

List of Action Categories and Actions

Comments on Action Categories and Actions

Fax return by January 10, 1996 to (916) 654-9780
 or mail to 1416 Ninth Street, Room 1155
 Sacramento, CA 95814

Name: Mike McDonald - NCPA

	Importance 1 - 5	Core Action C
1-Low 5-High		
Action Categories to Restore Bay-Delta System Habitats		
Restoration of Bay-Delta System Shallow Water (Tidal) Habitat	<u>3</u>	<u>C</u>
Actions:		
-Convert existing leveed lands to tidal action	<u>3</u>	<u>C</u>
-Protect existing shallow habitat from erosion	<u>3</u>	<u>C</u>
-Restore tidal action to existing diked wetlands	<u>3</u>	<u>C</u>
-Reconstruct levees to include shallow water habitat	<u>1</u>	<u>C</u>
-Fill deep water to produce shallow habitat	<u>1</u>	<u>C</u>
Restoration of Bay-Delta System Riverine Habitat	<u>4</u>	<u>C</u>
Actions:		
-Reconstruct river banks and shallow areas	<u>4</u>	<u>C</u>
-Restore and preserve channel islands	<u>3</u>	<u>C</u>
-Restore natural channel configurations	<u>2</u>	<u>C</u>
-Modify channel/levee construction practices to include riverine elements	<u>4</u>	<u>C</u>
Restoration of Bay-Delta System Riparian Habitat	<u>4</u>	<u>C</u>
Actions:		
-Improve and protect degraded riparian habitats	<u>4</u>	<u>C</u>
-Establish new areas of riparian habitat	<u>4</u>	<u>C</u>
-Reestablish historic riparian areas	<u>3</u>	<u>C</u>
-Modify levee maintenance practices	<u>4</u>	<u>C</u>
-Protect existing riparian habitat	<u>4</u>	<u>C</u>

	Importance 1 - 5	Core Action C
Restoration of Bay-Delta System Wetland Habitat	4	C
Actions:		
-Restore, enhance, and create wetlands	4	
-Expand wetland acquisition programs	3	
-Convert agricultural lands to wetlands	2	
-Protect existing wetland habitat	4	C
Restoration of Bay-Delta System Terrestrial Habitat	3	C
Actions:		
-Protect existing upland habitat	2	C
-Establish upland habitat on levees	2	
-Establish upland habitat on fallowed croplands	2	
-Establish oak woodlands on suitable soils	3	
-Encourage wildlife-friendly agricultural practices	3	
-Preserve agricultural land uses providing habitat	3	
-Clean up sites contaminated with toxic substances	3	
Implementation of Integrated Habitat Management Programs	5	C
Actions:		
-Establish regional ecosystem restoration guidelines	5	C
-Implement integrated regional habitat management	5	C
-Develop cooperative management agreements	5	C
-Establish mitigation banking program	5	C
Establishment of Floodways and Meander Belts	5	C
Actions:		
-Relocate levees to widen floodways	5	C
-Allow river channels to meander	4	
-Acquire Delta islands as overflow areas	5	
-Restore floodways as habitat corridors	4	
Control of Introduced Species	5	C
Actions:		
-Remove or reduce nuisance species in key habitats	5	C
-Improve regulation of ballast-water releases	5	C
-Improve border inspection practices	5	
-Inspect for invasions of nuisance species	5	
-Modify habitat to favor native species	5	

	Importance 1 - 5	Core Action C
Delta Waterfowl Habitat Management	3	1
Actions:		
-Manage agricultural crops for waterfowl forage production	4	
-Improve management of public waterfowl areas	4	
-Implement terrestrial predator control programs	4	
-Increase sources and availability of wildlife forage	4	

Action Categories to Restore Upstream Habitat

Restoration of Upstream Anadromous Fish Habitat

Actions:		
-Manage flows and temperatures in upstream habitats	4	
-Restore and replenish spawning gravels	4	
-Restore channel configurations	4	
-Restore shoreline habitat conditions	4	
-Modify gravel mining practices	4	
-Improve floodway drainage to reduce fish stranding	4	

Improvements for Upstream Fish Passage

Actions:		
-Modify passage at upstream dams and other barriers	4	
-Modify natural barriers to improve passage	4	

Restoration of Upstream Riparian Habitat

Actions:		
-Restrict livestock grazing in riparian corridors	4	
-Revegetate degraded riparian habitats	4	
-Protect riparian lands through purchase/easements	4	
-Restore flows to dewatered riparian habitats	4	

Restoration of Upstream Wetland Habitat

Actions:		
-Modify floodways to support wetland habitats	4	
-Reuse agricultural drainage to create wetlands	4	
-Reuse urban wastewater effluent to create wetlands	4	
-Manage groundwater recharge for wetland habitat	4	

