Delta Smelt.* 50 C.F.R. § 17.11. Realizing the reliance these fish have on the Sacramento River, USFWS and NMFS designated the Delta and the lower stretch of the Sacramento River as critical habitat for each species.[7] USFWS and NMFS designate habitats as critical when they contain the primary

[7] 50 C.F.R. § 226.204 (Sacramento River Winter-Run Chinook Salmon), 50 C.F.R. § 226.211(k)(5)(i) (Central Valley Spring-Run Chinook Salmon), 50 C.F.R. § 226.211(l)(5) (Central Valley Steelhead), 50 C.F.R. § 226.219(a)(3) (Southern DPS of NA Green Sturgeon), and 50 C.F.R. § 17.95–e–Fishes–Part 2 (Delta Smelt).

constituent elements (PCEs) needed for a species to survive and recover. 50 C.F.R. § 424.12(b). PCEs of the Delta and Sacramento River include "physical habitat, water, river flow, and salinity concentrations" (59 FR 65256) and "water quality and quantity" (70 FR 52488). *River flow* includes the magnitude, frequency, and duration of flow; *water quality* includes temperature and salinity. (74 FR 52300).

The Endangered Species Act (ESA) commands federal agencies to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat . . . ." 16 U.S.C. § 1536(a)(2). Because the BDCP will affect listed species and designated critical habitat, NMFS and USFWS must issue BiOps determining whether the BDCP will jeopardize a listed species or destroy or adversely modify designated critical habitat. 50 C.F.R. § 402.14(a). To make these determinations, NMFS and USFWS must "evaluate the current status of the listed species or critical habitat," "the effects of the action," and "cumulative effects on the listed species or critical habitat." 50 C.F.R. § 402.14(g)(2)-(3).

### A) Current Status of Listed Species and Critical Habitat

Although USFWS and NMFS designated the Delta and lower portions of the Sacramento River as critical habitat, dams and diversions have degraded many of the habitats' PCEs. As a result of these degradations, the five listed fish species struggle to survive in the critical habitat designated for their survival and recovery. The BDCP identifies degradations of the critical habitat which each species encounters in the Delta and Sacramento River. These modifications include physical habitat loss and increased water temperature, which continue to worsen as the climate changes.

#### 1) Physical Habitat Loss

The Sacramento River was once rich with spawning, rearing, and staging habitat for Delta species. The unimpaired Sacramento River flow inundated key spawning habitat and floodplains, providing access to productive ecosystems of abundant food sources for growing fish. Today, levees and dams prevent flooding and restrict flows, resulting in lower water levels and significantly less inundated habitat. As reported by the BDCP, "[a]ccess to much of the

historical upstream spawning habitat for winter-run Chinook salmon has been eliminated or degraded by artificial structures (e.g., dams and weirs) associated with water storage and conveyance, flood control, and diversions and exports . . . ." (Plan, 2A.3-9). These developments have had a disastrous effect on the Winter-Run Chinook Salmon. ". . . Shasta Dam reduced the winter-run Chinook salmon ESU from four independent populations to just one." (Plan, 2A.3-9). Habitat modification has had similar impacts on the other listed species. For example, "[m]ost historical adult staging/holding and spawning habitat for Central Valley steelhead is no longer accessible to upstream migrating steelhead." (Plan, 2A.6-9). The Delta Smelt's habitat may be reduced "because of land reclamation, channelization, and riprapping of historical intertidal and shallow subtidal wetlands," but "[t]he extent to which such habitat loss may be limiting the population is unknown." (Plan, 2A.1-11). Dams render 44.2% of Green Sturgeon spawning habitat inaccessible. (Plan, 2A.8-7).

These five endangered and threatened species of fish rely heavily on the Sacramento River to provide irreplaceable habitat for spawning, rearing, and adult staging. Development and diversions have caused sharp declines in populations, demonstrating that these fish adapt poorly, if at all, to interference with their habitat. The remaining habitat must be preserved and expanded in order to support Delta species' survival and recovery.

**2) Increased Water Temperature**

Historically, the cool Sacramento River water provided the needed temperatures for coldwater fish species migrating from the Pacific Ocean. Cool precipitation and snowmelt maintained the river's lower temperatures despite warm ambient conditions. Today, Sacramento River temperatures rise above suitable levels. The Draft Recovery Plan for Central Valley Salmonids identifies elevated water temperatures as a cause of habitat decline. (Pg. 3). The BDCP admits that "[e]xposure to seasonally elevated water temperatures may occur as a result of reductions in flow, as a result of upstream reservoir operations . . . ." (Plan, 2A.3-17). Dams and reservoirs restrict the natural flow of the Sacramento River, resulting in weakened flows downstream of the dam. With less water flowing in the river, the ambient conditions have a larger impact on the lower volume of water, causing it to warm faster. In addition to reservoir

operations, diversions also weaken river flow and contribute to warming the remaining river water.

