

In the State Water Resources Control Board

Hearing to Consider a Petition to Change the Place of Use involving Water Right Permits 16478, 16479, 16481, 16482 and 16483 (Applications 5630, 14443, 14445A, 17512, and 17514A) of the California Department of Water Resources

and

Water Right Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, and 15735 (Applications 13370, 13371, 234, 1465, 5638, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9366, 9367, 9368, 15764, 22316) and License 1986 (Application 000023) of the United States Bureau of Reclamation

Written Testimony of Defenders of Wildlife

April 27th, 2008

Introduction

The California Department of Water Resources (“DWR”) and U.S Bureau of Reclamation (“Bureau”) (together “the agencies”) have filed a Petition for Change to Consolidate the State Water Project, Central Valley Project and Friant Authorized Places of Use (“Petition”). The requested change to the agencies’ outstanding water right licenses is necessary for implementation of the 2009 Drought Water Bank (“DWB”) in California. As stated in the Petition, “the changes will allow DWR and [the Bureau] to more effectively and efficiently utilize the operational flexibility of the combined SWP and CVP service areas to minimize the potential impacts of the current critical water shortage within California (Petition Supplement, Page 1). Water right holders may change the point of diversion, place of use, or purpose of use, but such changes may only be made only upon permission by the State Water Resources Control Board (“State Water Board”). Cal Water Code § 1701.

DWR and the Bureau have specifically requested that the proposed consolidation in place of use be effective for two years. This request is perplexing because the agencies have described the DWB as a one-year project in their respective environmental documents. The Bureau states at least four times in its Draft Environmental Assessment for the 2009 Drought Water Bank (“EA”) that the DWB is a one year program (EA, Pages 37, 62, 73 and 87). DWR states in the CEQA Addendum that the DWB would be effective only for 2009 and acknowledges that the CEQA Addendum analyzes the amounts that sellers would ultimately be willing to transfer *only* in 2009 (CEQA Addendum, Page 10).

The agencies’ departure from a one-year timeframe and request for a two-year change in the applicable water rights is troubling. As discussed below, implementation of the DWB will likely result in multiple significant environmental impacts and adverse affects to

listed species, particularly the federally listed giant garter snake (*Thamnophis gigas*) (“GGS”). In its Biological Opinion for the 2009 Drought Water Bank, dated April 14, 2009 (“BiOp”), the U.S. Fish and Wildlife Service (“USFWS”) recognizes that the Bureau has consulted on rice fallowing and crop forbearance water transfers “approximately one-half dozen times” over the past 8 years, suggesting a need for more comprehensive planning if the Bureau is pursuing a multi-year water transfer program:

Although transfers of this nature were anticipated in our biological opinion on the Environmental Water Account, that program expired in 2007 and, to our knowledge, no water was ever made available to EWA from rice fallowing or substitution. The need to consult with such frequency on transfers involving water made available from rice fallowing or substitution suggests to us a need for programmatic environmental compliance documents, including a programmatic biological opinion that addresses the *additive effects on giant garter snakes of repeated fallowing over time, and the long-term effects of potentially large fluctuations and reduction in the amount and distribution of rice habitat upon which giant garter snakes in the Sacramento Valley depend* (BiOp, Pages 1-2, emphasis added).

Nevertheless, the Petition on its face states a two-year term. In addition to petitioning the State Water Board to change the State Water Project and Central Valley Project (“SWP/CVP”) places of use, the agencies are also in effect petitioning for long-term water transfers. The Petition involves a transfer of water for a period of longer than one year and is therefore governed by the long-term transfer provisions of the California Water Code, section 1735 et seq.

The board, after providing notice and opportunity for a hearing, including, but not limited to, written notice to, and an opportunity for review and recommendation by, the Department of Fish and Game, may approve such a petition for a long-term transfer where the change would not result in substantial injury to any legal user of water and would not unreasonably affect fish, wildlife, or other instream beneficial uses.

