



# CALIFORNIA FARM BUREAU FEDERATION

NATURAL RESOURCES AND ENVIRONMENTAL DIVISION

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June 25, 2009

TO: BDCP "Other Stressors" Workgroup Chairs, Brent Walthall and John McCamman

RE: Draft BDCP Pesticide and Herbicide Conservation Measure & California Farm Bureau Federation's Concerns Relating to Potential Conflicts with Central Valley Regional Water Quality Board's Irrigated Lands Regulatory Program and State Regulation of Pesticides and Herbicides

Dear Chairmen Walthall and McCamman:

Over of course of roughly the last two years, California Farm Bureau Federation ("Farm Bureau") has been an active participant on the Bay-Delta Conservation Plan ("BDCP") Steering Committee and in several topical workgroups, including the BDCP "Other Stressors" Workgroup. The Sacramento-San Joaquin Delta is an indispensable source of water for approximately 550 thousand acres of highly productive farmland in the Delta itself and approximately 3 million acres in areas south of the Delta. In addition, it is an indispensable drinking water source for some 23 million Californians relying upon deliveries of water from either the State Water Project ("SWP") or the federal Central Valley Project ("CVP"). The BDCP is an ambitious plan to improve water conveyance and environmental conditions in the Sacramento-San Joaquin Delta and secure certain long-term regulatory assurances under federal and state endangered species laws for the state and federal projects. In addition to such operational, water conveyance, and habitat-related actions, the BDCP has developed a number of proposed conservation measures for so called "other stressors" on protected species and the environment.

The BDCP currently proposes to complete a package of water operations, habitat, and other stressors conservation measures for further analysis and inclusion in a draft conservation strategy by the end of the July 2009. The purpose of this memorandum is to bring to the attention of the BDCP "Other Stressors" Workgroup, and also to the attention of a number of key interests not previously part of the BDCP conversation, a number concerns recently identified by Farm Bureau staff, pertaining to the BDCP "Other Stressors" Workgroup's draft conservation measure OSM4 to "Reduce the Load of Pesticides and Herbicides Entering Delta Waterways from In-Delta Sources that are Believe to be Toxic to Covered Fish Species and the Food Organisms Upon Which They Depend." (See draft measure attached.) In large part, these concerns relate to certain potential conflicts and incompatibilities between the proposed conservation measure on one hand and, on the other, the Central Valley Regional Water Quality Control Board (CVRWQCB)'s Irrigated Lands Regulatory Program ("ILRP") and the state's existing laws and regulations administered by the California Department of Pesticide Regulation

("CDRP"), relating to the use of agricultural pesticides and herbicides. In addition, we are attaching hereto a redlined version of the draft conservation measure itself, incorporating a number of specific comments related to the actual language and substance of that draft text. Again, these comments are intended for consideration in the context of the BDCP and, also, to raise the awareness of a number of key entities and interests outside of the BDCP in the area of agricultural nonpoint runoff issues and agricultural pesticides and herbicides.

**Farm Bureau's Concerns Relating to the BDCP's Proposed "Other Stressors"  
Conservation Measure OSM4 ("Reduce the Load of Pesticides and Herbicides Entering  
Delta Waterways from In-Delta Sources that are Believed to be Toxic to Covered Fish  
Species and the Food Organisms Upon Which They Depend")**

Concern #1: Regulatory requirements associated with the Irrigated Lands Regulatory Program ("ILRP") Conditional Waiver apply uniformly to irrigated lands throughout the Central Valley Basin (Region 5). Subjecting landowners in a particular geographic area to different, additional, or more stringent regulatory requirements that do not apply elsewhere in the basin is contrary to the legal and regulatory framework that underlies the existing program.

Concern #2: The existing Conditional Waiver for Runoff from Irrigated Lands is, as the name indicates, first, a "waiver" of any formal waste discharge requirement under the Porter-Cologne Act for nonpoint runoff from Central Valley irrigated agricultural lands and, second, contingent on compliance with a series of very specific "conditions." So long as the conditions in the waiver are met, any requirements over and above what is required under the waiver go beyond what the law currently requires. Most importantly, so long as all applicable water quality objectives in an adopted basin plan are met—or, in the infrequent event of an occasional exceedance, so long as appropriate corrective and preventive action is taken as provided under the conditional waiver program itself—the waiver fulfills its basic function and nothing more is or should be required. Insofar as it would expand upon the existing program or endeavor to lay in new requirements and prohibitions above and beyond what is required under the existing program, the proposed pesticide and herbicide conservation measure would appear to impose quasi-regulatory requirements with no basis in the law. If only for this reason, then, the proposed approach embodied in the current draft measure is unacceptable in our view, without significant revision.