The increasing water temperatures have adversely impacted critical habitat in the Delta and the species that rely on it. "Spring-run and winter-run Chinook salmon are highly vulnerable to increased temperatures upstream of the Delta." Draft BDCP, (5.A.2.0-2). "Increasing temperatures will result in less spawning habitat for anadromous fish." (Plan, 5.A.2.0-2). "Higher water temperatures can lead to physiological stress, reduced growth rates, prespawning mortality, reduced spawning success, and increased mortality of salmon [and steelhead]." (Plan, 2A.3-17; 2A.6-13) (internal citations omitted). The Green Sturgeon also struggles with increasing temperature. "The Feather River is likely to have supported significant spawning habitat for the green sturgeon population in the Central Valley before dam construction." (Plan, 2A.8-6). Today:

> [w]ater temperatures in the Feather River may be inadequate for spawning and egg incubation as the result of releases of warmed water from Thermalito Afterbay. Warmed water may be one reason why neither green nor white sturgeon are [sic] found in the river during low-flow years. It is not expected that water temperatures will become more favorable in the near future and this temperature problem will continue to be a factor affecting habitat value for green sturgeon . . . .

Draft BDCP, (2A.8-9 – 8.10) (internal citations omitted). The Delta Smelt "are sensitive to exposure to elevated water temperatures, and high temperatures are known to reduce delta smelt survival and interfere with spawning." (Plan, 2A.1-12). The Delta Smelt is considered to be the most vulnerable of these species to increasing temperatures. (Plan, 5.A.2.0-2). Whereas the other four species will return to the cool waters of the Pacific Ocean, the Delta Smelt lives in the Delta exclusively and cannot escape its rising temperatures. Conditions in the Delta continue to decline for coldwater species. As temperatures rise, the suitability of the critical habitat plummets, threatening Delta species' survival and recovery.

### 3) Climate Change

Climate change will intensify deterioration of critical habitat and expose fish species to higher temperatures in the Delta. As stated in the BDCP, "[d]ue to climate change, some areas in northern California may experience more rainfall, but California generally will be 15 to 35% drier by 2100." (Plan, 2.C-7). "Simulated projections indicate decline in precipitation for the Sacramento region for the rest of the 21st Century, especially the latter half of the century." (Plan, 2.C-7). Snowmelt is also a major source of water for the Sacramento River. Reduced snowmelt necessarily results in lower water levels and reduced flow in the Sacramento River. According to predictions in the BDCP, "[s]nowpack volumes are expected to decline 25% by 2050." (Plan, 2.C-10). The resulting lower flows in the Sacramento River will affect, not only the river itself, but also the Bay Delta which relies on Sacramento River flows. As sea level rises, water from the Pacific Ocean and San Francisco Bay will push further into the Delta, increasing salinity level and drastically impacting water quality.

Maintaining healthy X2[8] locations will require increasingly stronger Delta outflows. According to the BDCP:

> [f]or the existing salinity conditions, the X2 will move downstream about 1 km for each 10% increase in Delta outflow. Therefore, to move the X2 positions downstream 2 km would likely require about 20% more outflow. For existing conditions, an outflow of about 7,100 cfs is required to maintain X2 at Collinsville (km 81); the required Delta outflow for the projected LLT sea level rise of 45 cm likely would require about 8,520 cfs (1.2 x 7,100 cfs). An outflow of about 11,400 cfs is required to maintain X2 at Chipps Island (km 75); the required Delta outflow for the projected LLT sea level rise of 45 cm likely would require about 13,680 cfs (1.2 x 11,400 cfs).

(Plan, 5.A.2-91). The Delta Smelt relies almost exclusively on the inner Delta as its primary habitat. Encroaching seawater will impact the water quality of the Delta. It remains unclear whether the Delta Smelt could tolerate higher salinity levels in the Delta.