A petition to change authorized places of use must “include all information reasonably available to the petitioner, or that can be obtained from the Department of Fish and Game, concerning the extent, if any, to which fish and wildlife would be affected by the change, and a statement of any measures proposed to be taken for the protection of fish and wildlife in connection with the change.” CA Water Code § 1701. The State Water Board also retains independent public trust authority to protect fish and wildlife in its water right permitting duties. The agencies have failed to meet the standards set forth in sections 1701 and 1736. As referenced below, additional information not provided by the agencies suggests that the DWB will unreasonably affect salmonids and GGS. The State Water Board should invoke its authority under sections 1701 and 1736, in addition to its independent public trust authority, to place conditions on the affected permits and licenses to ensure protections for fish and wildlife.

We incorporate by reference the following documents:

- Defenders of Wildlife's comments on the DWB EA/FONSI, dated March 19, 2009
- Comments of Butte Environmental Council, the California Sportfishing Protection Alliance, the Center for Biological Diversity, and the California Water Impact Network on the DWB EA/FONSI, dated March 19, 2009
- Defenders of Wildlife's comments on the Addendum to the Environmental Water Account EIR/EIS, dated January 16, 2009

The Requested Change Will Unreasonably Affect Fish and Wildlife

Giant garter snake

The DWB is likely to adversely affect the GGS, a listed threatened species under the federal Endangered Species Act ("ESA") and California Endangered Species Act ("CESA"). GGS is largely dependent on flooded rice fields in the project area, thousands of acres of which will be fallowed under the DWB. According to the Bureau's Biological Assessment for the DWB ("BA"), crop idling will affect 67,000 acres and force many GGS individuals to relocate:

The proposed fallowing or crop conversion of up to approximately 67,260 acres of rice fields to alternate crops in the action area will reduce the availability of stable wetland areas, which are important to stable giant garter snake populations, for one year. The proposed fallowing or conversion to alternate crops of up to approximately 67,260 acres of rice fields in the action area may result in an increased risk of predation on individual giant garter snakes. Rice fields provide cover for snakes to escape predators. Ditches, canals, and other agricultural conveyances typically do not provide much cover in the form of emergent vegetation. Predators such as large fish, egrets, and herons are more prevalent in ditches and canals and are known to prey on giant garter snakes.

The proposed project may reduce suitable giant garter snake foraging habitat by as much as 20 percent from the 10 year average of all rice crops in the action area for a one year period. As a result, we anticipate that some individuals may have to relocate from an area that may have been their foraging area in prior years. Although individual snakes that must relocate are likely to be subject to greater risk of predation as they move to find new suitable foraging areas, we anticipate that some individuals will be able to successfully relocate in suitable habitat elsewhere within the area. Young snakes (2 years and less) that need to relocate may be particularly vulnerable to the increased predation risk. A large reduction in available habitat and foraging opportunities compared to recent years (2007 and 2006 – 11,867 and 9,273 acres respectively) may adversely affect foraging success and breeding condition if some individuals are

unable to relocate. Young snakes would be anticipated to be at greater risk.

We do not know and have no information with which to estimate the size or age-class structure of the resident snake population in the action area. Whatever it is, it is a product of annual fluctuation in acreage planted to rice prior to 2008, in combination with other physical and environmental factors. Some individuals are likely to be displaced and will need to relocate elsewhere. Of these, we expect that some will successfully relocate, and that some may be lost to predation or other forms of mortality caused by loss of foraging opportunities, either through competition with other individuals or loss of body condition and failure to thrive, particularly young snakes.

The GGS was found originally in the Central Valley from Sacramento to Buena Vista Lake near Bakersfield.¹ It is a wetland-adapted snake that was common near lakes and rivers on the riparian flood plain of the Central Valley. By 1971, the loss of wetland habitat, coupled with agricultural practices such as tilling, grading, burning, harvesting, weed abatement, and grazing, eliminated the GGS from the southern San Joaquin Valley.² The present distribution consists of 13 disjunct populations from just south of Chico to Stockton.³ Introduced predators such as bass (*Micropterus* sp.), sun fish (*Lepomis* sp.), and catfish (*Ictalurus* sp.) have limited the range of habitat available to GGS by narrowing corridors of dispersal, and forcing them into warmer waters and ephemeral seasonal wetlands. While most of the native habitat has been lost for this species, some populations have been discovered utilizing irrigation canals, check levees, and rice fields in the American and Butte Basins.⁴

