CENTRAL VALLEY FLOOD MANAGEMENT PLANNING PROGRAM

FloodSAFE CALIFORNIA

Meeting Summary Environmental Stewardship Scope Definition Work Group Meeting #4

October 13, 2009, 8:30 am – 1:00 pm
Location: DWR Offices – West Sacramento
3500 Industrial Blvd.
West Sacramento, California 95691
Room 119

ENVIRONMENTAL STEWARDSHIP SCOPE DEFINITION (ESSD) WORK GROUP ATTENDANCE:

Name	Organization	Status
Lewis Bair	Reclamation District No. 108, Sacramento River West Side Levee District, Knights Landing Ridge Drainage District	Member
Kelly Briggs	Department of Water Resources - Flood Management	Member
John Cain	American Rivers	Member
Scott Clemons	California Riparian Habitat Joint Venture	Member
Ken Cumming	National Marine Fisheries Service	Member
Eric M. Ginney	Philip Williams & Associates	Member
John Hopkins	Institute for Ecological Health; Northern California Conservation Planning Partners	Member
Michael Picker	Sutter Butte Flood Control Agency	Member
Pia Sevelius	Butte County Resource Conservation District	Member
Monty Schmitt	Natural Resources Defense Council	Member
Alex Stehl	California Department of Parks and Recreation	Member
Susan Tatayon	The Nature Conservancy	Member
Tanis Toland	United States Army Corps of Engineers	Member
Mark Tompkins	Trout Unlimited	Member
Jennifer Hobbs	US Fish and Wildlife Service	Alternate
Terri Roscoe	California Department of Fish and Game	Alternate
Dave Zezulak	California Department of Fish and Game	Alternate
Ken Kirby	Kirby Consulting Group	CVFMP* Executive Sponsor
Ted Frink	California Department of Water Resources	CVFPO**
Marc Hoshovsky	California Department of Water Resources	DWR Lead***
Terri Gaines	California Department of Water Resources	CVFPO**
Elizabeth Hubert	California Department of Water Resources	CVFPO**
Michele Ng	California Department of Water Resources	CVFPO**
Michael Perrone	California Department of Water Resources	DES****

Name	Organization	Status
Yung-Hsin Sun	MWH Americas Inc.	Consultant Program Manager
Matt Young	MWH Americas Inc.	Team
Debra Bishop	EDAW/AECOM	Technical Lead
Lynn Hermansen	EDAW/AECOM	Team
Eric Poncelet	Kearns & West	Facilitator
Ben Gettleman	Kearns & West	Facilitation Support / Note Taker

**Central Valley Flood Management Planning (CVFMP)
**Central Valley Flood Planning Office (CVFPO)
***California Department of Water Resources (DWR)
****Department of Environmental Services

Absent:

Chris Bowles	CBEC, Inc.	Member
Peter Buck	Sacramento Area Flood Control Agency	Member
Ellie Cohen	Point Reyes Bird Observatory	Member
Michael DeSpain	Mechoopda Indian Tribe	Member
Tom Griggs	River Partners	Member
Ashley Indrieri	Family Water Alliance	Member
Clarence Korhonen	City of Elk Grove	Member
Stefan Lorenzato	Yolo County Flood Control & Water Conservation District	Member
Geoff Rabone	Merced Irrigation District	Member
Dan Ray	California Department of Parks and Recreation	Member
Chris Unkel	Ducks Unlimited	Member
Doug Weinrich	United States Fish and Wildlife Service	Member
Carl Wilcox	California Department of Fish and Game	Member
Randy Yonemura	California Indian Heritage Council	Member

Observer:

Mary Matella	UC Berkeley

WORK GROUP HOMEWORK/ACTION ITEMS

1. Send additional proposed text/comments on challenges, opportunities, principles, goals and indicators of success to Ben Gettleman (bgettleman@kearnswest.com) by COB Friday, October 16, 2009.
2. After receiving revised Summary Report from program staff (anticipated deadline 10/30), send final comments to Ben Gettleman (bgettleman@kearnswest.com) by COB Friday, November 6.
3. Review Meeting #4 Summary, and provide comments to Marc Hoshovsky (mhoshovs@water.ca.gov) by COB Monday, October 26, 2009.

