

# 1998 CALIFORNIA 303(d) LIST AND TMDL PRIORITY SCHEDULE

Approved by USEPA: 12-May-99

REGION TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
PCBs									
5	R	ORESTIMBA CREEK		Industrial Point Sources Urban Runoff/Storm Sewers	Low	12	Miles	0104	1211
541.100									
			Chlorpyrifos	Agriculture	Medium	10	Miles	0198	1211
			Diazinon	Agriculture	Medium	10	Miles	0198	1211
			Unknown Toxicity	Agriculture	Medium	3	Miles	0101	1211
542.400									
5	R	PANOCHÉ CREEK			Low	25	Miles	0104	1211
			Mercury	Resource extraction sources are abandoned mines. Resource Extraction	Low	40	Miles	0104	1211
			Sedimentation/Siltation	Agriculture	Low	40	Miles	0104	1211
				Agriculture-grazing Road Construction	Low	40	Miles	0104	1211
			Selenium	Agriculture Agriculture-grazing Road Construction	Low	40	Miles	0104	1211
506.000									
5	R	PIT RIVER			Low	100	Miles	0104	1211
			Nutrients	Agriculture Agriculture-grazing	Low	100	Miles	0104	1211
			Org. enrichment/Low D.O.	Agriculture Agriculture-grazing	Low	100	Miles	0104	1211
			Temperature	Agriculture Agriculture-grazing	Low	100	Miles	0104	1211
500.000									
5	R	SACRAMENTO RIVER (RED BLUFF TO DELTA)			High	30	Miles	0198	1205
			Diazinon	Agriculture	High	30	Miles	0198	1205
			Mercury	Resource extraction sources are abandoned mines. Resource Extraction	Medium	185	Miles	0101	1211
			Unknown Toxicity	Source Unknown	Medium	185	Miles	0101	1211

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5	R	SACRAMENTO RIVER (SHASTA DAM TO RED BLUFF)	508.100	Cadmium <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	High	40	Miles	0196	1201
				Copper <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	High	40	Miles	0196	1201
				Unknown Toxicity	Source Unknown	Medium	50	Miles	0101	1211
				Zinc <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	High	40	Miles	0196	1201
5	R	SACRAMENTO SLOUGH	520.100	Diazinon	Agriculture Urban Runoff/Storm Sewers	Medium	1	Miles	0198	1211
				Mercury	Source Unknown	Medium	1	Miles	0198	1211
5	R	SALT SLOUGH	541.200	Boron	Agriculture	Low	15	Miles	0198	1211
				Chlorpyrifos	Agriculture	Low	15	Miles	0198	1211
				Diazinon	Agriculture	Low	15	Miles	0198	1211
				Electrical Conductivity	Agriculture	Low	15	Miles	0198	1211
				Selenium	Agriculture	High	15	Miles	0592	1298
				Unknown Toxicity	Agriculture	Low	15	Miles	0198	1211
5	R	SAN CARLOS CREEK	542.200	Mercury <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	Low	1	Miles	0104	1211
5	R	SAN JOAQUIN RIVER	544.000	Boron	Agriculture	High	130	Miles	0697	1299
				Chlorpyrifos	Agriculture	High	130	Miles	0198	1205
				DDT	Agriculture	Low	130	Miles	0104	1211

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5	R	SPRING CREEK	524.400	Diazinon	Agriculture	High	130	Miles	0198	1205
				Electrical Conductivity	Agriculture	High	130	Miles	0697	1299
				Group A Pesticides	Agriculture	Low	130	Miles	0104	1211
				Selenium	Agriculture	High	50	Miles	0592	1200
				Unknown Toxicity	Source Unknown	Medium	130	Miles	0198	1211
5	R	SPRING CREEK	524.400	Acid Mine Drainage	Resource extraction sources are abandoned mines.	High	5	Miles	0198	1211
				Cadmium	Resource extraction sources are abandoned mines.	High	5	Miles	0198	1211
				Copper	Resource extraction sources are abandoned mines.	High	5	Miles	0198	1211
				Zinc	Resource extraction sources are abandoned mines.	High	5	Miles	0198	1211
5	R	STANISLAUS RIVER (LOWER)	535.300	Diazinon	Agriculture	High	48	Miles	0198	1205
				Group A Pesticides	Agriculture	Low	48	Miles	0104	1211
				Unknown Toxicity	Source Unknown	Medium	48	Miles	0101	1211
5	R	STOCKTON DEEP WATER CHANNEL	544.000	Dioxin	This listing was made by USEPA.	Medium	2	Miles		
				Furans	This listing was made by USEPA.	Medium	2	Miles		
				PCBs	This listing was made by USEPA.	Medium	2	Miles		
5	R	STRONG RANCH SLOUGH	519.210	Chlorpyrifos	Urban Runoff/Storm Sewers	Medium	5	Miles	0198	1211