The life history of GGS suggests that areas which experience summer flooding and winter drying provide optimal habitat.⁵ The most abundant feature in the snake's range currently exhibiting these characteristics is flooded rice fields. The snake has used flooded rice fields for breeding from July to August when the need for an inundated area with crop cover is highest (Greg Hansen *pers. comm.* 2008). Indeed, flooded rice fields have become such an important alternative habitat that, without them, the species would

¹ Fitch, H. S. 1940. A biogeographical study of the ordinoides artenkreis of garter snakes (genus *Thamnophis*). Univ. Calif. Pub. Zool. 44:1-150.

² Ellis, S. R. 1988. Five-year status report: giant garter snake. California Department of Fish and Game, Inland Fisheries Division, Sacramento, California.

³ Sorenson, P. 1993. U. S. Dept. Interior. Final Rule. Determination of threatened status for the giant garter snake. Federal Register No. 201, Vol. 58:54053-54066.

⁴ Hansen, G. M. 1986. Status of the giant garter snake (*Thamnophis couchi gigas*) (Fitch) in the southern Sacramento Valley during 1986. Final Report, California Department of Fish and Game, State of California. Standard Agreement No. C-1433. 28 pp.

⁵ Czech, Brian 2006. Complexities of Conservation: the Giant Garter Snake, Endangered Species Bulletin, Vol. XXXI No. 3, p. 33.

be at serious risk of extinction (Greg Hansen *pers. comm.* 1994). Habitat degradation and fragmentation continues to compromise existing populations of the Giant Garter Snake.

The ESA imposes both substantive and procedural requirements on all federal agencies to carry out programs for the conservation of listed species and to insure that their actions are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536. *See NRDC v. Houston*, 146 F.3d 1118, 1127 (9th Cir. 1998) (action agencies have an “affirmative duty” to ensure that their actions do not jeopardize listed species and “independent obligations” to ensure that proposed actions are not likely to adversely affect listed species). As discussed below, the Bureau has not demonstrated that its proposed actions are not likely to adversely affect GGS.

Wylie and Amarello conducted a study of GGS in the Colusa Basin Drainage Canal in Reclamation District 108. When they initiated the project in 2003, all adjacent fields on the south bank of the study site were actively growing rice. While many other areas were drained during the summer when snakes were active, rice fields remained flooded during this important time for GGS. In 2004 and 2006, Wylie and Amarello found that many GGS captured in the drain eventually migrated to the rice fields. In 2006, most of the fields on the south bank of Colusa Drain were dry or being converted to wetlands and the only remaining rice fields were south of the study area. Wylie and Amarello concluded that the lack of rice fields as suitable summer habitat adjacent to the drain could have accounted for decreased populations of the snake in that area.⁶

Hansen conducted GGS surveys for several years. In recent years, he has found approximately 300 individuals in the Sacramento Valley and only 1-3 individuals in the San Joaquin Valley. (Greg Hansen *pers. comm.* 2008). The major distinguishing characteristic between the two geographic regions is that the San Joaquin Valley lacks drainage canals with adjacent flooded rice fields. The abundance of Giant Garter Snakes in areas with this feature suggests that the combination of drainage canals and rice fields provides significant habitat value for the GGS. (Greg Hansen *pers. comm.* 2008). Continued fallowing of rice fields in the proposed project area will lead to fragmenting of this crucial habitat and a decimation of the Giant Garter Snake population similar to what has been observed in the San Joaquin Valley.

According to some estimates, GGS rely on rice fields for approximately 50% of their aquatic habitat needs. Given that declining numbers of GGS have been found during preceding years in drainage canals and rice fields in the Northern Sacramento Valley, where the project area is located, *any* significant reduction in the area, much less the

⁶ Wylie, G. and Amarello, M., 2006, Results of 2006 Monitoring for Giant Garter Snakes (*Thamnophis gigas*) For the Bank Protection Project on the Left Bank of the Colusa Basin Drainage Canal in Reclamation District 108, Sacramento River Bank Protection Project, Phase II, Prepared for Environmental Planning Section, U.S. Army Corps of Engineers, Sacramento District, p. 13.