ACTION ITEMS: PROGRAM TEAM

1. Incorporate comments made at meeting #4 and additional suggested written edits from work group members on challenges, opportunities, principles, goals, and indicators of success, and incorporate into a revised draft Summary Report. Send revised draft Summary Report to work group members by Friday, October 30, 2009.
2. Incorporate final comments from work group members, and send revised, near-final version of Summary Report to ESSD Work Group for confirmation by Thursday, November 19, 2009.
3. Facilitation team to send Meeting #4 Summary to work group members for review by COB Thursday, October 22, 2009.

MEETING OVERVIEW

The primary purpose of Meeting #4 of the Environmental Stewardship Scope Definition (ESSD) Work Group was to continue to refine the group's key deliverables, including "challenges", "opportunities", "principles" and "environmental stewardship goals", and "indicators of success," and to come to closure on as many of the deliverables as possible.

MEETING GOALS

1. Refine and confirm completion of revised "challenges"; identify priority challenges
2. Refine and confirm completion of revised "opportunities"
3. Refine and confirm completion of revised "principles" for guiding the development, integration and implementation of environmental stewardship features of the CVFPP
4. Refine and confirm completion of revised "environmental stewardship goals"
5. Refine and confirm completion of revised "indicators of success" to evaluate CVFPP's effective integration and implementation of environmental stewardship elements
6. Report back on status of Work Group comments on reference list
7. Discuss possible topics for future environmental stewardship work groups; assess interest in participating

SUMMARY

Welcome and Greetings

Meeting facilitator Eric Poncelet welcomed the meeting participants. He then reviewed the meeting agenda and meeting goals.

Mr. Poncelet referred to the PowerPoint slide of the work group timeline, reminding the group of its current place in the four-meeting process. He also referred to the PowerPoint slide of ESSD work group deliverables, which include:

1. Major environmental challenges
2. Major opportunities
3. List of key principles
4. Environmental goals
5. Measures of success
6. ESSD-specific references

Ken Kirby, CVFMP Executive Sponsor, gave an overview of where the Environmental Stewardship Work Group was in relation to the larger CVFPP development process, including the Regional Conditions Work

Groups. Mr. Kirby announced that the Valley wide Forum – which will bring all interested parties together to discuss the CVFPP – had been scheduled for Tuesday, February 2nd, 2010.

Revised Challenges

Elizabeth Hubert, DWR, summarized how the challenges document evolved since meeting #3. She then invited work group members to comment on the current version.

Key work group comments on the challenges document included the following:

1. Challenge #1 comments
    a. This is an overarching challenge; those that follow in Challenge#2 are actually sub-bullets of #1.
    b. USACE did not design the levee system for water supply or to maintain ecological processes; add "water supply."
    c. The group should think about ways to highlight the conflict between the dual purposes in other challenges. We have to wrestle with this constant state of conflict.
    d. We should integrate "historical" into the statement. Looking back at history, what we currently have represents a legacy of the past.
    e. Regarding the phrase "in addition to conveying design flood flows": in light of climate change, was the system even designed to hold projected flood flows? The system is inadequate.
    f. Water supply is important, but perhaps it should not be included in #1. Change the word "maintain" to "accommodate."
        i. Reply from program staff: The levee system was not designed as a water delivery system. This section is about disrupting dynamic river processes, and water supply doesn't belong in this section. We should find a place for it in other challenges though.
    g. Add "facilitating water supply operations and management" to the end of the sentence.
    h. Change "maintain" to "accommodate", and add "supporting water supply management and hydropower" to the end, and the revised challenge should read: "The existing flood management system was not designed to accommodate both natural ecological and physical processes, convey design flood flows, or support water supply management and hydropower."
2. Challenge #3 should be more specific. "Dams" should be replaced with "flood operation rules at reservoirs."
    a. We shouldn't discount that flood control infrastructure affects the habitat negatively (i.e., Folsom Dam).
    b. We could consider revising the challenge to read: "Dams, including flood operation rules at reservoirs…"
3. Challenges #3 and #5 can be combined, and #5 can be removed.
4. Water supply isn't incorporated in the current list of challenges.
    a. Response from program staff: Challenge #15 addresses water supply.
5. Challenges #7 and #8 can be incorporated into Challenge #2.
    a. Challenge #8 can be become another sub-bullet of Challenge #2.
6. Challenge # 7 addresses water quality, so it should not be removed.
    a. Mercury and its relation to restoration will be a significant issue in the long term.
7. Challenge #26 needs to be clarified.
    a. The word "influenced" is used because it alludes to the wrong incentive.
    b. Reply from program staff: The group should clarify what is meant by "liability"; does it refer to mitigation or to agency liability?
        i. It refers to both.
    c. Suggested revised text: "Maintenance agencies, because of liability, are forced or motivated to take actions that have unintended negative consequences."