Beyond this, it is pertinent to note that the current conditional waiver for the Irrigated Lands program expires on June 30, 2011 and that the

Regional Board is currently working with interested stakeholders, including Farm Bureau, to develop a new long term irrigated lands program ("LT ILRP"). Since environmental review of the LT ILRP has yet to occur, numerous decisions on the scope of the program have yet to be made (for example, whether the program will entail a conditional waiver or formal waste discharge requirements and whether it will regulate surface water only or extend to groundwater as well). Because of the significant uncertainty associated with the reach and scope of the new program, even if it *were* appropriate for the BDCP to somehow embed its conservation measures in the regional board's regulatory programs for irrigated lands (and Farm Bureau, once again, emphatically maintains that it is *not*), a specific "Other Stressors" that relies on the ILRP program at this time might well be premature.

Concern #3:

Just as the Central Valley Regional Water Quality Control Board ("CVRWQCB") administers the ILRP and is responsible for protection of water quality and prevention of discharges of specified pesticides and herbicides in excess of established water quality objectives for the Sacramento-San Joaquin Basin, the Department of Pesticide Regulation ("DPR") regulates the use and manner of application of various pesticides and herbicides commonly used for agricultural purposes throughout California. Specific restrictions on the use of a variety of pesticides and herbicides are prescribed by the DPR through a rigorous pesticide registration process, including compliance with CEQA and state and federal endangered species laws where applicable, and through specific restrictions in pesticide labels, licensing, training, reporting, and permitting requirements, and local enforcement by County Agricultural Commissioner ("CAC") offices. In addition, DPR coordinates with the State and Regional Water Quality Control Boards on water quality issues and on endangered species issues with the California Department of Fish and Game, the United State Fish and Wildlife Service, and the National Marine Fisheries Service, the United State Environmental Protection Agency, the California Department of Food and Agriculture, and the CACs. Accordingly, as with the ILRP, so long as a particular pesticide or herbicide is approved for use and an individual grower is in compliance the terms of its use, all of the applicable legal and environmental requirements have been satisfied and nothing more can or should be required of that grower.

To impose additional restrictions or requirements on pesticide use, over and above those currently overseen by the DPR, adds an extraneous layer of regulation and potentially subjects growers to additional costs and

restrictions that can adversely impact their operations and profitability. Accordingly, unless an individual grower's decision to subject his operation to such additional restrictions is entirely voluntary, any quasi-regulatory expansion of existing requirements is, again, highly problematic.

Concern #4: The BDCP should look at the legal, technical, and practical feasibility of the proposed "Other Stressors" conservation measures before adopting a particular measure as part of a final BDCP package. In this case, it does not appear that there has been any meaningful attempt at stakeholder outreach to affected watershed coalitions and landowners in order to gauge potential acceptance or opposition, or the realistic prospect of actual voluntary participation in such a program.

Concern # 5: The draft conservation measure refers to incentives for landowner participation, by which we assume the intended meaning is that these would be *positive incentives*. Aside from the motivation that might be provided by tighter regulation and fear of non-compliance and reprisal, however, it is unclear in the proposed scenario what possible advantage a landowner would gain through voluntary participation and, thus, what actual *positive* incentives would be provided. Without voluntary participation, the measure would, in effect, become an expanded regulatory program, and such an approach is, again, highly problematic for a variety of reasons discussed herein.

Concern #6: The overview of provided in the conservation measure itself highlights the fact that there is little to no clear science that alleged lethal and sublethal effects on fish from agricultural pesticides, either generally in the Central Valley or in the Delta *per se*, are a significant stressor at the population level, or that the proposed actions would be actually likely to change or significantly influence this dynamic, even if they were. In our assessment, the hypothesis concerning a potential linkage between pesticides and herbicides and food production or "productivity" is similarly speculative at this point. While the draft measure proposes to test these hypotheses through implementation, adaptive management, and monitoring over time, it is questionable whether there is sufficient certainty of any benefit significant enough to justify the kind of top-down approach proposed. Moreover, to the extent there are excessive pesticide levels in Delta waterways, current water quality data indicate that this is more likely attributable to overuse in urban areas than misuse on agricultural lands.