Climate change will worsen habitat loss and already-increasing water temperatures. With less precipitation and snowmelt, water levels in the Sacramento River will continue to decline. As water levels decline, less habitat will remain inundated and accessible to fish. Also, the water temperatures will rise faster, especially with the warming ambient conditions. Without adequate

[8] "X2 is the distance, expressed in kilometers from the Golden Gate Bridge, at which channel-bottom water salinity (isohaline) is 2 ppt." (Plan, 5.A.2-91).

preservation and restoration measures for Delta critical habitat, these fish face dim prospects for survival and recovery.

### B) The Effects of the Action

"When considering the designation of critical habitat, [USFWS and NMFS] shall focus on the principal biological or physical *constituent elements* within the defined area that are essential to the conservation of the species." 50 C.F.R. § 424.12(b) (italics added). USFWS and NMFS must determine and list the primary constituent elements with the critical habitat description. 50 C.F.R. § 424.12(b). PCEs "are essential to the conservation of a given species and [] may require special management considerations or protection." 50 C.F.R. § 424.12(b). Without these PCEs, there would be no reason to designate habitat as critical. Accordingly, when considering the effects of a proposed action on critical habitat, NMFS and USFWS must evaluate the proposed project's effects on critical habitat PCEs. Concerning the BDCP, NMFS and USFWS must evaluate the BDCP's potential impacts on PCEs in the Delta and Sacramento River: physical habitat, water temperature, river flow, and salinity.

#### 1) Physical Habitat and Water Temperature

##### *(a) CM1 Effects on Physical Habitat and Water Temperature*

"The primary purpose of *Conservation Measure 1 Water Facilities and Operation* is to construct and operate a facility that improves conditions for covered species and natural communities in the Delta while improving water supply." (Plan, 3.4-1). Great tension exists between these goals. The more water left in the river for fish necessarily means a lower diversion; conversely, a greater diversion will result in less water kept in the river for biological goals. The BDCP claims to attempt to balance these goals with decision trees, which establish minimum flow criteria for the Sacramento River. Under these criteria, BDCP claims the proposed north Delta intake facility will only be permitted to divert water when the Sacramento River flow exceeds 5,000-7,000 cfs (depending on the month). (Plan, 3.4-20).

These minimum flow levels of 5,000 and 7,000 cfs are dangerously low. According to the United States Geological Survey, the average Sacramento River flow at Freeport, California in

October is 12,200 cfs.[9] This means that operating at the constant low level pumping during October, which has a minimum flow requirement of 7,000 cfs, will, on average, decrease the Sacramento River's flow by 4,200 cfs. This represents a flow reduction of 34%, which will necessarily result in lower water levels, further deteriorating the PCEs of physical habitat and water temperature. With lower water levels, the Sacramento River will inundate less land, denying listed species access to physical habitat. Moreover, the lower water levels will expose listed species to higher temperatures. CM1 operations will worsen declining PCEs in the Delta and Sacramento River.

***(b) CM2 Effects on Physical Habitat and Water Temperature***

CM2: *Yolo Bypass Fisheries Enhancement Plan* includes plans to restore and enhance the Yolo Bypass as habitat for covered species. The Yolo Bypass is a floodplain along the Sacramento River, west of the City of Sacramento. In the unusual circumstances when Sacramento River flows exceed 55,000 cfs, water spills over the Fremont Weir and into the Yolo Bypass before reaching and flooding the City of Sacramento. The goal of CM2 is restoration of high quality habitat for fish species struggling in the Sacramento River. (Plan, 3.4-41). When inundated, floodplains often demonstrate a significant increase in biomass. (Plan, 3.4-41). Increases in production of phytoplankton and dipteran larvae provide abundant food sources for juvenile fish. (Plan, 3.4-41). The Knaggs Ranch Experimental Agricultural Floodplain Pilot Study 2011-2012 Year One Overview reports "remarkable growth rates" for salmon reared in the Yolo Bypass. (Pg. 10).

Yolo Bypass inundation results from significant flood events, not typical overtopping events at Fremont Weir. (Plan, 3.4-44). Conditional on these flood events, Yolo Bypass inundation is too infrequent to consistently support salmonid development. To take advantage of the productive floodplain habitat, CM2 includes plans to modify Freemont Weir to allow flooding at flows lower than 55,000 cfs, the current threshold for Yolo Bypass flooding. (Plan, 3.4-53). The modified weir would allow flows of 1,000 cfs to 6,000 cfs into the Yolo Bypass at a lower Sacramento River flow (25,000 cfs rather than 55,000 cfs under existing conditions).