67,260 acres of proposed fallowing, can be expected to adversely affect GGS residing in the project area through reduction of habitat.

The Bureau has not appropriately assessed adverse affects on GGS or developed a mitigation program to compensate for reduced GGS habitat. The Bureau has proposed in the 2009 Drought Water Bank Biological Assessment (“BA”) to increase the block sizes of idled crop acreage from 160 acres to 320 acres. Page 6-6 of the Environmental Water Account EIR/EIS, upon which the DWB mitigation program is predicated, lists a 160 acre limitation on idled rice parcels as a mitigation measure to protect Giant Garter Snake. The unexplained reversal of this mitigation measure in the BA is arbitrary and not based on sound science. An undated report by Glenn Wylie and Michael Casazza describes the results of a Giant Garter Snake monitoring study which tracked the home range of the species in the Colusa National Wildlife Refuge. According to the report:

Analysis of movements showed home ranges that varied from 1-35 ha with an average of 18 ha...This reduced movement also means snakes were less exposed to mortality factors such as predators and vehicles...One individual...was killed by a predator (likely an otter) shortly after it was released with its radio implant.

The 18 hectare average home range calculates to 44.5 acres, which is substantially smaller than the 320 acre blocks proposed for fallowing. Even the high end of the home range reported in the study, 35 hectares, or 86.5 acres, is markedly smaller. This study presents substantial evidence indicating that the GGS home range is between 40 and 90 acres, and that forcing it to travel farther than this range may result in mortality. The Bureau must explain the removal of the block size limitation as a mitigation measure. The Bureau must also explain why the change in block size will not result in a take of Giant Garter Snake or adversely affect the species pursuant to 16 USC § 1536 and 50 C.F.R. 402.12(a). The BiOp corroborates the conclusion that GGS home ranges are smaller than the crop idling blocks proposed by the agencies:

Researchers with the USGS estimated the home range size of GGS at four study sites. Home range estimates were derived from telemetry data using the adaptive kernel method (Wylie 1998b; Wylie *et al.* 2000). Home range estimates averaged a minimum of 1.8 hectares (4.5 acres) to a maximum of 376.6 hectares (930.7 acres) (N=73). In 2000, the home range estimate at the Colusa National Wildlife Refuge, was reduced by more than 800 hectares (2,000 acres) (N=9) from previous estimates. This reduction is believed to be attributed to the maintenance of water in ditches adjacent habitat, including a recently restored wetland area (Wylie, *et al.* 2000). These managed areas apparently met the biological needs of the snakes, where permanent wetland and sufficient habitat reduces giant garter snake movements. There the home range (N=8) was estimated to be 4 to 82 hectares (10 to 203 acres) for an area 234.7 hectares (580 acres) in size.

USGS-WERC has also estimated home range sizes for giant garter snakes and determined median ranges that are generally less than 100 acres in size, demonstrating that giant garter snakes typically use relatively small areas, even though they are capable of moving longer distances (up to five miles in a few days). Home range sizes for giant garter snakes at the Gilsizer Slough study site varied from approximately 5 acres to 212 acres with a median of 39.5 acres. In the Natomas Basin, home range sizes varied from 32 acres to 214 acres with a median of 86 acres. USGS-WERC has also studied giant garter snakes at the Colusa National Wildlife Refuge. Home range sizes at Colusa NWR have been highly variable. Home range sizes estimated for year 2000 ranged from 2.5 to 81.5 acres with a median of 42 acres and for 2001 from 7.4 to 427.5 acres with a median of 59.3 acres. These home ranges are about half the size of those estimated for the study period 1996-97 (home ranges varied from 3.2 acres to 2792 acres with a median of 103.8 acres). USGS-WERC concluded that home range sizes decrease as more summer water became available to the snake on the refuge in the later study period.