8. Identifying Delta-specific challenges is a good idea. There are two parts of the Delta – riverine and tidal – and they have different types of problems.
    a. Levee setbacks in the Delta are extremely difficult to develop due to lowered elevations of adjacent lands.
    b. Reply from program staff: I recommend addressing only the tidal issues for Delta-specific challenges. The riverine areas will likely be addressed in other challenges.
    c. Challenge #11 is covered elsewhere with the exception of the "within the Delta."
    d. Challenges #10–13 should have a better described connection to the flood system and flood management.
        i. Challenge #11 would be better if it were stated in plainer language (i.e., there is no vegetation/habitat in the Delta).
    e. Challenge #11 can be removed and incorporated into #12.
    f. Challenge #11 is the only challenge that addresses terrestrial habitat; it should not be removed.
    g. Revise #11 to: "failure of Delta levees would eliminate large areas of terrestrial habitat."
9. New Challenge: Should there be a new statement about mercury in the Delta?
    a. Is there a link between mercury and the flood management system?
        i. Yes, mercury is currently a flood management challenge.
    b. Two new challenges:
        i. Challenge #36: "Changes in flood operation or inundation could result in increased levels of methyl mercury in the flood system."
        ii. Challenge #37: "Changes in climate or flood operation could increase the mobilization of mercury contaminated sediments in the flood system."
10. New Challenge: Levee infrastructure presents a challenge to restoration.
        i. Challenge #38: "Existing infrastructure in the Delta complicates changing topography and inundation in the Delta."
11. New Challenge: A challenge is needed to address the cumulative impacts of this plan on recovering listed species. There is not enough attention on addressing what it takes to recover the listed species.
    a. The plan should quantify the potential cumulative effects and benefits of restoring species.
    b. Challenge #39: "Quantifying the environmental impacts and benefits of alternative flood management strategies to better understand and meet the needs of species including listed species across the system is difficult."
    c. It is difficult to understand and meet the biological needs of listed species across the entire Central Valley system; it is a system-wide issue.
    d. This planning process represents an opportunity to take what is known and provide remedies for the system as a whole instead of developing solutions piecemeal.
12. New Challenge (#40): "State and federal budgeting processes do not accommodate opportunities for phased and adaptive development of long-term flood management and environmental planning."

In summary, the group removed two existing challenges (#5 and #8) and added four new challenges (#36-40) during the discussion.

Following the group discussion and revision of challenges, facilitator Eric Poncelet provided instructions on how the group would prioritize the challenges during the meeting. Each work group member received a ballot and was asked to rate each challenge as one of three categories of importance:

1. Extremely important for inclusion in the 2012 CVFPP
2. Nice to have in the 2012 CVFPP
3. Could wait for next iteration of the CVFPP (post 2012), or could be handled elsewhere (e.g., other plans)

The results of the prioritization exercise are listed in the Appendix to this summary.

Mr. Poncelet indicated that Program staff would sort the challenges into priority categories and that this information would appear in the next revision of the Summary Report. All ESSD work group members will have the opportunity to comment on the resulting classifications at that time.

Indicators of Success

Ken Kirby, CVFMP Executive Sponsor, introduced the content and process guides for indicators of success.

Key work group comments on the two indicators of success documents included the following:

1. Process Guide
    a. It would be helpful to go across boundaries to other work groups.
        i. Reply from program staff: The other work groups are developing their own indicators. The intention of this exercise is to respond to the question "has environmental stewardship been effectively incorporated into the plan?"
        ii. It would be helpful to compare indicators across groups and see if they mesh.
        iii. Reply from program staff: Our hope is to compare them in the plan.
    b. #2: Add recreation administration to the list of disciplines.
    c. #3: DRERIP (Delta Regional Ecosystem Restoration Implementation Plan) is one of the best technical evaluations available.
        i. It's fine appropriate to add this to the process, but not the content.
    d. Consider adding #5: using DRERIP as a decision-making process.

