ENVIRONMENTAL PROTECTION AGENCY

40 CFR Chapter I

EPA-09-0W-2010-0976-FRL

RIN-2009-ZA00

Water Quality Challenges in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

AGENCY: Environmental Protection Agency.

ACTION: Advance notice of proposed rulemaking.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is publishing an advance notice of proposed rulemaking (ANPR) to seek comments from interested parties on possible EPA actions to address water quality conditions affecting aquatic resources in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay Delta Estuary) in California. EPA is asking the public to consider broadly whether EPA should be taking new or different actions under its programs to address recent significant declines in multiple aquatic species in the Bay Delta Estuary. EPA is not limiting its request to actions that would require rulemaking. There may be a range of changes in EPA's activities in the Bay Delta Estuary that would be constructive, including enforcement, research, revisions to water quality standards, etc. EPA will consider all comments before deciding what changes, if any, should be pursued. After reviewing the comments and completing its evaluation, EPA will provide the results of its review and any proposed next steps to the public. This ANPR identifies specific issues on which EPA solicits comment, including potential site-specific water quality standards and site-specific changes to pesticide regulation. In addition to the specific issues on which EPA

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solicits comments, EPA is interested in comments on any other aspects of EPA's programs affecting Bay Delta Estuary aquatic resources. This notice contains a summary version of the ANPR. Information on accessing the unabridged version is included in the SUPPLEMENTARY INFORMATION section below.

DATES: Written comments must be submitted 60 days from [insert date of publication].

ADDRESSES: Written comments, identified by docket number EPA-R09-OW-2010-0976, may be submitted electronically at the *Federal Rulemaking Portal* (http://www.regulations.gov). Hard copy comments should be addressed to Erin Foresman, U.S. Environmental Protection Agency, 75 Hawthorne Street, WTR-3, San Francisco, California 94105. See SUPPLEMENTARY INFORMATION for file formats and other information about filing.

Filing Instructions: All comments will be included in the public docket without change and will be made available online at *http://www.regulations.gov,* including any personal information provided, unless the comment includes Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Information that you consider CBI or otherwise protected should be clearly identified as such and should not be submitted through *http://www.regulations.gov* or e-mail. *Regulations.gov* is an ''anonymous access'' system and EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send email directly to EPA, your e-mail address will be automatically captured and included as part of the public comment. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment.

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Docket: The index to the docket for this action is available electronically at *http://www.regulations.gov* and in hard copy at EPA Region 9, 75 Hawthorne Street, San Francisco, California. While all documents in the docket are listed in the index, some information may be publicly available only at the hard copy location (*e.g.,* copyrighted material), and some may not be publicly available in either location (*e.g.,* confidential business information). To inspect the hard copy materials, please schedule an appointment during normal business hours with Erin Foresman, foresman.erin@epa.gov, (916)557-5253.

FOR FURTHER INFORMATION CONTACT: Erin Foresman at U.S. Environmental Protection Agency, Region 9, Water Division, 75 Hawthorne Street, San Francisco, California 94105; foresman.erin@epa.gov, (916)557-5253.

SUPPLEMENTARY INFORMATION: Detailed information describing the current state of Bay Delta Estuary aquatic resources, summaries of scientific knowledge regarding Bay Delta Estuary water quality stressors, and water quality regulatory and non-regulatory activities in the Bay Delta Estuary is contained in the Unabridged ANPR provided on EPA Region 9's website (http://www.epa.gov/region9/water/watershed/sfbay-delta/index.html) and in the electronic docket available at *http://www.regulations.gov*, docket number EPA-R09-OW-2010-0976. EPA suggests reviewing this document prior to submitting comments.

This ANPR has no regulatory impact or effect. The ANPR contains descriptions of certain EPA programs relevant to the Bay Delta Estuary and poses questions about how these programs could better protect and improve water quality for the benefit of aquatic resources in the Bay Delta Estuary. This ANPR marks the beginning of a process

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to consider possible changes to EPA programs in the Bay Delta Estuary.