The BA does not include a baseline status of the GGS in the project area. As the BA states (section 6), “very little data exists on the distribution and occurrence of the Giant Garter Snake in ricelands.” Without a baseline status of the species, the Bureau is simply shooting in the dark to develop appropriate mitigation measures. In fact, *neither the BA nor the BiOp contains a baseline status of the species*, although one is required by USFWS regulations. 50 CFR 402.14. The project contemplates fallowing 20 percent of total active rice fields in Butte, Glenn, Colusa, Sutter and Yolo Counties, where GGS is known to persist. As stated in the BA (section 6), the implementation of 320-acre block sizes will very likely adversely affect the Giant Garter Snake by forcing many individuals “to relocate elsewhere.” It is expected that “some will successfully relocate, and that some may be lost to predation or other forms of mortality caused by loss of foraging opportunities, either through competition with other individuals or loss of body condition and failure to thrive, particularly young snakes.”

The monitoring program and effects study proposed by the Bureau in the EA will undoubtedly help determine the baseline status of the Giant Garter Snake in the Sacramento Valley and contribute to overall understanding of the effects of crop idling programs on the species. However, such actions do not fully mitigate the take of GGS that will result if the project is implemented as proposed. The limitation of block sizes to 160 acres must be reinstated. The overall amount of fallowed acreage in the project area must be reduced to significantly less than 20 percent. Finally, a compensatory mitigation program is required to fully mitigate the take. USFWS must determine the amount of habitat to be acquired in a biological opinion. As discussed below, the State Water Board has expansive authority to impose these conditions for the affected permits and licenses.

Central Valley Chinook salmon and Steelhead trout

The DWB is likely to adversely affect salmonids, including Central Valley Winter-run Chinook and Spring-run Chinook, which are listed as endangered and threatened, respectively, under the ESA. According to a DWR report, groundwater extraction in the Sacramento Valley may reduce stream flow, an essential habitat condition for these fisheries:

Groundwater seepage from the Sacramento Valley into the Sacramento and Feather rivers is a major contributor to in-stream flow. Increases in groundwater extraction without coordinated recharge efforts could reduce or reverse this seepage, causing depletion of in-stream flow.⁷

DWB project actions, including groundwater substitution transfers, may affect listed salmonids in the Sacramento River and tributaries through stream flow reduction. Anecdotal evidence indicates that groundwater substitution transfers executed during the 1994 Drought Water Bank resulted in mortality to salmonids in the Sacramento River and tributaries. DWR and the Bureau have not included information in the Petition about impacts to the above-referenced salmonids, nor included proposals to safeguard these species during operation of the DWB. The agencies have proposed a monitor-as-you-go program for the DWB, and this is inappropriate considering the potential risk for salmonids from over-extraction of the Sacramento Valley aquifers.

Comments of Butte Environmental Council, the California Sportfishing Protection Alliance, the Center for Biological Diversity, and the California Water Impact Network found the following deficiencies in the DWB EA/FONSI related to groundwater pumping:

The EA fails to describe significant characteristics of the aquifers that the 2009 DWB proposes to exploit. These characteristics are relevant to an understanding of the potential environmental effects associated with the 2009 DWB's potential extraction of up to 340,000 acre feet ("af") of groundwater. Environmental Water Account 2003 EIS/EIR Record of Decision at p. 11; Draft Supplemental Environmental Water Account 2007 EIS/EIR at p. ES-6; 2009 Drought Water Bank addendum 12/17/08 at p. 2, 3, 9; 2009 Drought Water Bank addendum 3/4/09 at p. 2, 3, 9. First, the draft EA/FONSI fails to describe a significant saline portion of the aquifer stratigraphy of the 2009 DWB area. According to Toccoy Dudley, former Groundwater Geologist with the Department of Water Resources and former director of the Butte County Water and Resources Department, saline groundwater aquifer systems of marine origin underlie the various freshwater strata in the northern counties of Butte, Colusa, Glenn, and Tehama ("northern counties"). The approximate contact between fresh

⁷ McManus, Dan et al. Sacramento River Basinwide Water Management Plan. California Department of Water Resources' Northern District, January 2003, page 13.

and saline groundwater occurs at a depth ranging from 1500 to 3000 feet. (Dudley 2005).