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9 http://nwis.waterdata.usgs.gov/nwis/monthly/?referred_module=sw&site_no=11447650&por_11447650_2=2209860,00060,2,1948-10,2010-03&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_list

(Plan, 5C.A-72). The target diversion range for the Yolo Bypass is 3,000 to 6,000 cfs of Sacramento River water. (Plan, 5C.A-58).

Even if the virtually always dry Yolo Bypass could serve as a fish habitat, the Sacramento River flow will rarely be high enough to inundate the Yolo Bypass while satisfying the biological needs and diversions of the Sacramento River. Diverting up to 6,000 cfs into the Yolo Bypass could result in as much as 3 feet of reduction in river stage in the Sacramento, although understanding of how notch flows would affect river stage is incomplete. (Plan, 5C.5.4-6). This would radically worsen the deterioration of physical habit and water temperature PCEs. The Sacramento River currently lacks adequate water levels needed to provide access to physical habitat and preserve cool river temperatures. A reduction of as much as three feet in river stage would provide less access to habitat and increase water temperatures, further diminishing the conservation value of the habitat.

Additionally, the restored Yolo Bypass will serve as poor habitat for adult and juvenile fish. The Preliminary Report on the Experimental Agricultural Floodplain Habitat Investigation at Knaggs Ranch on Yolo Bypass states that when "flood waters leave main river channels to flow over adjacent floodplains, they slow, spread out, and warm . . . ." (Pg. 4) (internal citation omitted). Warm water temperatures and low water levels are the same conditions deteriorating PCEs in the Sacramento River and Delta. Further, species which enter the Yolo Bypass would endure increased losses due to stranding. (Plan, 3-3, 3-6, 4-5). Instead of improving habitat conditions, CM2 will intensify the decline of physical habitat and water temperature conditions.

**2) River Flow**

The State Water and Central Valley Projects (SWP/CVP) divert so much water from the south Delta that they reverse Delta flows. Instead of flowing to the Bay, some Delta channels flow toward the Clifton Court Forebay. In addition to confusing migratory fish following attraction flows and olfactory cues (Plan, 5.5.3-2, 4-20, 3-32), these reverse flows capture fish, especially juveniles and smaller species, and entrain them in the SWP/CVP intake facilities. According to the Draft BDCP, north Delta intake facilities are expected to result in "substantial reductions in entrainment and associated adverse effects associated with operation of the south Delta intakes." (Plan, 3.4-7).

However, implementation of USFWS and NMFS BiOps has already mitigated SWP/CVP entrainment. According to the BDCP, "[i]mplementation of south Delta export pumping restrictions under the USFWS (2008a) BiOp has considerably limited the entrainment loss of adult delta smelt." (Plan, 5.5.1-27) (internal citations omitted). Entrainment poses an even lower threat to the anadromous species. The BDCP cites entrainment losses of the Sacramento River Winter-Run Chinook Salmon population at .1% in 2007 and 5% in 2001. (Plan, 5.5.3-15). Similarly, "entrainment is not thought to be a major stressor" to Green Sturgeon. (Plan, 5.5.8-14). Entrainment is not as problematic as it was prior to 2008. The 2008 USFWS BiOp and 2009 NMFS BiOp limit pumping in the south Delta, minimizing entrainment and associated impacts on listed species. (EIR/EIS, 11-162-63).

These facts undermine the proposed benefit of reducing entrainment. As admitted in the Draft BDCP, entrainment is no longer a serious threat to listed species due to USFWS and NMFS BiOps. Thus, the room for improvement with dual conveyance operation appears minimal at best. In fact, constructing and operating north Delta intake facilities may expose listed species to increased entrainment risks in the Sacramento River. According to the Delta Science Independent Review Panel, "the validity of the primary assumption that there will be no entrainment of fish at the north Delta diversion (NDD) should be evaluated. In reality, there will be some fish lost at the transfer point . . . ." (BDCP Effects Analysis Review, Phase 3, Pg. 37-38). Nonetheless, the Draft BDCP fails to assess the likely entrainment and impingement impacts caused by North Delta diversions.

CM2 is meant to mitigate of impacts caused by CM1 by providing an alternative migration route in the Yolo Bypass, allowing smolt to avoid entrainment or impingement associated with the north Delta intake pumps. (Plan, 5.F-16). According to the BDCP, few juvenile fish would migrate through the Yolo Bypass to the Delta. "Of the Sacramento Basin population of Chinook salmon smolts that reach the Delta, an estimated 3 to 10% (depending on the run) would migrate via the Yolo Bypass . . . ." (Plan, 5.F-iii). This demonstrates that very few fish would reap the benefits of having access to the Yolo Bypass. Instead, most of the fish, adult or juvenile, would have to migrate through the Sacramento River and survive radically worsened conditions for the benefit of a small population of juveniles.