If EPA decides to pursue regulatory changes as a result of this ANPR, those regulatory changes will be made pursuant to appropriate formal rulemaking procedures. If changes to any regulations, rules, guidance or statutes are proposed and ultimately made final, to the extent such changes would require and/or authorize changes to state or tribal water quality standards or other regulations, states or authorized tribes would be affected. If changes to state or tribal regulations result from any final rule that EPA may promulgate in the future, entities subject to compliance with state or tribal regulations would also potentially be affected. For example, states and tribes authorized to implement the National Pollutant Discharge Elimination System (NPDES) Permit Program would need to ensure that permits they issue include any limitations on discharges necessary to comply with any water quality standards established as a result of any subsequent final rulemaking. Therefore, entities discharging pollutants to waters of the United States under NPDES could be affected by subsequent proposed and final rulemaking.

I. Purpose of this ANPR

The Bay Delta Estuary is a complex web of waterways, islands, and levees at the junction of the San Francisco Bay and the Sacramento and San Joaquin Rivers.[1] The Bay Delta Estuary is the hub of California's water distribution system, supplying some or all of the drinking water to 25 million people and irrigation water to 4 million acres of

[1] There is no commonly accepted precise geographic definition of the Bay Delta Estuary. The "legal Delta" is well-defined for purposes of the California Delta Protection Commission and related California statutes, but is not co-terminous with the functioning estuary. This ANPR will generally refer to the larger estuary upstream of the San Francisco Bay as the Bay Delta Estuary or the Estuary. It will also refer to the Delta, which usually means the "legal Delta" plus Suisun Marsh and Suisun Bay. Occasionally, this ANPR may also reference the Bay Delta Estuary watershed, which is a huge land area that includes the drainages of the Sacramento and San Joaquin River basins.

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farmland.

Water quality and aquatic resources in the Bay Delta Estuary are under serious stress. All of the waters of the Bay Delta Estuary and most of its tributaries are listed as impaired for one or more parameters under the federal Clean Water Act.[2] Populations of many formerly abundant open-water (i.e., pelagic) fish species, including delta smelt, longfin smelt, and threadfin shad, have collapsed in recent decades. Anadromous[3] fishes, including the winter run chinook salmon, have suffered a similar decline. The decline of these aquatic resources has generated debate over water resource management in the Bay Delta Estuary. Delta interests, including state and federal agencies, environmental groups, urban and agricultural water users, commercial and recreational fishermen, and others have spent many years grappling with Bay Delta Estuary resource issues.

Concerns regarding Bay Delta Estuary water resource management increased during the 2009 water year[4] as water users and resource managers struggled with the effects of three years of drought. Water export limitations caused by the drought and by restrictions imposed under the federal Endangered Species Act (ESA)[5] to assist struggling endangered species significantly reduced the availability of water for agricultural and urban uses.[6] At the same time, the salmon fishery was closed on most of

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[2] Clean Water Act, 33 U.S.C. §§ 1281-1387 (2006).

[3] "Anadromous" species are those, such as chinook salmon and steelhead, that spend at least some of their life cycle in salt water. Usually, these species return to freshwater to spawn.

[4] Water years in California are defined as October 1 through the following September 30. For example, the 2011 water year began October 1, 2010 and continues through September 30, 2011. Water years in California are categorized based on the particular rainfall that year. The categories are wet, above normal, below normal, dry, and critically dry.

[5] Endangered Species Act, 16 U.S.C. §§ 1531-1544 (2006).

[6] *See* CAL. DEP'T OF WATER RES. & BUREAU OF RECLAMATION, WATER SUPPLY CONDITIONS 2009 (Aug., 2009), *available at* http://www.water.ca.gov/news/newsreleases/2009/08122009martinmilligan2.pdf (suggests that approximately a quarter (500 thousand acre feet) of the 2.1 million acre feet water export shortfall in 2009 was due to new environmental restrictions, whereas three quarters (1.6 million acre feet) of the shortfall was due to the drought itself).

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the West Coast for a second consecutive year as a result of declines in that fishery. Both the agricultural and fishery sectors suffered job losses as a result of the drought and the water export restrictions.

The federal government responded to this ongoing water management crisis with a broad set of actions.[7] One of those actions was the creation of the Federal Bay Delta Leadership Committee, a Cabinet-level, multi-agency committee charged with coordinating federal responses to Bay Delta Estuary issues.[8] The Federal Bay Delta Leadership Committee released its Interim Federal Action Plan for the California Bay-Delta (Federal Action Plan) on December 22, 2009, outlining the federal government's plan to address the Bay Delta Estuary and to work with the State of California to build a sustainable water future.[9] The Federal Action Plan includes actions by EPA to "assess the effectiveness of the current regulatory mechanisms designed to protect water quality in the Delta and its tributaries, including standards for toxics, nutrients, and estuarine habitat protection." EPA will also evaluate voluntary mechanisms that may be used to restore water quality in the Bay Delta Estuary. This ANPR is the beginning of this assessment.