Core
Importance Action
1 - 5 C

Action Categories to Reduce Effects of Diversions

Delta Inflow/Outflow/Export Management	<u>5</u>	<u>C</u>
Actions regarding Delta Inflows:		
-Modify upstream consumptive use	<u>3</u>	
-Modify upstream reservoir operations criteria	<u>3</u>	
-Modify Delta inflow timing pattern	<u>4</u>	
-Provide instream pulse flows for fish passage	<u>2</u>	<u>C</u>
-Provide instream flows for fish attraction	<u>2</u>	
Actions regarding Delta Diversions and Outflows:		
-Modify volumes and timing of exports	<u>4</u>	<u>C</u>
-Modify in-Delta consumptive use	<u>4</u>	
-Modify central Delta channel operations	<u>4</u>	
-Modify export operations criteria	<u>5</u>	<u>C</u>
-Establish a Delta watermaster to manage flows	<u>3</u>	
-Use real-time monitoring and adaptive management	<u>5</u>	<u>C</u>
Modification of Diversion Timing Patterns	<u>4</u>	
Actions:		
-Modify diversion timing of in-Delta diversions	<u>4</u>	
-Modify diversion timing of export diversions	<u>4</u>	
-Coordinate SWP/CVP diversion timing	<u>4</u>	
-Modify diversion timing through Montezuma Salinity Control Gate	<u>3</u>	
-Use real-time monitoring and adaptive management	<u>5</u>	
Increased Rates of Diversion Capacity	<u>2</u>	
Actions:		
-Obtain approvals for expanded export capacities	<u>2</u>	
-Enlarge export pumping capacities	<u>1</u>	
-Increase diversion capability at Red Bluff Diversion Dam	<u>1</u>	
Acquisition of Long-Term Water Supplies for Fish and Wildlife	<u>5</u>	<u>C</u>
Actions:		
-Acquire water to augment instream flows	<u>5</u>	<u>C</u>
-Obtain shifts in timing of instream flows	<u>4</u>	
-Obtain shifts in diversion timing patterns	<u>4</u>	

	Importance 1 - 5	Core Action C
-Acquire water for refuge habitat use	<u>5</u>	C
-Modify water law to establish instream rights	<u>3</u>	
Installation and Improvement of Fish Screens	<u>4</u>	C
Actions: -Improve screens at Delta export pumps	<u>3</u>	
-Improve other existing fish screen systems	<u>4</u>	
-Install screens on other in-Delta diversions	<u>4</u>	CC
-Install screens on upstream diversions	<u>4</u>	CC
-Consolidate and screen existing small diversions	<u>3</u>	
-Enforce screening requirements	<u>4</u>	C
Improvement of Bay-Delta System Fish Migration	<u>5</u>	C
Actions: -Install barriers to block fish movement into Old River	<u>5</u>	CC
-Install barriers to keep fish in Sacramento River	<u>5</u>	CC
-Install barriers to divert fish from Sacramento River to western distributaries	<u>3</u>	
-Operate fish barrier on San Joaquin River at Merced River confluence in fall	<u>5</u>	C
-Provide instream pulse flows for fish passage	<u>5</u>	C
-Provide instream flows for fish attraction	<u>4</u>	
Improvement of Fish Salvage Operations	<u>2</u>	
Actions: -Improve design of salvage facilities	<u>2</u>	
-Improve operation of salvage facilities	<u>2</u>	
-Improve fish hauling and release procedures	<u>2</u>	
Removal and Control of Aquatic Predators	<u>4</u>	
Actions: -Harvest predators at Delta export pumps	<u>4</u>	
-Harvest predators in upstream habitats	<u>3</u>	
Action Categories to Manage the Enhancement of Anadromous Fish Populations		
Fish Hatchery Operations	<u>3</u>	
Actions: -Expand hatchery capacities	<u>2</u>	
-Construct new hatcheries on the San Joaquin River	<u>2</u>	
-Improve hatchery operations	<u>3</u>	

	Importance 1 - 5	Core Action C
-Reduce hatchery effects on wild fish populations	5	
-Implement tagging of hatchery-bred fish	5	
-Establish new captive breeding programs	5	
Fish Harvest Management	5	
Actions:		
-Improve regulation of commercial take	5	
-Improve regulation of recreational take	5	
-Improve enforcement of harvest regulations	5	