### 3) Salinity

The Sacramento River minimum flow requirements under CM1 will interfere with Delta outflow requirements. Under State Water Resources Control Board Decision 1641 (D-1641), diversions may not shift X2 "east of Chipps Island (75 river kilometers upstream of the Golden Gate Bridge) during the months of February through May" or "east of Collinsville (81 kilometers upstream of the Golden Gate Bridge) during the months of January, June, July, and August." (D-1641, Pg. 150). As cited above, a Delta outflow of 11,400 cfs is required to maintain X2 at km 75 under current conditions. Once sea level rises by the predicted 45 cm, maintaining X2 at km 75 will require a Delta outflow of 13,680 cfs.

For April, the BDCP minimum flow bypass is 5,000 cfs. The San Joaquin River outflow into the Delta is, on average, 7,100 cfs during April.[10] This means that the combined flow of the Sacramento and San Joaquin Rivers, ignoring evaporation and seepage, will be, on average, 12,100 cfs. By the LLT of the project, this Delta outflow of 12,100 cfs would fail to reach the necessary 13,680 cfs required to maintain X2 at km 75 by 1,580 cfs. To make matters worse, by the LLT of the project, precipitation and river flows will be drastically lower, and the Delta outflow would probably face a deficit much higher than 1,580 cfs.

Consequently, the increased diversions and inadequate bypass flow requirements will ensure that there is insufficient Delta outflow to preserve water quality in the Delta. Without sufficient Delta outflow, saltwater will intrude and increase salinity levels in the bays and Delta. The increased salinity will impair the water quality PCE. The Delta Smelt has adapted to a range of salinity which reflects seasonal change. (59 FR 65256). Salmonids rely on specific salinity levels to transition between freshwater and saltwater environments. (70 FR 52488). The proposed BDCP operations threaten the sensitive ecological balance in the Delta and bays, relied on by listed species. It remains unclear whether Delta species could adapt to disturbed salinity levels in the Bay Delta.

## C) Cumulative Effects

### 1) Adverse Modification of Critical Habitat

[10] http://wdr.water.usgs.gov/wy2011/pdfs/11303500.2011.pdf

ESA regulations direct the consulting fish and wildlife agency to "[f]ormulate its biological opinion as to whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat." 50 C.F.R. § 402.14(g)(4). Joint NMFS and USFWS regulations define *destruction or adverse modification* to mean "a direct or indirect alteration . . . adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical." 50 C.F.R. § 402.02.[11][12] Accordingly, NMFS and USFWS BiOps must determine whether the BDCP will cumulatively, adversely modify the physical or biological features, or PCEs, of the Sacramento River and Delta.

Consider the implementation of CMs 1 and 2. If the government implements CM1 at capacity diverting 6,000-15,000 cfs from the Sacramento River while implementing CM2 at capacity, diverting 6,000 cfs from the Sacramento River, a range of 12,000 to 21,000 cfs will be diverted from the Sacramento. Such a massive diversion would drastically worsen declining PCE values in the river. Water levels would plummet, inundating less land, increasing water temperatures, and allowing saltwater intrusion. As discussed above, the restored Yolo Bypass under CM2 would include the same inadequate conditions causing species to decline in the Sacramento River. Although CM2 is meant to mitigate the effects of CM1, CM2 would intensify the adverse effects of CM1. Attempts to restore habitat with insufficient water quantity will spread thin an already-limited resource, leaving these listed species with inadequate habitat. Diverting up to 6,000 cfs from the Sacramento while operating the proposed intake facility will ensure that neither the Sacramento nor the Yolo Bypass maintains the PCEs needed to support the survival and recovery of listed species.

Reduced pumping in the south Delta could decrease entrainment and associated effects of pumping, but the NMFS and USFWS BiOps have already minimized entrainment and associated effects. Moreover, maintaining natural flows in the south Delta does nothing to improve conditions in the Sacramento River, which will sustain the largest impacts of the project. Instead,

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[11] The Ninth Circuit invalidated part of the agencies' definition of "destruction or adverse modification". *Gifford Pinchot Task Force v.U.S. Fish and Wildlife Service*, 378 F.3d 1059, 1070-71 (9th Cir. 2004). However, the court did not review or invalidate the definition cited above.