New scientific information about the Bay Delta Estuary and its aquatic resources has substantially increased in the past few years. This information has been developed and/or reviewed in reports[10] synthesizing information on aquatic resources and water

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[7] *See* Press Release, U.S. Dep't of the Interior, Secretary Salazar, Senior Administration and Congressional Officials Hold Town Hall Meeting on California Water Shortage (June 28, 2009), *available at* http://www.doi.gov/news/pressreleases/2009_06_28_release.cfm (discussing several water augmentation initiatives).

[8] California Bay-Delta Memorandum of Understanding among Federal Agencies (Sept. 29, 2009), *available at* http://www.doi.gov/documents/BayDeltaMOUSigned.pdf.

[9] INTERIM FEDERAL ACTION PLAN FOR THE CALIFORNIA BAY-DELTA (Dec. 22, 2009), *available at* http://www.doi.gov/documents/CAWaterWorkPlan.pdf.

[10] Citations to these many reports and reviews are provided in the Unabridged ANPR, as each issue is

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quality by the following entities: the State/Federal Interagency Ecological Program Pelagic Organism Decline science team,[11] the State's Delta Vision Blue Ribbon Task Force, the Public Policy Institute of California, the U.S. Fish and Wildlife Service and National Marine Fisheries Service as part of their biological opinions and associated independent science reviews, the California State Water Resources Control Board (State Board) and the Central Valley Regional Water Quality Control Board (Central Valley RWQCB).[12] Most of these studies and reports involve resources protected under the Clean Water Act and other EPA programs.

EPA is using this ANPR to solicit and synthesize existing scientific information regarding the biological, chemical, and physical integrity of the Bay Delta Estuary's aquatic resources. EPA will comprehensively review this information as it evaluates its statutory and regulatory options in the Bay Delta Estuary and will develop an appropriate response. Specifically, the purposes of this ANPR are:

(1) To review the current status of the EPA and Water Boards'[13] responses to adverse water quality conditions that have been identified as potential contributors to the Bay Delta Estuary's aquatic resources decline;

(2) To determine how best to implement existing programs under the Clean Water Act and the Federal Insecticide, Fungicide and Rodenticide Act[14] to improve Bay Delta Estuary water quality for aquatic resources;

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discussed in detail.

[11] RANDALL BAXTER, ET AL., PELAGIC ORGANISM DECLINE PROGRESS REPORT: 2010 SYNTHESIS OF RESULTS (2010), *available at* http://www.water.ca.gov/iep/docs/FinalPOD2010Workplan12610.pdf.

[12] The State Board, Central Valley RWQCB, and San Francisco Regional Water Quality Control Board (San Francisco RWQCB) will sometimes be referred to collectively as the "Water Boards."

[13] Much of EPA's statutory mandate is to perform oversight and review of state water quality agency activities.

[14] Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. § 136-136y (2006).

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(3) To identify barriers, either programmatic or statutory, to improving Bay Delta Estuary water quality;

(4) To identify any additional scientific information regarding water quality related to aquatic resources in the Bay Delta Estuary; and

(5) To solicit input on whether EPA should be taking new or different actions under its programs to address aquatic resource problems in the Bay Delta Estuary.

Specific topics on which EPA is requesting comments appear in the sections below.

Related Efforts in the Bay Delta Estuary

There are several major efforts underway to address Bay Delta Estuary resources, including the regulatory programs of the Water Boards under state and federal water quality statutes. In July 2008, the Water Boards adopted a Strategic Workplan to coordinate and guide their Bay Delta Estuary activities.[15] Over the next several years, these state activities will include, among others, multiple point source permit renewals, new pollutant and flow standards for the southern Delta and lower San Joaquin River, and Total Maximum Daily Loads (TMDLs) for pesticides in the Central Valley. EPA continues to support many of the elements in the State's Workplan through technical and financial assistance.