Action Categories for Reducing Reliance on Delta Exports

Desalination	1	
Actions:		
-Expand desalination of Southern California supplies	1	
-Expand desalination of San Joaquin Valley supplies	1	
-Improve desalination technologies and cost	1	
-Educate users about desalination feasibility	1	
Water Conservation	5	
Actions:		
-Increase use of district-wide conservation practices	5	
-Increase use of on-farm conservation practices	5	
-Increase use of municipal conservation practices	5	
-Increase use of industrial conservation practices	5	
-Implement financial incentive policies	5	
-Implement conservation-oriented rate structures	5	
-Educate users about conservation technologies	5	
Water Reclamation	5	
Actions:		
-Recharge groundwater with reclaimed water	5	
-Use reclaimed water for agricultural irrigation	5	
-Reclaim saline agricultural drainage water	5	
-Recycle and treat water for potable reuse	5	
-Use reclaimed water for nonpotable urban uses	5	
-Use reclaimed water for landscape irrigation	5	
-Use reclaimed water for power plant cooling	5	
-Use reclaimed water for industrial processes	5	
-Use reclaimed water to repel salinity intrusion	5	
-Improve reclamation technologies and cost	5	
-Educate public about water reclamation	5	

	Importance 1 - 5	Core Action C
Land Retirement and Fallowing	<u>4</u>	<u>C</u>
Actions:		
-Encourage land fallowing during drought periods	<u>4</u>	
-Develop incentive programs for land retirement	<u>3</u>	
-Purchase lands or easements	<u>4</u>	<u>C</u>
-Retire lands with drainage problems	<u>4</u>	<u>C</u>
Water Pricing	<u>2</u>	
Actions:		
-Establish incentives for pricing to reduce demand	<u>2</u>	
-Educate users about pricing feasibility	<u>2</u>	
-Remove legal obstacles to pricing incentive programs	<u>2</u>	
Action Categories to Enhance Water Supplies		
Watershed Management	<u>4</u>	<u>C</u>
Actions:		
-Manage vegetation cover to increase yield	<u>3</u>	
-Manage riparian zones to protect water quality	<u>4</u>	<u>C</u>
-Manage land uses to reduce sedimentation	<u>4</u>	
-Modify weather to increase precipitation	<u>1</u>	
New or Expanded Onstream Storage	<u>4</u>	<u>C</u>
Actions:		
-Construct new storage facilities south of the Delta	<u>1</u>	
-Construct new storage facilities north of the Delta	<u>4</u>	<u>C</u>
-Enlarge existing onstream storage reservoirs	<u>4</u>	<u>C</u>
-Modify operations of existing onstream reservoirs	<u>2</u>	
New or Expanded Offstream Storage	<u>4</u>	<u>C</u>
Actions:		
-Construct new storage facilities south of the Delta	<u>2</u>	
-Construct new storage facilities north of the Delta	<u>4</u>	<u>C</u>
-Construct new storage facilities in Delta	<u>2</u>	
-Enlarge existing offstream storage reservoirs	<u>4</u>	
-Modify operations of existing offstream reservoirs	<u>2</u>	
Groundwater Banking and Conjunctive Use	<u>5</u>	<u>C</u>
Actions:		
-Establish incentives for conjunctive use	<u>5</u>	<u>C</u>
-Modify Water Code to encourage conjunctive use	<u>5</u>	<u>C</u>
-Establish conjunctive use programs	<u>5</u>	<u>C</u>

	Importance 1 - 5	Core Action C
-Store groundwater south of the Delta	5	✓
-Store groundwater north of the Delta	5	✓
-Implement techniques to increase groundwater recharge	5	✓
Improvement of Through-Delta Conveyance	3	
Actions:		
-Increase capacities of existing east-side channels	3	
-Increase flows from the Sacramento River to the central Delta	2	
-Modify Delta levees to increase flow cross sections	2	
-Construct pump/siphon systems between Delta channels	2	
-Expand existing intakes at the Delta export facilities	2	
-Construct expanded export intake/forebay pumping system	2	
Construction and Improvement of Conveyance Facilities	4	
Actions:		
-Construct east-side isolated transfer system	3	
-Construct west-side isolated transfer system	3	
-Construct small isolated transfer facility	3	
-Convert Delta islands to storage/conveyance system	3	
-Construct conveyance to offstream storage	3	
-Construct conveyance to groundwater storage	3	
Changes in Locations of Diversions	2	
Actions:		
-Relocate Delta export pumps from key habitats	2	
-Relocate other in-Delta diversions for more reliable supplies	2	
-Consolidate in-Delta agricultural diversions	2	
-Relocate upstream diversions from key habitats	2	
-Improve diversion designs when relocating	2	
Action Categories to Increase Supply Predictability		
Water Transfers	3	
Actions:		
-Modify Water Code to ease transfers	3	
-Improve procedures for transfer permitting	3	
-Coordinate diversion and conveyance of transfers	3	