2. Content Guide
    a. It will be easier to measure these indicators if they are linked to specific objectives.
    b. #5: We should integrate something about thresholds into this indicator. Linking to quantities and processes is an important part of that feedback.
        i. Reply from program staff: We can use the objectives to define the specifics.
        ii. In terms of quantifying, the plan should not start from scratch; it should look at the different plans people have been working on.
            1. Reply from program staff: Incorporating other plans will show up in other measures and is already there (i.e., are you using existing data and plans?).
    c. What is the difference between #4 and #5? #4 says it is about processes, but #5 is also encompassing the process.
        i. #4 is about the functioning; #5 is about the habitat. Connectivity is more than just the spatial distribution of the habitat.
    d. #4: The phrase "development of in-channel" should be re-worded.
        i. It is important to look for opportunities for the restoration of geomorphic processes (i.e., allow the river to do its thing). We should add restoration of geomorphic processes and channel meander.
    e. #5: This indicator should include some key indicator species (e.g., smelt, salmonids) and key processes (e.g., food web, nutrients etc.). The indicator needs thresholds to be meaningful.
        i. How would these thresholds be identified?
        ii. They would have to be developed.
    f. Reply from program staff: Regarding #5, the restoration of species is not the primary objective of this plan. We need to develop an understanding of what needs to be done.
        i. There is a nexus between this effort and recovering species, however.
    g. Use of DRERIP Model
        i. The process guide has indicators whereas the content guide has indicators of whether you've done it, but not how well you've done it. This is a great start, but it needs to be more numerical.
        ii. This could act as a bridge between the process and content.

1. DRERIP can add a numerical context. It involves using detailed models and processes to see how specific actions would result in specific outcomes. We wouldn't have to start over with #1. Instead, the DRERIP process could be used to determine how different scenarios would result.
2. DRERIP was used in the development of the BDCP.
3. At the time, the models used the most up-to-date literature. It was peer reviewed by universities.
4. The challenge of using DRERIP would be determining how to streamline it.
5. By using the model you could identify it in #2 and it would build on existing data.
6. DRERIP was developed to respond to specific actions (i.e. will inundating the Yolo bypass increase habitat for salmonids).
7. The model is designed to assess the worthiness of any specific action. It must be written in a straightforward manner.
    a. It compares the relative worth and risk of an action versus other alternatives.
8. DRERIP was used to evaluate another plan, and this process will likely go hand-in-hand with evaluating regulatory processes.
9. There is a conceptual model, and there is the evaluation model – this is the part that needs to be refined to be more efficient.

iii. Reply from program staff: The next significant challenge is to write meaningful objectives related to environmental stewardship. The group should think about how we might use this process to get to specifics.

h. This process is missing the structure that is accountable to implement these goals. We don't have a mutual understanding of who is going to do it.
    i. New indicator: "Identify responsible parties for implementation."
    ii. The plan needs to show what level of expertise and experience will make this evaluation.
        1. Who will do the evaluation/judge the effectiveness of the plan?
    iii. We should make a first attempt at identifying who the engaged broad representation should be.
        1. Reply from program staff: The content should reflect the outcome of that broad representation. Work group members will have the opportunity to participate in developing screening criteria.

Revised Opportunities

Lynn Hermansen, EDAW/AECOM, summarized how the opportunities document evolved since meeting #3. She then invited work group members to comment on the current version.

Key work group comments on the opportunities document included the following:

1. #27 is a good idea, but it is not realistic for the plan.
2. #4 should be expanded; add "and reduce the frequency and consequences of flooding."
3. #2 – under the first sub-bullet, change "rehabilitate" to "accommodate" or use both.
    a. Also add "restore where appropriate."
        i. Reply from program staff: Use the words you want to see in the plan. There are currently some problematic verbs in the plan.
            1. "Restore" creates a strong reaction.
            2. "Rehabilitate" is a good verb because it is forward looking. This should be defined in the glossary.
    b. The only significant place for dealing with changing processes is within the flood management system.
4. #9: Agencies already work together in a collaborative effort, but I have never seen a collaborative funding effort. Clarification is needed on what that process is.

a. Change “from” to “of.”

Principles for Guiding the Development, Integration and Implementation of Environmental Stewardship Features of the CVFPP

Marc Hoshovsky, DWR Lead, summarized how the principles document evolved since meeting #3. He then invited work group members to comment on the current version.

