

SAIC DRAFT

Summary of Conservation Measures Expected to Contribute Towards Achieving Biological Goals and Objectives

Note to Reviewers: This handout presents proposed conservation measures that contribute towards achieving each of the draft BDCP biological goals and objectives¹ for aquatic resources. Table 1a identifies conservation measures intended to achieve ecosystem-, natural community-, and general fish species-level goals and objectives. Table 1b identifies conservation measures intended to achieve covered fish species-specific goals and objectives. These tables will be populated in the next draft, which will serve as a basis for assessing the adequacy of the proposed conservation measures in achieving draft goals and objectives.

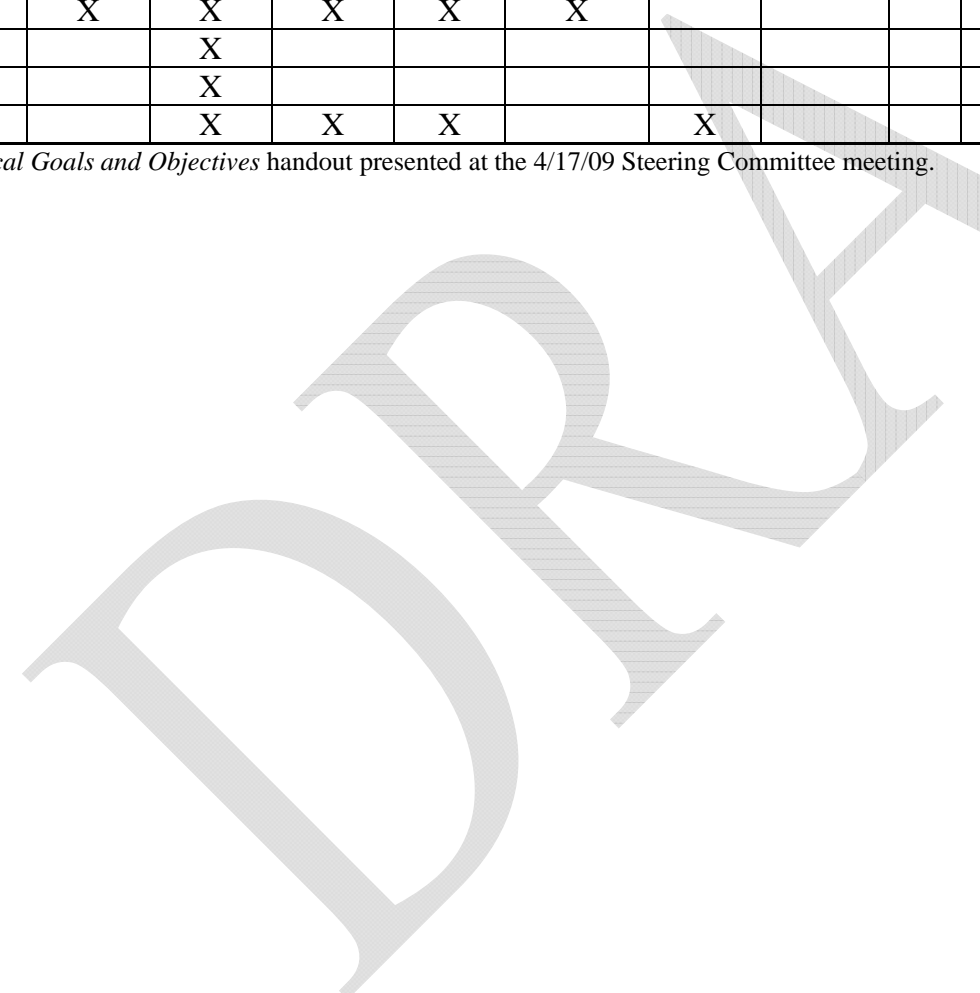
Table 1a. Conservation Measures that Contribute Towards Achieving Ecosystem, Aquatic Natural Community, and General Fish Species Goals and Objectives.