	Importance 1 - 5	Core Action C
Long-Term Planning for Drought Contingencies	5	C
Actions:		
-Increase water storage capacities at user locations	3	
-Establish incentives for long-term planning	3	C
-Conduct Integrated Resources Planning	3	
-Establish incentives for long-term conservation	4	C
-Develop alternate supplies for drought situations	4	
Water Resources Data and Information Management	3	
Actions:		
-Establish a comprehensive water data system	3	
-Implement real-time data management system	3	
-Integrate data for adaptive management decisions	3	
-Establish accessible data management system	3	
Establishment of Institution for Integrated Long-Term Water Management	5	C
Actions:		
-Establish long-term guarantees for management	4	
-Establish institution to implement guarantees	3	
-Coordinate multiagency roles in management	3	C
-Coordinate groundwater and surface water management	3	C
-Establish incentives for cooperation/coordination	4	C
-Establish a public awareness and education program	3	
Establishment of Export Capacity Market	3	
Actions:		
-Establish procedures for allocation of export capacity	3	
-Establish institution to allocate export capacity	3	
-Coordinate water transfers and export capacity	3	
-Market export capacity for environmental benefits	3	
Integration of Land Use and Water Supply Planning	3	C
Actions:		
-Coordinate land uses with water supplies	3	
-Encourage local determination of supplies available	3	C
-Encourage local assessment of water supply reliability	3	C

Action Categories for Managing Water Quality

Installation and Operation of Flow Barriers

- Actions: -Install flow barriers to manage south Delta quality
-Install weirs to control salinity intrusion

2
2
2

Management of Agricultural Drainage

- Actions: -Implement source control regulations for pollutants
-Implement pollutant-load limits in San Joaquin River
-Reduce or control volume of agricultural discharges
-Modify cropping and irrigation practices
-Export agricultural drainage to other watersheds
-Retire lands with drainage disposal problems
-Improve pest-control practices
-Avoid use of high-salinity irrigation water
-Manage irrigation tailwater to reduce pesticides
-Manage drainage timing to reduce instream impacts
-Treat drainage to remove salt or other pollutants
-Dilute pollutants in Delta inflows from SJR using stored water

5
5
4
5
4
2
5
4
4
3
3
4
4
4
3
4

Management of Urban/Industrial Drainage and Wastewater Discharge

- Actions: -Retain and manage stormwater runoff
-Implement urban awareness/education programs
-Treat discharges to remove problem constituents
-Construct wetlands to treat wastewater effluent
-Increase key nutrient inputs to estuary
-Enforce wastewater discharge requirements
-Prevent toxic discharges from industrial plants

4
3
3
3
4
3
4
4
4

Dredged Material Management

- Actions: -Limit dredging to slack tides
-Limit dredging to avoid fish migration periods
-Use techniques to localize sediment movement
-Dispose dredged materials at nonaquatic or other suitable sites
-Remove contaminated sediments in critical habitat sites
-Ensure material used for levee maintenance is noncontaminated

3
2
2
2
2
2
2
2

	Importance 1 - 5	Core Action C
Management of Abandoned-Mine Drainage	2	
Actions:		
-Manage discharges from abandoned mines	2	
-Remediate abandoned mining sites discharging pollutants	2	
Action Categories for Improving System Reliability		
Levee Maintenance and Stabilization	4	C
Actions:		
-Maintain and stabilize existing levees	4	C
-Modify agricultural practices to reduce subsidence	4	
-Use infilling to correct past subsidence	4	
-Implement uniform maintenance standards	4	C
-Provide funding for maintenance and stabilization	4	C
Improvement of Flood Protection Levels and Seismic Stabilities	5	
Actions:		
-Reconstruct levees to higher design standards	5	
-Reconstruct levees to higher seismic standards	5	
-Relocate levees to more stable sites	5	
-Widen floodways to increase flood conveyance	5	
-Establish and manage flood overflow areas	5	
- Project Reoperation	5	
Rerouting and Protection of Infrastructure from Flooding and Seismic Risk	2	
Actions:		
-Maintain/reconstruct levees around infrastructure	2	
-Reconstruct infrastructure to increase reliability	2	
-Relocate/reroute infrastructure	2	
Establishment of Long-Term Funding Mechanisms	5	C
Actions:		
-Establish a disaster contingency funding program	5	
-Establish a Bay-Delta financing authority	5	
-Provide low-cost debt financing for local agencies	5	
-Establish a bond financing mechanism	5	C
-Establish a statewide water utility surcharge	5	C

COMMENTS: _____