Key work group comments on the opportunities document included the following:

1. Principle #1
    a. Sustainability is a very important concept here, and it should be clarified. The definition of sustainability needs to be expanded.
    b. Add “including changing climate conditions” at the end of the sentence, and remove “in the context of.”
        i. Revise the text to read “including existing and future changing climate conditions…”

Revised Environmental Stewardship Goals

Lynn Hermansen, EDAW/AECOM, summarized how the environmental stewardship goals document evolved since meeting #3. She then invited work group members to comment on the current version.

Key work group comments on the opportunities document included the following:

1. Goal O1: Should we consider including “sustainability”? Do the words “adaptable and resilient” effectively capture the concept of sustainability?
2. Goal O1: I suggest we change “sustain” to “stabilize.”
3. Goal O1: There is a tension between the goals of reducing risk and protecting public safety; add “both improves public safety.”
    a. Public safety should be added to the glossary.
4. Goal O1: I don’t understand the term “goods and services”; should this be removed?
    a. “Goods and Services” is defined in the glossary and it adds clarification to the statement.

Future Environmental Stewardship Work Group Topics

Facilitator Eric Poncelet announced that there will likely be an additional environmental stewardship-related work group in the future. Likely focal topics include environmental stewardship objectives and management actions. Ken Kirby asked the group how many people would be interested in participating in a future work group, and the majority of the work group raised their hands. Mr. Kirby added that the structure of the next round would likely be different from the current round. Yung-Hsin Sun, MWH, commented that the program team was soliciting comments on how the work groups should operate in the next round. The structure has not yet been finalized.

Work group members provided the following feedback on their experiences in the Environmental Stewardship Scope Definition Work Group:

- The time frame was good; four hours is enough for a meeting. Meetings are more productive in the morning.
- Schedule meetings near the front end of the week (i.e., Monday or Tuesday).
- There are a lot of existing groups working on other projects, and we should find a way to partner with them.
- Program staff did a great job harvesting our ideas and incorporating them into the documents.
- The CVFPP should partner with the Interregional Water Plan group.

Final Comments and Questions

Marc Hoshovsky, DWR Lead, and Ken Kirby, CVFMP Executive Sponsor, thanked the work group members for their participation and their engagement in the process.

Appendix – Results of the Prioritization of Challenges Exercise

	Challenge	Extremely important for inclusion in the 2012 CVFPP	Nice to have in the 2012 CVFPP	Could wait for next iteration of the CVFPP (post 2012), or could b handled elsewhere (e.g., other plans)
1	The existing flood management system was not designed to maintain both natural ecological and physical processes in addition to conveying design flood flows.	21	1	0
2	Dams, levees and bank revetments disrupt fluvial geomorphic processes (e.g., channel meander, migration, sediment transport) that are required for the long-term physical and biological sustainability of the river ecosystem. • Bank revetments limit the physical processes vital for ecosystem function by preventing recruitment of riparian vegetation and eliminating ecological functions associated with riparian habitat within rip-rapped areas. • Levees and channel incision isolate and disconnect floodplains from their rivers, disrupting or eliminating the suite of ecological processes (e.g., groundwater recharge, riparian vegetation recruitment, nutrient exchange, sediment deposition, fish rearing) that are supported by or enhanced by seasonal floodplain inundation.	19	1	1
18	Levee setback opportunities are limited by existing development, geographical constraints, lack of funding, local zoning restrictions, local economic considerations, private property rights, water rights, and urban and agricultural uses.	18	3	0
4	Dams and other diversion features within floodways create physical barriers to fish passage throughout the river systems.	18	2	2
3	Dams alter in-stream flow regimes that are necessary to sustain many aquatic species and aquatic habitats.	17	3	1
14	The effects of climate change stress the environment, increase flood risk, and exacerbate inter-annual changes in water supply.	17	1	3
6	Current standard operating practices for construction and maintenance of the flood management system can negatively affect riparian and wetland habitats, and can fragment remnant habitat into disconnected patches. • Levee and floodway maintenance practices reduce habitat complexity that many native aquatic and terrestrial species are dependant on.	16	4	1
31	A lack of funding constrains project development and long-term land management.	15	4	3
32	Funding has not been available to support development of a comprehensive, long-term, ecological corridor-based approach.	15	4	2
13	The high risk of future levee failures in the Delta reduces the probability of long-term success for restoring terrestrial habitat on Delta lands below sea level. Levee failures are currently	15	4	1