Concern #7:

The ILRP and Conditional Waiver program to date is fundamentally premised on the notion that monitoring and problem identification should precede specific actions to address and resolve such problems. Contrary to this approach, the proposed conservation measure, as currently drafted, appears to put the cart before the horse by assuming beforehand that a generalized problem exists and that this problem can be cost-effectively and efficiently addressed by implementing certain management practices in a general opportunistic way, at certain unidentified locations, or on a certain acreage of lands, etc. Unfortunately, the biological benefit that might be expected from such an approach appears quite tenuous. Instead of funding and implementing assorted actions on the front end and then monitoring results, a more effective approach might be to fund additional studies and monitor existing conditions *before* pursuing any general source-reduction effort. In addition, such a monitoring and study-driven approach, followed by possible, targeted source-reduction measures thereafter, might possibly be undertaken in combination with an Action 2 voluntary cost-sharing component, stripped of any *de facto* regulatory expansion on the CVRWQCB's existing ILRP.

In closing, while Farm Bureau has participated extensively in the "Other Stressors" workgroup, and while we have endeavored to provide constructive input on this measure throughout, a frank assessment of the current measure at this time raises numerous concerns as described herein. This should not signal any lack of continued support for the BDCP program as a whole. It does, however, express our reservations with respect to the proposed pesticide and herbicide conservation measure as currently conceived and described. Farm Bureau thanks the chairs of BDCP Other Stressors Workgroup and BDCP Management for the opportunity to raise these concerns on a topic of great importance to our statewide membership. We look forward to supporting a revised conservation measure that avoids the concerns explained above.

Very truly yours,



Christian C. Scheuring  
Managing Counsel

CCS/JEF/pkh  
Attachment

CC: Kenny Watkins, Second Vice-President/BDCP Steering Committee Member, California  
Farm Bureau Federation  
Karen Scarborough, Undersecretary, Resources Agency  
Mary Ann Warmerdam, Director, Department of Pesticide Regulation  
A.G. Kawamura, Secretary, Department of Food and Agriculture  
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Bruce Houdesheldt, Sacramento Valley Water Quality Coalition  
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Denise Sagara, Yolo County Subwatershed Coordinator, Sacramento Valley Water  
Quality Coalition  
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Tim Johnson/Roberta Firoved, California Rice Commission

BDCP "Other Stressors" workgroup distribution

**OSCM4: Reduce the Load of Pesticides and Herbicides Entering Delta Waterways from In-Delta Sources that are Believed to be Toxic to Covered Fish Species and the Food Organisms Upon Which They Depend .** [Note to reviewers: This measure will be updated with additional detail and funding specifics as more information is provided through ongoing communications with the CVRWQCB.] The BDCP Implementing Entity will reduce the load of pesticides and herbicides entering Delta waterways from in-Delta sources by implementing two related actions: (1) support efforts by the Central Valley Regional Water Quality Control Board (CVRWQCB) under its Irrigated Lands Regulatory Program to reduce inputs of toxics from agricultural return flows into the Delta, and (2) fund conservation easements, cost-sharing programs, and provide incentives to groups of farmers, large individual farmers, reclamation districts, and irrigation/drainage districts to develop voluntary agricultural chemical management plans to reduce the amounts of pesticides and herbicides reaching Delta waterways.

**Action 1:** The BDCP Implementing Entity will support efforts by the Central Valley Regional Water Quality Control Board (CVRWQCB) under its Irrigated Lands Regulatory Program to reduce inputs of toxics from agricultural return flows into the Delta to levels at which they are not toxic to covered fish species by 20\_\_\_\_. The estimate cost to implement this measure is \$\_\_\_\_ in \_\_\_\_\_ dollars over the term of the BDCP. The Irrigated Lands Regulatory Program regulates dischargers of irrigation water and storm water from irrigated lands under a waiver of waste discharge requirements, but under current regulations waivers must be conditional, enforceable, and include monitoring to ensure compliance with these conditions. Dischargers must either join an established coalition group or obtain regulatory coverage as an individual discharger. Coalition groups collect fees to monitor and report water quality in discharges and to implement management plans when water quality problems are identified. This conservation measure would support and coordinate existing efforts of the Irrigated Lands Regulatory Program in the form of technical assistance, monetary and/or staff support, and encouragement of voluntary actions.