Second, the EA fails to discuss the pressurized condition of the down-gradient portion of the Tuscan formation, which underlies the northern counties Project area. Dudley finds that the lower Tuscan aquifer located in the Butte Basin is under pressure. “It is interesting to note that groundwater elevations up gradient of the Butte Basin, in the lower Tuscan aquifer system, are higher than the ground surface elevations in the south-central portion of Butte Basin. This creates an artesian flow condition when wells in the central Butte Basin are drilled into the lower Tuscan aquifer.” (Dudley 2005). The artesian pressure indicates recharge is occurring in the up-gradient portions of the aquifer located along the eastern margin of the Sacramento Valley.

Third, the EA fails to describe the direction of movement of water through the Lower Tuscan Formation that underlies the northern counties. According to Dudley: “From Tehama County south to the city of Chico, the groundwater flow direction in the lower Tuscan is westerly toward the Sacramento River. South of Chico, the groundwater flow changes to a southwesterly direction along the eastern margin of the valley and to a southerly direction in the central portion of the Butte Basin.” (Dudley 2005).

Fourth, the draft EA fails disclose that the majority of wells used in the Sacramento Valley are individual wells that pump from varying strata in the aquifers. The draft EA incorrectly asserts that, “Groundwater users in the basin pump primarily from deeper continental deposits.” EA at p. 24. Contradicting this assertion, the EA later states that, “Fifty percent of the domestic wells are 150 feet deep or less,” for the Natomas Central Mutual Water Company. (EA at p. 30). Why is the information not provided for other areas of the Sacramento Valley? The thousands of domestic wells in the northern counties are as susceptible as the wells in the Natomas Central MWC. The EA expands the discussion regarding Natomas Central MWC on page 39 stating that, “Shallow domestic wells would be most susceptible to adverse effects. Fifty percent of the domestic wells are 150 feet deep or less. Increased groundwater pumping could cause localized declines of groundwater levels, or cones of depression, near pumping wells, possibly causing effects to wells within the cone of depression. As previously described, the well review data, mitigation and monitoring plans that will be required from sellers during the transfer approval process will reduce the potential for this effect.” As the latter statement makes clear, the Bureau hopes that the individual mitigation and monitoring plans will reduce the potential for impact, but there is no assurance in the EA to the thousands of well owners in the Sacramento Valley that it will reduce it to a level of insignificance. The Coalition

questions the adequacy of individual mitigation and monitoring plans and suggests that an independent third party, such as USGS, oversee the mitigation and monitoring program. After the fiasco in Butte County during the 1994 Drought Water Bank and with the flimsy, imprecise proposal for mitigation and monitoring in the 2009 DWB, the agencies lack credibility as oversight agencies.

Fifth, the draft EA fails to provide recharge data for the aquifers. Professor Karin Hoover, Assistant Professor of hydrology, hydrogeology, and surficial processes from CSU Chico, finds that, “Although regional measured groundwater levels are purported to ‘recover’ during the winter months (Technical Memorandum 3), data from Spangler (2002) indicate that recovery levels are somewhat less than levels of drawdown, suggesting that, in general, water levels are declining.” According to Dudley, “Test results indicate that the ‘age’ of the groundwater samples ranges from less than 100 years to tens of thousands of years. In general, the more shallow wells in the Lower Tuscan Formation along the eastern margin of the valley have the ‘youngest’ water and the deeper wells in the western and southern portions of the valley have the ‘oldest’ water,” adding that “the youngest groundwater in the Lower Tuscan Formation is probably nearest to recharge areas.” (Dudley 2005). “This implies that there is currently no active recharge to the Lower Tuscan aquifer system (M.D. Sullivan, personal communication, 2004),” explains Dr. Hoover. “If this is the case, then water in the Lower Tuscan system may constitute fossil water with no known modern recharge mechanism, and, once it is extracted, it is gone as a resource,” (Hoover 2008).