Any EPA action taken as a result of this ANPR will complement the Water Boards' actions, as EPA's priority is to support and augment these efforts. As these efforts unfold, EPA will monitor their progress and determine whether additional actions,

[15] STATE WATER RES. CONTROL BD., CENT. VALLEY WATER BD., & SAN FRANCISCO BAY WATER BD., STRATEGIC WORKPLAN FOR ACTIVITIES IN THE SAN FRANCISCO BAY/SACRAMENTO-SAN JOAQUIN DELTA ESTUARY (2008), *available at* http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/strategic_plan/docs/baydelta_workplan_final.pdf.

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consistent with its statutory authorities and responsibilities, are needed to ensure that the requirements of the Clean Water Act are satisfied. Finally, regardless of whether EPA pursues any new actions as a result of this ANPR, EPA believes the information gathered through the ANPR process may provide a factual basis for EPA's ongoing activities under the Clean Water Act, the National Environmental Policy Act,[16] and other federal statutes in the Bay Delta Estuary.

There are other federal and state water resource planning efforts underway in the Bay Delta Estuary. Stakeholders and relevant government agencies are engaged in developing the Bay Delta Conservation Plan (BDCP) under the federal Endangered Species Act and the California Natural Community Conservation Plan Act.[17] The BDCP focuses on the recovery of ESA-listed species and their habitat in the Bay Delta Estuary and is expected to include major proposals for changing how water is diverted and conveyed through the Bay Delta Estuary to the state and federal water export facilities in the south Delta.[18] The EPA's responsibilities under the Clean Water Act to protect designated uses, such as estuarine habitat, fish migration, and threatened and endangered species, overlap with ESA requirements being addressed in the BDCP. Some actions taken pursuant to the BDCP will need to comply with both the ESA and Clean Water Act. To that end, EPA will ensure that any action it might take as a result of this ANPR will be closely coordinated with other federal and state actions related to the BDCP, any biological opinions on water operations affecting the Bay Delta Estuary, and any other

[16] National Environmental Policy Act, 42 U.S.C. § 4321-4370f (2006).
[17] Natural Community Conservation Plan Act, CAL. FISH & GAME CODE § 2800-2835 (2003).
[18] Although the scope of the BDCP covers at least nine listed aquatic species and a geographic area of over one-half million acres, the BDCP is not intended to be a comprehensive Delta recovery plan. By its own terms, it is intended to meet ESA requirements by addressing only the operations of the state and federal water export projects and their impacts on listed species and their habitat.

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actions requiring ESA compliance.

In addition, recent state legislation has established the Delta Stewardship Council (DSC), an independent state agency charged with developing a comprehensive resource management plan, the Delta Plan, by January 2012.[19] The Delta Plan is intended to guide state and local agencies to help achieve the state's coequal goals of a reliable water supply and a restored Delta ecosystem. To inform the Delta Plan, the DSC's Independent Science Board will evaluate the multiple stressors in the Bay Delta Estuary.[20] Any EPA action taken as a result of this ANPR will also be coordinated with this and other related efforts.

The National Academy of Sciences (NAS) has initiated a review of some aspects of the science supporting ESA protections in the Bay Delta Estuary. Much of that scientific information is also relevant to Clean Water Act programs. Accordingly, EPA is coordinating with the NAS to assure that scientific evaluations serve the multiple regulatory programs in the Bay Delta Estuary.

Scope of this ANPR

This ANPR is focused on the most significant water quality factors adversely affecting aquatic species designated uses in the Bay Delta Estuary. Aquatic species, specifically the salmonids and pelagic species suffering significant population collapse during the last decade, brought the Bay Delta Estuary's water resource management issues into sharp focus in recent years. EPA recognizes that the Bay Delta Estuary supports over 750 species of fish, mammals, birds, reptiles, amphibians, invertebrates,

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[19] CAL. WATER CODE § 85300-85350 (2010).

[20] Letter from Delta Independent Science Board to Phil Isenberg, Chair, Delta Stewardship Council (Jan. 26, 2011), *available at* http://www.deltacouncil.ca.gov/delta_science_program/pdf/isb/d-isb_20110126_stressor_short_memo_final.pdf.

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and plants, and that forty or more of these species are listed under state and/or federal endangered species laws.[21] This ANPR is focused on aquatic species designated uses for waterbodies in the Bay Delta Estuary, but welcomes comment on how other species are being affected by water management decisions.