[12] NMFS and USFWS have proposed joint regulations re-defining "destruction or adverse modification" which retain focus on "physical and biological features". *See* 70 FR 27060.

the dual conveyance system will interfere with Sacramento River flow, creating more entrainment and impingement impacts in the Sacramento.

These BDCP operations will invariably result in the adverse modification of Delta and Sacramento River PCEs. Physical habitat will be lost due to diversions causing lower water levels; water temperature will increase, creating harsher conditions for struggling species; and salinity levels in the Delta will rise as Delta outflow decreases. The loss of these PCEs would drastically diminish the conservation value of the Sacramento River and Delta. The Sacramento River and Delta would cease to provide the irreplaceable habitat that NMFS and USFWS sought to protect. Accordingly, implementation of the BDCP would adversely modify designated critical habitat, in violation of Section 7 of the Endangered Species Act.

**2) Arbitrary and Capricious Authorization of Incidental Take**

Under the Administrative Procedure Act, courts reviewing agency decisions shall "hold unlawful and set aside agency actions, findings, and conclusions found to be . . . *arbitrary, capricious*, an abuse of discretion, or otherwise not in accordance with law . . . ." 5 U.S.C. § 706 (emphasis added). "A Biological Opinion is arbitrary and capricious if it fails to consider the relevant factors and articulate a rational connection between the facts found and the choice made." *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 698 F.3d 1101, 1121 (9th Cir. 2012) (internal quotations omitted). In this case, the BDCP BiOps must articulate a rational connection between the project's cumulative impacts and the decision of whether the BDCP will adversely modify critical habitat. However, due to the pervasive uncertainty in the Draft BDCP CMs, there is insufficient science to support the conclusion that the BDCP would not adversely modify critical habitat. Concluding that there would be no adverse modification of critical habitat based on the Draft BDCP and EIR/EIS would be arbitrary and capricious.

The Delta Science Program Independent Review Panel (DSPIRP) and the Delta Independent Science Board (DISB) Draft BDCP and EIR/EIS reviews highlight the unsupported conclusion that the CMs will benefit covered species. According to the DSPIRP, "many of the critical justifications behind the supposed benefits of the conservation measures are highly uncertain." (BDCP Effects Analysis Review, Phase 3, Pg. 17). "Approximately 72% of the

objectives for covered fish could not be fully evaluated at this time due to insufficient information." (BDCP Effects Analysis Review, Phase 3, Pg. 21). According to the DISB:

> the analysis regarding habitat restoration assumes there will be increases in phytoplankton production and that these increases will be transferred up the food web to covered species. This largely ignores an equally likely result that the added biomass of phytoplankton will be consumed by [invasive] clams, which have had substantial effects on phytoplankton abundance and species composition throughout the Delta.

(Review of the Draft BDCP EIR/EIS and Draft BDCP, Pg. B-39). The BDCP assumes that restored habitat will benefit covered species, not invasive species which threaten covered species. "Some of these other species, such as nonnative predators and invasive clams, may also benefit from these expanded habitats. Benefits for the other species may dampen any benefits of the habitat restoration for covered species." (Review of the Draft BDCP EIR/EIS and Draft BDCP, Pg. B-41).

Further, it is unclear which habitats the BDCP would restore. As stated by the DISB, the "priority of habitats to be restored is not indicated, so it is not clear if the most critical habitats will be first on the list." (Review of the Draft BDCP EIR/EIS and Draft BDCP, Pg. B-39). In *Gifford Pinchot*, the Ninth Circuit held that mitigation efforts outside critical habitat cannot offset adverse effects to designated critical habitat. 378 F.3d at 1076 (9th Cir. 2004). Without detailed descriptions of the proposed restoration measures, it is impossible to ensure that the BDCP would restore critical habitat instead of habitats with low conservation values.

As a result of this pervasive uncertainty, there is insufficient evidence to support a conclusion that the cumulative BDCP effects will not adversely modify critical habitat. Accordingly, any finding that the BDCP would not adversely modify critical habitat will be arbitrary and capricious. The ESA commands NMFS and USFWS to "*insure* that any action . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat . . . ." 16 U.S.C. § 1536(a)(2) (emphasis added). An arbitrary and capricious finding that the BDCP would not adversely modify critical habitat will fail to *insure* the protection of critical habitat, violating the commands of the ESA.

**D) CONCLUSION**