All of these aquifer characteristics are important to a full understanding of the environmental impacts of the 2009 DWB because there are numerous indications that other aquifer strata associated with the Lower Tuscan Formation are being operated near the limit of overdraft and could be affected by the 2009 DWB. (Butte County 2007). The Bureau has not considered this important historic information in the draft EA. According to Dudley, the Chico area has a “*long term average decline in the static groundwater level of about 0.35 feet-per-year.*” (Dudley 2007) (Emphasis added.) Declining aquifer levels are not limited to the Chico Municipal area. This trend of declining aquifer levels in Chico, Durham and the Cherokee Strip is illustrated in a map submitted with this comment letter. (CH2M Hill 2006).

Declining groundwater elevations have been observed specifically in Butte County. A 2007 Butte Basin Groundwater Status Report describes the “historical trend” in the Esquon Ranch area as showing “seasonal fluctuation (spring to fall) in groundwater levels of about 10 to 15 feet during years of normal precipitation and less than 5 feet during years of drought.” The report further notes: “Long-term comparison of spring-to-

spring groundwater levels shows a decline of approximately 15 feet associated with the 1976-77 and 1986-94 droughts. (Butte Basin Water 14 Users Association, 2007.). The 2008 report indicates that, “The spring 2008 groundwater level measurement was approximately three feet higher than the 2007 measurement, however it was still four feet lower than the average of the previous ten spring measurements. Fall groundwater levels are approximately nine feet lower than the averages of those measured during either of the previous drought periods on the hydrograph. At this time it appears that there may be a downward trend in groundwater levels in this well.” (Butte Basin Water Users Association, 2008.) Thus, “*it appears that there may be a downward trend in groundwater levels in this well.*” *Id.* (emphasis added).

Finally, Several of the entities listed as recipients of DWB water, including the State Water Contractors, Westlands Water District, and Kern County Water Authority, have sued to challenge the USFWS December 15, 2008 Biological Opinion for Smelt. However, the Petition also claims that all water exported at the SWP and CVP pumping plant is pumped consistent with the criteria and protective measures contained in the biological opinions for the protection of Sacramento River Winter-run Chinook salmon, Delta smelt, spring-run Chinook salmon, and steelhead. The State Water Board should impose a condition allowing it to reopen the affected permits and licenses if USFWS changes the Biological Opinion for Smelt pursuant to a court order in the aforementioned lawsuits.

The State Water Board Should Place Conditions on the Permits and Licenses to Protect Wildlife

The State Water Board has used its authority under the California Water Code and public trust doctrine broadly in the past to impose conditions on water right permit and licenses for the protection of fish and wildlife. The State Water Board has imposed conditions on crop fallowing programs in the past. In Order No. WR 2009-0003-DWR, the State Water Board imposed several conditions on DWR’s plan to fallow agricultural land (rice, corn and tomatoes) in the Delta in order to transfer the conserved water. Some of the conditions were imposed for aquatic and riparian wildlife protection (see page 6 of attached order).

In Order WR 2008-0012-DWR, the State Water Board approved a water right application with conditions for conservation of giant garter snake, stating in section 22 of the Order that “compliance with the ESA and CESA will be required for affected giant garter snakes and additional *habitat compensation* or species protection measures may be developed in consultation with the USFWS and DFG (emphasis added).”

In Corrected Order No. WR 2008 – 0014, the State Water Board, anticipating new information and a changing regulatory framework, reserved the authority to review and make changes to the transfer portion of an order upon issuance of any Biological Opinion

for the Central Valley Project Operations Criteria and Plan, if the Interim Remedial Order in NRDC v. Kempthorne is stayed or overturned on appeal.

The following conditions are appropriate in this instance:

- 1 Full mitigation, including compensatory mitigation with a land acquisition program, to compensate for adverse affects to GGS as a result of crop idling transfers involving fallowing of rice fields where GGS is present.
- 2 A comprehensive environmental assessment, including a monitoring program, analyzing potential impacts to salmonids resulting from groundwater pumping in the North Sacramento Valley under the DWB.
- 3 A description of the changes to CVP and SWP operations as a result of the place of use consolidation and DWB implementation, including a proposal for complying with the current Biological Opinion for Smelt and the forthcoming Biological Opinion for Salmon.