**Action 2:** The BDCP Implementing Entity will develop pesticide-reduction plans in coordination with area farmers and coalitions and the Central Valley Regional Water Quality Control Board (CVRWQCB). Elements of the plans may include: the funding of conservation easements and cost-sharing programs; and the provision of incentives to groups of farmers, large individual farmers, reclamation districts, and irrigation/drainage districts to develop voluntary agricultural chemical management actions. The estimated cost is \$\_\_\_\_ in \_\_\_\_\_ dollars over the term of the BDCP to reduce the amounts of pesticides and herbicides reaching Delta waterways. It is anticipated that this funding level would reduce inputs of toxics in discharged water from \_\_\_\_\_ acres of farmland. Funded actions could include:

- Changing pesticides and herbicides used to less toxic compounds to aquatic species and provide education on proper use;
- Reducing amounts of pesticides and herbicides used through more direct application methods such as ground-based target-sensing spray systems, or implementation of integrated pest management techniques;
- Reducing concentrations of pesticides and herbicides in return flows to Delta waterways through specific management practices such as development of vegetated buffer strips between agricultural fields and waterways;
- Reducing return flows from agricultural fields to the Delta by using water-efficient technologies (e.g., drip irrigation) (K. Fisher pers. comm.); and

**Comment [JF1]:** It has not been clearly shown that existing levels of pesticides and herbicides actually are "toxic to covered species," at least in any pervasive or generalized way. Also, as noted in comments, the ILRP is based on compliance with existing water quality objectives, not toxicity to fish *per se*, although flows and water quality for fish and wildlife are a covered "beneficial use" in the basin plan.

**Comment [JF2]:** Administrative costs of the ILRP are minimal in comparison with the much more significant monitoring and BMP implementation costs that are effectively shifted to landowners. From this standpoint, if such an action were indeed undertaken, money would be much better spent in support of landowner monitoring and BMP efforts than on additional water board staff and regulation. Hiring more water board staff and expanding the existing program will not appreciably improve water quality or benefit fish. If this is the objective, then providing monetary support and assistance to landowners would have a much better chance of possibly accomplishing at least some of this purpose.

**Comment [JF3]:** What "voluntary" actions would be encouraged in connection with the existing ILRP that are not already being undertaken? This is language is overly vague and appears to misconstrue or ignore the nature of the existing ILRP.

**Comment [JF4]:** The regional board has regulatory authority under the ILRP only over discharges of certain pollutants and compliance with water quality objectives in an adopted basin plan. As distinguished from what is subsequently discharged into adjacent waterways, what pesticides are applied *on land*, and in what amounts, this is the province of the Department of Pesticide Regulation.

**Comment [JF5]:** The measure speaks of "incentives" to undertake certain "voluntary" actions, including development of "pesticide-reduction plans," easements, etc. - however, it is not at all clear what "incentives" Delta farmers would have to do these things, so long as they are in compliance with existing requirements under the ILRP and any applicable DPR restrictions on the use of specific pesticides and herbicides.

- Reducing wind drift of pesticides and herbicides into Delta waterways through the use of ground-based direct application methods described above and establishment of perennial cover crops between orchard and vineyard rows for dust reduction.

**Comment [JF6]:** Is "dust reduction" truly something that would be anticipated to notably benefit species in any way? This seems quite tenuous.

To accomplish Action 1, the BDCP Implementing Entity will enter into a Memorandum of Agreement (MOA) or similar binding instrument with the CVRWQCB as described in Section 3.4.3.1. The BDCP Implementing Entity will be responsible for monitoring the effectiveness of agricultural contaminant reduction activities in achieving covered fish species benefits. This monitoring will be required because of the uncertainties surrounding the population level benefits of reducing loads of agricultural pesticides and herbicides on covered fish species. If the Irrigated Lands Regulatory Program were to be revised in the future by CVRWQCB in such a way that the BDCP Implementing Entity finds that BDCP goals cannot be met, the BDCP would withdraw financial support.

**Comment [JF7]:** Is the existing ILRP actually consistent with the BDCP's proposed purpose (i.e., conservation of covered species under the ESA) even currently? As noted in comments, the ILRP is concerned with compliance with attainment of water quality objectives under the Porter-Cologne Act. This narrow objective embodies the entire purpose of the ILRP, and anything designed to achieve some different or additional set of objectives (e.g., avoidance of lethal and sublethal effects on and/or recovery of the delta smelt) goes beyond the ILRP to create a new and separate *de facto* regulation. To the extent the CVRWQCB board is involved and "bound" by a formal MOA, or to the extent monitoring and enforcement duties are delegated by the regional board to the BDCP Implementing Agency or shared with regional board staff, the proposed measure effectively creates a new regulatory program outside the pale of any existing program. Moreover, this seems unfair to Delta farmers, who would be held to a different standard than farmers elsewhere in the Sacramento-San Joaquin River Basin.