| Ecological Scale | Ecosystem | | | | | | | | | | Natural communities | | | General covered species | | | | |
|---|-----------------------------------|---------------------------------|-----------------------|---------------------|----------------------------|-------------------------------------|--------------------------------|--|-----------------------------------|---|--|---------------------------|---|---|---------------------------------------|--|---------------------------------|--|
| | Aquatic Goal ¹ | | | | | 2. Increase food | | 3. Reduce effects of non-native species | | 4. Reduce effects of contaminants | 5. Improve the extent, location, function, and connectivity of natural communities | | 1. Improve natural communities for Delta native species | | 1. Reduce unnatural mortality | | 2. Reduce impacts of hatcheries | |
| Objective ¹ | 1.1: Flow for downstream movement | 1.2: Flow for upstream movement | 1.3: Flow for habitat | 1.4: Variable flows | 1.5: Improve Flow Patterns | 2.1: Increase aquatic invertebrates | 3.1: Manage non-native species | 3.2: Minimize future invasions of non-native species | 4.1: Reduce loads of contaminants | 5.1: Protect and expand availability of terrestrial and aquatic natural communities | 1.1: Increase connectivity with floodplains | 1.2: Increase tidal marsh | 1.3: Increase riparian forest and scrub | 1.1: Reduce entrainment at non-project diversions | 1.2: Minimize adverse harvest effects | | 2.1: Minimize hatchery effects | 2.2: Maintain or establish genetic refugia for delta smelt and longfin smelt |
| Conservation Measure | | | | | | | | | | | | | | | | | | |
| HRCM1/2: Floodplain-downstream of Vernalis | | | | | | X | | | | X | X | | | | | | | |
| HRCM3: Floodplain-SD | | | | | | X | | | | X | X | | | | | | | |
| HRCM4: Tidal marsh-Yolo/Cache | | | | | | X | | | | X | | X | | | | | | |
| HRCM5: Tidal marsh-Cosumnes/Mokelumne | | | | | | X | | | | X | | X | | | | | | |
| HRCM6: Tidal marsh-West Delta | | | | | | X | | | | X | | X | | | | | | |
| HRCM7: Tidal marsh-South Delta | | | | | | X | | | | X | | X | | | | | | |
| HRCM8: Tidal marsh-East Delta | | | | | | X | | | | X | | X | | | | | | |
| HRCM9: Tidal marsh-Suisun | | | | | | X | | | | X | | X | | | | | | |
| HRCM11/14: Riparian - 5,000 acres in ROA's | | | | | | X | | | | X | | | X | | | | | |
| HRCM12: Channel Margin-Sutter/Steamboat | | | | | | X | X | | | X | | | X | | | | | |
| HRCM13: Channel margin-South Delta | | | | | | X | X | | | X | | | X | | | | | |
| HRCM15: Channel margin along non-Project levees | | | | | | X | X | | | X | | | X | | | | | |
| HRCM16: Tidal marsh-ROAs | | | | | | X | | | | X | | X | | | | | | |
| HRCM17: Flood bypass east of Sac Ship Channel | | | | | | X | | | | X | X | | | | | | | |
| HRCM##: Channel margin – 20 miles channel banks | | | | | | X | X | | | X | | | X | | | | | |
| OSCM1: Ammonia/um reduction | | | | | | X | | | X | | | | | | | | | |
| OSCM2: EDC reduction | | | | | | | | | X | | | | | | | | | |
| OSCM3: MeHg reduction | | | | | | | | | X | | | | | | | | | |
| OSCM4: Pesticide/herbicide reduction | | | | | | X | | | X | | | | | | | | | |