	Challenge	Extremely important for inclusion in the 2012 CVFPP	Nice to have in the 2012 CVFPP	Could wait for next iteration of the CVFPP (post 2012), or could b handled elsewhere (e.g., other plans)
	due to poorly constructed levees, extensive land subsidence, and erosive capacity of river channels. Failures are more likely in the future with climate change due to increasing sea levels adding pressure on levees, and increasing storm intensity leading to higher wave fetch and levee erosion.			
19	Urban development in floodplains encroaches on existing habitat and eliminates opportunities for future habitat restoration and agricultural uses.	14	5	2
28	Maintenance required to meet flood conveyance needs can hamper development of high quality habitat.	14	5	2
15	Providing for flood management and for agricultural/urban water supply needs may conflict with the attainment of ecosystem goals.	14	4	3
23	Permit processes and requirements delay maintenance by being complex, inflexible, not well integrated, and time consuming.	13	6	3
16	Flood system operation and maintenance has lacked a comprehensive, long-term, corridor-based approach.	13	5	2
39	Quantifying environmental impacts and benefits of alternate flood management strategies to better meet the needs of species, including at-risk species, is difficult	13	4	0
34	More stable, sustainable sources of funding for maintenance are needed to prevent significant periods of deferred maintenance and the risks, costs and environmental impacts associated with them.	12	6	3
40	State/Federal budgeting processes do not accommodate opportunities for phased and adaptive development of long term flood management and environmental planning.	11	2	1
11	Impairments to the ecological functions of aquatic communities, as well as reductions in the extent, distribution, connectivity and condition of historical wetland and upland habitats, within the Delta has reduced the distribution, abundance, diversity, and long-term viability of native wildlife and plants.	11	1	3
17	Riparian restoration may infringe upon water rights and the rights of private landowners, and willing sellers of land suitable for riparian restoration are limited.	10	10	2
7	The lack of functioning floodplains contributes to impaired water quality due to reduced infiltration and natural treatment.	10	9	3
35	Institutional limitations create barriers to coordination and shared responsibility between agencies for cooperative planning, funding and implementation of projects.	10	9	3
9	Simplified flow regimes and disturbances associated with construction and maintenance of the flood management system encourage replacement of native species with invasive species and increase competition for resources (e.g., space, light, nutrients, water) between native and invasive species.	10	9	2
25	Regulatory compliance is challenging due to poor coordination	10	9	2

	Challenge	Extremely important for inclusion in the 2012 CVFPP	Nice to have in the 2012 CVFPP	Could wait for next iteration of the CVFPP (post 2012), or could b handled elsewhere (e.g., other plans)
	and a lack of shared understanding and vision between and within agencies.			
26	Local agencies may be influenced to remove habitat to eliminate liability for future work.	10	7	4
24	Subjective policies and "mitigation" may not fit the geographic or ecosystem needs of the river.	10	5	5
10	Hydrodynamic conditions within the Delta, influenced in part by upstream water flow management, stress aquatic species by reducing the historical salinity gradients, which in turn creates conditions favorable for invasive species, disrupts aquatic food webs, reduces habitat suitability for native species, and increases predation and competitive pressures on native species.	10	2	4
30	Flood, transportation, and utility infrastructure constrain restoration and flood maintenance activities.	9	10	2
33	Multiple agency funding streams often required to implement multi-objective projects are lacking.	9	10	1
12	The Delta has a very limited supply of land at or above sea-level that is suitable for long-term terrestrial habitat restoration	9	8	4
27	Levee maintenance is hampered by the lack of flexible approaches for mitigation.	8	8	5
29	Special-status species seasonal work windows constrain when construction and maintenance can occur and techniques that may be employed.	8	7	5
22	Negative experiences and public perceptions that have resulted previous planning efforts may create a lack of support for local conservation programs.	7	7	8
38	Existing infrastructure in the Delta makes it difficult to change topography and inundation	6	8	3
20	Bank revetments, maintenance activities, infrastructure, and some habitat restoration projects contribute to the lack of public access within flood control system and limit options for the future expansion of public access opportunities.	6	5	10
36	Changes in flood operation and inundation could change levels of methyl mercury	5	8	3
37	Changes in flood operation or climate could increase transport of mercury	3	9	4
21	The operation of reservoirs for flood management may limit recreational uses.	3	7	11
5	The management of river flows reduces habitat complexity and limits access to habitat that many native aquatic and terrestrial species are dependent on.	N/A	N/A	N/A
8	Levees confine the capacity of river channels and their floodplains to move and change in response to changing hydrological conditions.	N/A	N/A	N/A