To accomplish Action 2, the BDCP Implementing Entity will enter into binding agreements (e.g., conservation easements, contracts) with participating farmers, irrigation districts, and coalitions that specify specific actions that will need to be implemented by participants to receive BDCP funding. The BDCP Implementing Entity will coordinate with the Fishery Agencies, the CVRWQCB, and the Department of Pesticide Regulation to identify specific pesticides and herbicides to be targeted for reduction and a menu of the types of measures that could be implemented that would cost-effectively reduce loads of targeted compounds. Elements of participant agreements will include:

- a description of specific BDCP funded activities to be implemented by participants;
- provisions for documenting compliance with the agreements;
- access to conduct BDCP effectiveness monitoring; and
- provisions for modifying or terminating participant agreements.

The BDCP Implementing Entity, in coordination with the Fishery Agencies and the CVRWQCB, will develop a pesticide and herbicide reduction monitoring program to assess the effectiveness of funded activities for reducing pesticide and herbicide loads in Delta waterways and providing benefits for covered fish species.

**Comment [JF8]:** Again, by recruiting regulatory agencies and piggybacking on existing regulatory requirements or programs, this appears to create the equivalent of a new regulatory program.

**Comment [JF9]:** Same comment.

**Problem statement:** Agricultural runoff has been identified as a source of pesticides and other chemical stressors of covered fish species that adversely effect aquatic biota (Werner et al. 2008, Werner and Oram 2008). Pesticides have known lethal and sublethal effects on fish species and direct impacts on invertebrates (Van Wijngaarden et al. 2005), which could serve as prey species for covered fish species. For example, Sacramento splittail larvae exhibited reduced survival and growth after exposure to orchard runoff samples (Teh et al. 2003). Additionally, some combinations of organophosphate pesticides are lethal to Pacific salmon at concentrations observed to be sublethal in single-chemical trials (Laetz et al. 2009). Pyrethroid pesticides are particularly toxic to the aquatic environment (Werner and Oram 2008), and the use of pyrethroid pesticides in the Sacramento-San Joaquin Valley has increased steadily since the early 1990's (Resources Agency 2007). In addition, metals such as copper are used as pesticides in the Delta.

**Comment [JF10]:** All of the evidence here cited is based on broad inferences that do not establish any generally applicable causal link to any stressor or particular action or how that action would actually significantly benefit a covered species. Isolated evidence of *some* adverse effects, at *some* times, on *some* species, and in *some* places hardly provides any clear evidence of a generalized problem, or of any cognizable benefit that might be expected, with any measure of reasonable certainty, from implementing the proposed conservation measure as currently described.

**Hypotheses:** Reducing the load of pesticides and herbicides entering Delta waterways is hypothesized to provide benefits to covered fish species through the following mechanisms:

1. Reducing direct mortality of splittail, delta and longfin smelt, green and white sturgeon, steelhead, and Chinook salmon (all races) from pesticides. A 2008 NMFS biological opinion concerning pesticides indicated that re-registration of pesticides containing chlorpyrifos, diazinon, and malathion is likely to jeopardize the continued existence of winter-run and spring-run Chinook salmon and Central Valley steelhead (NMFS 2008). Saiki et al. (1992) found that undiluted agricultural drainwater from the San Joaquin River watershed was acutely toxic to juvenile Chinook salmon.
2. Reducing sublethal effects (behavior, tissue/organ damage, reproduction, growth, and immune) of pesticides on splittail, delta and longfin smelt, green and white sturgeon, steelhead, and Chinook salmon (all races). Zelickoff et al. (1998) found that exposure to the pyrethroid permethrin reduced disease resistance in fish. The susceptibility of juvenile Chinook salmon and rainbow trout to infectious hematopoietic necrosis virus was dramatically increased when exposed to sublethal concentrations of copper (Hetrick et al. 1979) and esfenvalerate (Clifford et al. 2005). Dinoseb, diazinon, and esfenvalerate cause significant metabolic disruption in early life stages of Chinook salmon (Viant et al. 2006). Hecht et al (2007) observed that dissolved copper causes a loss of sensory function in Chinook salmon, steelhead, and other salmonids that is thought to cause disruption in migration and predator detection.
3. Increasing food abundance and quality for splittail, delta and longfin smelt, green and white sturgeon, steelhead, and Chinook salmon (all races) by reducing food web disruption. Although pesticides and herbicides are effective at eliminating weeds and pests on agricultural crops, they are also highly toxic to plants and animals in the aquatic environment, particularly to crustaceans, which are closely related to insects (Weston et al. 2005). Amweg et al. (2005) found pyrethroid concentrations at toxic levels to *Hyallolella azteca* in many agriculture-dominated waterbodies in the Central Valley. All these covered fish species consume crustaceans (e.g., copepods, amphipods, mysid shrimp) for at least part of their lives. In addition, copper has been shown to reduce algal growth (Stoiber et al. 2007), which could, in turn, limit zooplankton growth.