| Ecological Scale | Ecosystem | | | | | | | | | | Natural communities | | | General covered species | | | | |
|---|-----------------------------------|---------------------------------|-----------------------|---------------------|----------------------------|-------------------------------------|---|--|-----------------------------------|---|---|---|---|---|---------------------------------------|--|---------------------------------|--|
| Aquatic Goal ¹ | 1. Mimic natural hydrodynamics | | | | | 2. Increase food | 3. Reduce effects of non-native species | | 4. Reduce effects of contaminants | 5. Improve the extent, location, function, and connectivity of natural communities | | 1. Improve natural communities for Delta native species | | | 1. Reduce unnatural mortality | | 2. Reduce impacts of hatcheries | |
| Objective ¹ | 1.1: Flow for downstream movement | 1.2: Flow for upstream movement | 1.3: Flow for habitat | 1.4: Variable flows | 1.5: Improve Flow Patterns | 2.1: Increase aquatic invertebrates | 3.1: Manage non-native species | 3.2: Minimize future invasions of non-native species | 4.1: Reduce loads of contaminants | 5.1: Protect and expand availability of terrestrial and aquatic natural communities | 1.1: Increase connectivity with floodplains | 1.2: Increase tidal marsh | 1.3: Increase riparian forest and scrub | 1.1: Reduce entrainment at non-project diversions | 1.2: Minimize adverse harvest effects | | 2.1: Minimize hatchery effects | 2.2: Maintain or establish genetic refugia for delta smelt and longfin smelt |
| Conservation Measure | | | | | | | | | | | | | | | | | | |
| OSCM5: Stormwater/urban pollution | | | | | | X | | | X | | | | | | | | | |
| OSCM7: DO in Stockton DWSC | | | | | | | | | | X | | | | | | | | |
| OSCM8: DO in managed seasonal wetlands | | | | | | | | | X | | | | | | | | | |
| OSCM10: Non-natives on recreational vessels | | | | | | | | X | | | | | | | | | | |
| OSCM11: Rapid response to non-natives | | | | | | | | X | | | | | | | | | | |
| OSCM13: SAV/FAV removal | | | | | | | X | | | | | | | | | | | |
| OSCM14: Harvest of non-natives | | | | | | | X | | | | | | | | | | | |
| OSCM16: Reduce illegal harvest | | | | | | | | | | | | | | X | | | | |
| OSCM17: Splittail harvest | | | | | | | | | | | | | | X | | | | |
| OSCM18: Hatchery and Genetic Management Plans | | | | | | | | | | | | | | | | | X | |
| OSCM19: Mark hatchery fish | | | | | | | | | | | | | | X | | | X | |
| OSCM20: Artificial propagation of smelt | | | | | | | | | | | | | | | | | | X |
| OSCM21: Non-project diversions | | | | | | X | | | | | | | X | | | | | |
| OSCM24: Localized predator control | | | | | | | X | | | | | | | | | | | |
| OSCM25: Non-physical barriers | X | | | | | | | | | | | | | | | | | |
| WOCML1: North Delta diversion | X | X | X | X | X | X | | | | X | | | | | | | | |
| WOCMN2: Yolo Bypass | | X | | X | X | X | | | | X | X | | | | | | | |
| WOCML2 (Long-term): Yolo Bypass | | X | | X | X | X | | | | X | X | | | | | | | |
| WOCMN5: Delta Cross Channel | X | | X | | X | | | | | X | | | | | | | | |
| WOCML5: Delta Cross Channel | X | | X | | X | | | | | X | | | | | | | | |
| WOCMN6: Rio Vista flows | X | X | X | X | X | | | | | X | | | | | | | | |
| WOCML6: Rio Vista flows | X | X | X | X | X | | | | | X | | | | | | | | |
| WOCM8 (Long-term): 2-gates | | | | | | | | | | | | | | | | | | |
| WOCMN9: Delta Outflow | X | X | X | X | X | | | | | X | | | | | | | | |
| WOCML9: Delta Outflow | X | X | X | X | X | | | | | X | | | | | | | | |
| WOCMN11: MS Salinity Control Gate | X | | X | X | X | | | | | X | | | | | | | | |
| WOCML11: MS Salinity Control Gate | X | | X | X | X | | | | | X | | | | | | | | |
| WOCMN12: South Delta diversions | X | X | X | X | X | X | | | | X | | | | | | | | |

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| Conservation Measure | | | | | | | | | | | | | | | | | | | |
| WOCML12: South Delta diversions | X | X | X | X | X | X | | | | X | | | | | | | | | |
| WOCMN14: Delta salinity standards | | | X | | | | | | | | | | | | | | | | |
| WOCML14: Delta salinity standards | | | X | | | | | | | | | | | | | | | | |
| WOCML# : Dual conveyance operation | | | X | X | X | | X | | | | X | | | X | | | | | |

¹ Based on the Working Draft BDCP HCP/NCCP Biological Goals and Objectives handout presented at the 4/17/09 Steering Committee meeting.



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