This ANPR does not comprehensively discuss water quality issues related to other designated uses, including drinking water, recreation, fish consumption, agriculture, etc. For example, water contact has been restricted in certain Bay Delta Estuary waters due to toxic blue-green algae blooms. EPA acknowledges the ongoing need to address these other issues.

II. Program Areas for Public Comment

In this ANPR, EPA is asking the public to consider broadly whether EPA should take new or different actions under its programs to address problems in the Bay Delta Estuary. EPA is not limiting its request to actions that would require actual rulemaking; there may be a range of changes in EPA's activities in the Bay Delta Estuary that would be constructive, including enforcement, research, revisions to water quality standards, etc. Any change in EPA activities would be dependent on existing authority and the availability of existing or new resources. Any changes requiring EPA rulemaking would provide for public comment through the notice and comment rulemaking process.

A substantial amount of research was performed and evaluated in connection with

[21] DELTA VISION BLUE RIBBON TASK FORCE, DELTA VISION STRATEGIC PLAN (Oct. 2008), *available at* http://deltavision.ca.gov/StrategicPlanningProcess/StaffDraft/Delta_Vision_Strategic_Plan_standard_resolution.pdf; Estimate of federal and state endangered and threatened species based on discussion with U.S. Fish & Wildlife Service biologists; BAY DELTA CONSERVATION PLAN, STEERING COMMITTEE WORKING DRAFT (Nov. 18, 2010), *available at* http://baydeltaconservationplan.com/Libraries/Whats_in_Plan/draft_BDCPreport_11292010_ClickableLinks7.pdf; CALFED BAY DELTA PROGRAM, MULTI-SPECIES CONSERVATION STRATEGY, FINAL PROGRAMMATIC EIS (July 7, 2000), *available at* http://dfg.ca.gov/erp/envcomp_mscs.asp.

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the scientific review of the pelagic organism decline. As noted above, that process identified a number of potential stressors affecting the Bay Delta Estuary aquatic ecosystem. Many of those potential stressors are directly or indirectly affected by the EPA programs described above. EPA has identified certain topics for more focused consideration in this ANPR. These are:

- Ammonia
- Selenium
- Pesticides
- Contaminants of Emerging Concern
- Estuarine Habitat
- Fish Migration Corridors
- Wetlands

EPA has not made any attempt to rank these topics as to their importance in resolving Bay Delta Estuary issues.[22] EPA's preliminary evaluation suggests that each of these topics, if addressed, could contribute to a resolution of Bay Delta Estuary resource conflicts. While this ANPR discusses these topics separately, EPA is mindful that the more significant concern is the cumulative and interactive effects of multiple stressors on the Bay Delta Estuary's aquatic inhabitants. Commenters may also identify additional topics that impact Bay Delta Estuary resource management, if EPA has some programmatic involvement in the topic.

[22] The National Research Council panel currently evaluating several Bay Delta Estuary science issues may be "ranking" factors associated with the decline of ESA listed species and other at-risk species. That ranking and the associated report is not due until 2011. Similarly, the Delta Independent Science Board has initiated a process to evaluate and rank the relative importance of multiple stressors and, especially, to consider the interactive effects of these multiple stressors. *See* DELTA STRESSORS WORKSHOP, MEETING NOTICE (Dec. 30, 2010), *available at* http://www.deltacouncil.ca.gov/delta_science_program/pdf/isb/d-isb_2011_01_workshop_stressors_mtg_notice_122810.pdf.

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Many activities discussed in this notice have been or are now the subject of a formal or informal rulemaking process conducted by either EPA or a related state or federal agency. Nothing in this notice is intended to supersede those ongoing processes, nor does this notice constitute a decision under any of those processes. If commenters have submitted material in connection with those other processes that is believed to be relevant to the issues raised in this notice, the commenter may either reference the earlier submission (if it was submitted to EPA), attach the earlier submission (if it was submitted to a different agency), or, if appropriate, provide a link to the material online. Please provide the reason(s) for answers to the following questions and scientific, policy, and/or legal information with citations that support your comments.

A. Contaminants

1. Contaminants – General

a. Are there contaminants, other than those named above, causing adverse impacts to aquatic resource designated uses in the Bay Delta Estuary and that should receive more focused review?

b. How can pollutant-specific water quality criteria effectively address or incorporate interactive effects between multiple contaminants and other physical, chemical, and biological stressors?

c. What methods can be used in developing and implementing TMDLs to effectively address or incorporate interactive effects between multiple contaminants and other physical, chemical, and biological stressors on individual water bodies or for water bodies within a watershed?

d. What information exists about how climate change impacts will effect

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contaminant pollution (generally or for individual contaminants)?