**Adaptive management considerations:** For Action 1, the Implementing Entity will coordinate with the CVRWQCB to adjust Irrigated Lands Regulatory Program contaminant reduction strategies and funding levels through the BDCP adaptive management process as appropriate based on results of effectiveness monitoring and review of CVRWQCB monitoring and other relevant reports. The BDCP Implementing Entity would use results of effectiveness monitoring to determine if reducing pesticide and herbicide loads results in measurable benefits to covered fish species and to identify adjustments to funding levels, control methods, or other related aspects of the program that would improve the biological effectiveness of the program. Such changes, once approved through the adaptive management decision making process, will be effected through subsequent annual work plans. If results of monitoring indicate that reducing pesticide and herbicide loads does not substantially and cost-effectively benefit covered

**Comment [JF11]:** Such hypotheses should be much more thoroughly tested in a laboratory or field setting before the BDCP, or the BDCP with the assistance of any regulatory agency, should launch a program that is so speculative in nature. As it is, the three hypotheses here stated appear to be only weakly supported by existing science, if at all, whereas there could be no experimental controls on such a realworld experiment or any practical means of filtering out all of the myriad background variables and effects in so complex a system to discern any benefit of the conservation measure *per se*.

**Comment [JF12]:** If a biological opinion has been prepared for this or any other pesticide, however, and assuming there were reasonable and prudent alternatives to remove this jeopardly finding, then use of this pesticide would be already covered under the DPE's registration process and, for persons using such a pesticide, there would be no need for any additional coverage under the ESA.

**Comment [JF13]:** Isolated evidence, not in the Delta, or caused by any discharge in the Delta. Fails to demonstrate that there is any pervasive or generalized problem that would be remedied or effectively addressed by means of the proposed conservation measure.

**Comment [JF14]:** Understood. The science appears to show that certain adverse effects on certain species have at times been detected for certain pesticides, at certain levels and certain times, and in certain places. None of this, however, demonstrates that there is an actual pervasive or generalized problem for covered species in the Delta or that the proposed approach would be at all effective at addressing this problem in any measurable way. Justify the added trouble and expense.

**Comment [JF15]:** Again, the *de facto* effect of this action would very clearly be to create the a new layer of regulation over and above any existing requirement currently applying to agricultural operations in the area. As noted previously, the ILRP exists for no other purpose than for a fairly narrowly defined set of water quality objectives under the Porter-Cologne Act. Anything over and above the existing program or for ... [1]

**Comment [JF16]:** In theory, it might be possible to measure a reduction in loads—but not probably to detect any "measurable benefit" at the population level; without the latter, however, the former might serve no useful purpose in terms of the desired extension of certain regulatory assurances.

fish species, the BDCP Implementing Entity, in coordination with Fishery Agencies, may terminate this conservation measure. If terminated, remaining funding would be deobligated from this conservation measure and reallocated to augment funding for other more effective conservation measures identified in coordination with the Fishery Agencies through the BDCP adaptive management process.

For Action 2, the Implementing Entity will monitor the effectiveness of participating farmers/farmer groups in reducing loads of targeted pesticides and herbicides. Based on monitoring results and ongoing reviews of relevant research related to the effects of pesticides and herbicides on covered fish species and food production and abundance, the Implementing Entity may adjust activities for which cost sharing is provided to participating farmers through the BDCP adaptive management process. For example, if results of future research indicates that specific pesticides and herbicides do not measurably adversely affect covered fish species, funding for programs to reduce loads of those pesticides and herbicides would be discontinued and redirected through the BDCP adaptive management process to increase funding for reduction of pesticides and herbicides that are shown to be harmful to covered fish species.

The BDCP Implementing Entity in coordination with the Fishery Agencies may discontinue effectiveness monitoring for both of the actions in future years if monitoring results indicate a strong correlation between reduction in pesticide and herbicide loads entering the Delta and responses of covered fish species.

**Comment (JF17):** Why not undertake such further studies *before* going to all the trouble and expense of implementing this highly speculative and expensive proposed conservation measure?