

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

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

	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	4	
-Convert agricultural lands to wetlands	4	
-Protect existing wetland habitat	4	
Restoration of Bay-Delta System Terrestrial Habitat	3	C
Actions: -Protect existing upland habitat	3	
-Establish upland habitat on levees	3	
-Establish upland habitat on fallowed croplands	3	
-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	
-Implement integrated regional habitat management	5	
-Develop cooperative management agreements	5	
-Establish mitigation banking program	5	
Establishment of Floodways and Meander Belts	5	C
Actions: -Relocate levees to widen floodways	5	
-Allow river channels to meander	5	
-Acquire Delta islands as overflow areas	5	
-Restore floodways as habitat corridors	5	
Control of Introduced Species	5	C
Actions: -Remove or reduce nuisance species in key habitats	5	
-Improve regulation of ballast-water releases	5	
-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	C
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	4	C
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	4	C
Actions:		
-Modify passage at upstream dams and other barriers	4	
-Modify natural barriers to improve passage	4	
Restoration of Upstream Riparian Habitat	4	C
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	4	C
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 5 C

Actions regarding Delta Inflows:

- Modify upstream consumptive use 3 |
- Modify upstream reservoir operations criteria 3 |
- Modify Delta inflow timing pattern 4 |
- Provide instream pulse flows for fish passage 2 |
- Provide instream flows for fish attraction 2 |

Actions regarding Delta Diversions and Outflows:

- Modify volumes and timing of exports 4 |
- Modify in-Delta consumptive use 4 |
- Modify central Delta channel operations 4 |
- Modify export operations criteria 5 |
- Establish a Delta watermaster to manage flows 5 |
- Use real-time monitoring and adaptive management 5 |

Modification of Diversion Timing Patterns

- Actions:
- Modify diversion timing of in-Delta diversions 4 |
 - Modify diversion timing of export diversions 4 |
 - Coordinate SWP/CVP diversion timing 4 |
 - Modify diversion timing through Montezuma Salinity Control Gate 3 |
 - Use real-time monitoring and adaptive management 5 |

Increased Rates of Diversion Capacity

- Actions:
- Obtain approvals for expanded export capacities 2 |
 - Enlarge export pumping capacities 1 |
 - Increase diversion capability at Red Bluff Diversion Dam 1 |

Acquisition of Long-Term Water Supplies for Fish and Wildlife

- Actions:
- Acquire water to augment instream flows 5 |
 - Obtain shifts in timing of instream flows 4 |
 - Obtain shifts in diversion timing patterns 4 |

	Importance	Core Action
	1-5	C
-Acquire water for refuge habitat use	<u>5</u>	C
-Modify water law to establish instream rights	<u>3</u>	C
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>	CB
-Install screens on upstream diversions	<u>4</u>	CB
-Consolidate and screen existing small diversions	<u>3</u>	CB
-Enforce screening requirements	<u>4</u>	CB
Improvement of Bay-Delta System Fish Migration	<u>5</u>	C
Actions:		
-Install barriers to block fish movement into Old River	<u>5</u>	CB
-Install barriers to keep fish in Sacramento River	<u>5</u>	CB
-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>	CB
-Provide instream pulse flows for fish passage	<u>5</u>	CB
-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>3</u>	
-Improve hatchery operations	<u>3</u>	

	Importance	Core Action
	1-5	C

- Reduce hatchery effects on wild fish populations
- Implement tagging of hatchery-bred fish
- Establish new captive breeding programs

W		
W		
W		

Fish Harvest Management

- Actions:
- Improve regulation of commercial take
 - Improve regulation of recreational take
 - Improve enforcement of harvest regulations

W		
W		
W		

Action Categories for Reducing Reliance on Delta Exports

Desalination

- Actions:
- Expand desalination of Southern California supplies
 - Expand desalination of San Joaquin Valley supplies
 - Improve desalination technologies and cost
 - Educate users about desalination feasibility

W		
W		
W		
W		

Water Conservation

- Actions:
- Increase use of district-wide conservation practices
 - Increase use of on-farm conservation practices
 - Increase use of municipal conservation practices
 - Increase use of industrial conservation practices
 - Implement financial incentive policies
 - Implement conservation-oriented rate structures
 - Educate users about conservation technologies