2. **Ammonia: Toxic and Nutrient Effects**

   a. What, if any, information is available on the sources or impacts of total ammonia nitrogen in the Bay Delta Estuary that is not reflected or cited above?

   b. Is there any information available that suggests site-specific water quality standards for total ammonia nitrogen in the Bay Delta Estuary may be more effective than current standards due to unique hydrological, chemical, biological, or physical conditions?

   c. What information is needed to determine effective site-specific water quality standards for total ammonia nitrogen, including narrative or numeric criteria?

   d. What information is available on nonpoint sources of total ammonia nitrogen and how they may most effectively and efficiently be controlled?

3. **Selenium**

   a. What, if any, additional information is available to better characterize selenium sources, loadings and impacts within the watershed of the Bay Delta Estuary?

   b. What data, studies, and analytical techniques (for example, models) could be used to improve our understanding of the physical processes, including surface-groundwater interactions, controlling selenium mobilization and transport to and within the Bay Delta Estuary?

   c. What data are needed to track selenium impacts in the Bay Delta

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ecosystem as currently configured, and to evaluate potential impacts of selenium under changed flow and transport conditions into and within the Delta?

d. Are there additional selenium control methods or programs that should be considered for reducing selenium inputs and impacts?

4. Pesticides

a. What, if any, additional scientific information is available on (a) the effects of pesticides in stormwater discharges, or (b) the potential interactive effects of combinations of pesticides on aquatic resources in the Bay Delta Estuary?

b. What, if any, actions should EPA take under its authority to improve the effectiveness of regulating pesticide contamination of the Bay Delta Estuary watershed?

c. How can the process for establishing numeric water quality criteria be streamlined while maintaining technical integrity?

d. What are the benefits and constraints of using fish tissue in place of or in addition to water column concentrations when establishing water quality criteria for pesticides?

e. Are there testing protocols that would effectively and efficiently identify synergistic toxic effects in the Bay Delta Estuary?

f. What, if any, specific combinations of contaminants are of particular concern in the Bay Delta Estuary?

g. Should EPA and our state partners move away from evaluating isolated

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aquatic species for one or two pollutants, and towards evaluations of water conditions more representative of the actual aquatic conditions in the Bay Delta Estuary? How might this be done?

h. What new or revised effluent limitations, monitoring requirements or other permit requirements could be included in NPDES permits for discharges of pesticides from Municipal Separate Storm Sewer Systems (MS4s) in the Bay Delta Estuary in order to better meet the regulatory standard of reducing discharges to the maximum extent practicable? What information is necessary to determine permit requirements, such as identifying effluent limits that can effectively reduce ambient contaminant concentrations and restore designated uses? Please provide any available information on water quality benefits that may result from such requirements.

i. What new or revised effluent limitations, monitoring requirements or other permit requirements could be included in NPDES permits for stormwater discharges associated with construction activity and/or stormwater discharges associated with industrial activity to address pesticides? What information is necessary to determine permit requirements, such as identifying effluent limits that can effectively reduce ambient contaminant concentrations and restore designated uses? Please provide any available information on water quality benefits that may result from such requirements.

j. Should EPA use its residual designation authority at 40 C.F.R. 122.35 to designate currently unregulated small MS4s to ensure that municipalities

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have programs in place to control the discharge of pesticides in stormwater to the maximum extent practicable? What information is necessary to determine permit requirements, such as identifying effluent limits that can effectively reduce ambient contaminant concentrations and restore designated uses? Please provide any available information on water quality benefits that may result from such requirements.

k. Should EPA use its residual designation authority at 40 C.F.R. 122.26(a)(9)(i)(C)-(D) to designate currently unregulated stormwater discharges that contribute pesticides to surface waters? What information is necessary to determine permit requirements, such as identifying effluent limits that can effectively reduce ambient contaminant concentrations and restore designated uses? Please provide any available information on water quality benefits that may result from such requirements.

5. Contaminants of Emerging Concern

a. What, if any, additional information is available regarding the effects of CECs on aquatic resources in the Bay Delta Estuary?

b. What, if any, specific information exists to identify the sources and nature of discharges of CECs into the Bay Delta Estuary?

c. What, if any, monitoring mechanisms or methodologies are available to assist in identifying CECs?

d. What, if any, methods are most effective to minimize introduction of CECs into the Bay Delta Estuary?

B. Protecting Estuarine Habitat, Fish Migration Corridors and Wetlands

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1. Estuarine Habitat

a. What information is available on the effect of lower salinities in the western Delta on undesirable species, such as *Microcystis*, overbite clams, or jellyfish? What, if any, information is available to determine if an increase in low salinity habitat would affect the fate, concentration and distribution of nutrients and toxics that are potentially negatively affecting the estuarine food web?

b. Could the frequency, area, and/or duration of low salinity habitat be changed so as to achieve ecosystem benefits for the suite of species that use the low salinity zone? If so, how? Is historical data on inter- or intra-annual frequency of variability the best basis for setting goals or are there other bases that could be used? How might climate change impacts, including sea level rise, affect the size, frequency, and duration of low salinity habitat?

c. Are methods available for more systematically addressing ecological or biological connections between springtime locations of low salinity habitat and subsequent conditions of the low salinity zone in the fall? If so, what are they and what are their strengths and weaknesses?

d. Would changes in water system operations to move the low salinity zone seaward in the fall adversely affect the reservoir storage needed to conserve salmonid fish spawning and other designated uses in the watershed? If so, under what conditions?

e. What information is available on the effects of salinity management on

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terrestrial plant communities and/or tidal marsh endemic species? What indirect effect does this have on aquatic communities?

f. Does the geographic location of low salinity habitat have an effect on the quality of the habitat or its availability to species of concern? If so, what is the nature and extent of such effect? Is the distribution pattern of low salinity habitat important in determining its quality?

g. Are spring/neap differences in tidal water quality important for aquatic species? If so, how should these habitat characteristics be evaluated?

h. How can performance measures for species population and/or habitat condition be used to evaluate restoration of Bay Delta Estuary water quality?

2. Fish Migration Corridors

a. What role, if any, do gradients in physical and chemical constituents of water play in the suitability of the Bay Delta Estuary and San Joaquin River Basin migratory corridor for salmon?

b. What are the best measures of success for restoration of a migratory corridor? Could these measures be incorporated into new or revised biological criteria protecting the fish migration designated use?

c. Should temporal characteristics be included in the definition of the physical and/or chemical properties of a migration corridor based on a reference condition? If so, how? What frequency and duration of such a corridor is required for salmonids? How might these characteristics change with the impacts of climate change?

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d. Would establishing a migratory corridor for upmigrating adult chinook salmon succeed in improving adult migration success if temperatures in the river channels upstream of Vernalis are unchanged? If so, how? How might actions to establish a migratory corridor in the south Delta also moderate temperature and/or dissolved oxygen problems in the San Joaquin River?

e. Are additional efforts to improve dissolved oxygen regimes in the Delta necessary to provide an adequate migratory corridor for San Joaquin salmonids? If so, what should those efforts include?

f. What other information is available on the barriers to salmon migration in the Bay Delta Estuary and San Joaquin River watershed?

3. Wetlands

a. What different approaches under the Clean Water Act Section 404 program should EPA consider, in consultation with the U.S. Army Corps of Engineers, to improve the protection of aquatic resource functions in the Bay Delta Estuary?

b. What information exists that describes the relationship between the quantity and quality of wetlands and Bay Delta Estuary water quality and fish populations?

c. In light of projected impacts of climate change (including sea level rise and its effects on levee stability), what specific activities can EPA undertake to improve long-term protection of existing and future wetlands, especially those resources on subsided islands?

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IV. Executive Order 12866, Regulatory Planning and Review

Under Executive Order 12866, entitled *Regulatory Planning and Review* (58 Federal Register 51,735, October 4, 1993), this is a "significant regulatory action". Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Order 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action.

Because this action does not propose or impose any requirements and instead seeks comments and suggestions for the Agency to consider in possibly developing a subsequent proposed rule, the various statutes and Executive Orders that normally apply to rulemaking do not apply in this case. Should EPA subsequently determine to pursue a rulemaking, EPA will address the statutes and Executive Orders as applicable to that rulemaking.

Dated: 2/10/11

(original signed by)

Jared Blumenfeld

Regional Administrator, U.S. Environmental Protection Agency, Region 9

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