W		
W		
W		
W		
W		
W		
W		

Water Reclamation

- Actions:
- Recharge groundwater with reclaimed water
 - Use reclaimed water for agricultural irrigation
 - Reclaim saline agricultural drainage water
 - Recycle and treat water for potable rouse
 - Use reclaimed water for nonpotable urban uses
 - Use reclaimed water for landscape irrigation
 - Use reclaimed water for power plant cooling
 - Use reclaimed water for industrial processes
 - Use reclaimed water to repel salinity intrusion
 - Improve reclamation technologies and cost
 - Educate public about water reclamation

W		
W		
W		
W		
W		
W		
W		
W		
W		
W		
W		

Core
Importance Action
1-5 C

Land Retirement and Fallowing

4	C
---	---

- Actions:
- Encourage land fallowing during drought periods
 - Develop incentive programs for land retirement
 - Purchase lands or easements
 - Retire lands with drainage problems

4	
3	
4	
4	

Water Pricing

2	
---	--

- Actions:
- Establish incentives for pricing to reduce demand
 - Educate users about pricing feasibility
 - Remove legal obstacles to pricing incentive programs

2	
2	
2	

Action Categories to Enhance Water Supplies

Watershed Management

4	C
---	---

- Actions:
- Manage vegetation cover to increase yield
 - Manage riparian zones to protect water quality
 - Manage land uses to reduce sedimentation
 - Modify weather to increase precipitation

3	
4	
4	
1	

New or Expanded Onstream Storage

4	C
---	---

- Actions:
- Construct new storage facilities south of the Delta
 - Construct new storage facilities north of the Delta
 - Enlarge existing onstream storage reservoirs
 - Modify operations of existing onstream reservoirs

1	
4	
4	
2	

New or Expanded Offstream Storage

4	C
---	---

- Actions:
- Construct new storage facilities south of the Delta
 - Construct new storage facilities north of the Delta
 - Construct new storage facilities in Delta
 - Enlarge existing offstream storage reservoirs
 - Modify operations of existing offstream reservoirs

2	
4	
2	
4	
2	

Groundwater Banking and Conjunctive Use

5	C
---	---

- Actions:
- Establish incentives for conjunctive use
 - Modify Water Code to encourage conjunctive use
 - Establish conjunctive use programs

5	
5	
5	

	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	3	—
-Modify Delta levees to increase flow cross sections	3	—
-Construct pump/siphon systems between Delta channels	3	—
-Expand existing intakes at the Delta export facilities	3	—
-Construct expanded export intake/forebay pumping system	3	—
Construction and Improvement of Conveyance Facilities	4	—
Actions:		
-Construct east-side isolated transfer system	4	—
-Construct west-side isolated transfer system	4	—
-Construct small isolated transfer facility	4	—
-Convert Delta islands to storage/conveyance system	4	—
-Construct conveyance to offstream storage	4	—
-Construct conveyance to groundwater storage	4	—
Changes in Locations of Diversions	3	—
Actions:		
-Relocate Delta export pumps from key habitats	3	—
-Relocate other in-Delta diversions for more reliable supplies	3	—
-Consolidate in-Delta agricultural diversions	3	—
-Relocate upstream diversions from key habitats	3	—
-Improve diversion designs when relocating	3	—
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		
-Establish incentives for long-term planning		
-Conduct Integrated Resources Planning		
-Establish incentives for long-term conservation		
-Develop alternate supplies for drought situations		
Water Resources Data and Information Management	5	
Actions: -Establish a comprehensive water data system		
-Implement real-time data management system		
-Integrate data for adaptive management decisions		
-Establish accessible data management system		
Establishment of Institution for Integrated Long-Term Water Management	5	C
Actions: -Establish long-term guarantees for management		
-Establish institution to implement guarantees		
-Coordinate multiagency roles in management		
-Coordinate groundwater and surface water management		
-Establish incentives for cooperation/coordination		
-Establish a public awareness and education program		
Establishment of Export Capacity Market	5	
Actions: -Establish procedures for allocation of export capacity		
-Establish institution to allocate export capacity		
-Coordinate water transfers and export capacity		
-Market export capacity for environmental benefits		
Integration of Land Use and Water Supply Planning	5	C
Actions: -Coordinate land uses with water supplies		
-Encourage local determination of supplies available		
-Encourage local assessment of water supply reliability		

	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	2
Actions:		
-Maintain and stabilize existing levees	4	2
-Modify agricultural practices to reduce subsidence	4	2
-Use infilling to correct past subsidence	4	2
-Implement uniform maintenance standards	4	2
-Provide funding for maintenance and stabilization	4	2
Improvement of Flood Protection Levels and Seismic Stabilities	5	1
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	2
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	
-Establish a statewide water utility surcharge	5	

COMMENTS: _____