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5	R	SULFUR CREEK	513.510	Diazinon <i>The agricultural source of diazinon for these waterbodies is from aerial deposition.</i>	Agriculture Urban Runoff/Storm Sewers	Medium	5	Miles	0198	1211
5	R	TEMPLE CREEK	531.400	Mercury <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	High	7	Miles	0198	1205
5	R	TOWN CREEK	526.200	Ammonia Electrical Conductivity	Dairies Dairies	Low	10	Miles	0104	1211
5	R	TOWN CREEK	526.200	Cadmium <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	Low	1	Miles	0104	1211
5	R	TOWN CREEK	526.200	Copper <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	Low	1	Miles	0104	1211
5	R	TOWN CREEK	526.200	Lead <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	Low	1	Miles	0104	1211
5	R	TOWN CREEK	526.200	Zinc <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	Low	1	Miles	0104	1211
5	R	TUOLUMNE RIVER (LOWER)	535.500	Diazinon	Agriculture	High	32	Miles	0198	1205
5	R	TUOLUMNE RIVER (LOWER)	535.500	Group A Pesticides	Agriculture	Low	32	Miles	0104	1211
5	R	TUOLUMNE RIVER (LOWER)	535.500	Unknown Toxicity	Source Unknown	Medium	32	Miles	0101	1211
5	R	WEST SQUAW CREEK	505.100	Cadmium <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	Medium	2	Miles	0104	1211
5	R	WEST SQUAW CREEK	505.100	Copper <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	Medium	2	Miles	0104	1211
5	R	WEST SQUAW CREEK	505.100	Lead <i>Resource extraction sources are abandoned mines.</i>	Resource Extraction	Medium	2	Miles	0104	1211

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5	R	WILLOW CREEK (WHISKEYTOWN) 524.630	Zinc	Resource extraction sources are abandoned mines. Resource Extraction	Medium	2	Miles	0104	1211
			Acid Mine Drainage	Resource extraction sources are abandoned mines. Resource Extraction	Low	3	Miles	0104	1211
			Copper	Resource extraction sources are abandoned mines. Resource Extraction	Low	3	Miles	0104	1211
			Zinc	Resource extraction sources are abandoned mines. Resource Extraction	Low	3	Miles	0104	1211
5	W	GRASSLANDS MARSHES 541.200	Electrical Conductivity	Agriculture	Medium	8224	Acres	0101	1211
			Selenium	Agriculture	High	8224	Acres	0592	1298
6	L	BRIDGEPORT RES 630.300	Nutrients	Livestock grazing in wetlands upgradient of reservoir. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting. Agriculture	High	3000	Acres		
			Sedimentation/Siltation	Watershed disturbance including livestock grazing. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting. Source Unknown	High	3000	Acres		
6	L	CROWLEY LAKE 603.100	Arsenic	To be addressed as part of Watershed Management Initiative (WMI) for upper watershed, beginning with Years 3-5 of WMI program, if resources permit. Natural Sources	High	5280	Acres		
			Nutrients	Source Unknown	High	5280	Acres		
6	L	DONNER LAKE 635.200	Priority Organics	PCBs in fish and sediment exceed Maximum Tissue Residue Level criteria; unknown nonpoint sources. Phase I Truckee River sediment TMDL projected for completion in 1999. Additional monitoring/study necessary to determine sources/cleanup potential for priority organics. TMDLs for organics to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting. Source Unknown	Low	960	Acres		

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6	L	EAGLE LAKE (2)	637.300	Org. enrichment/Low D.O. <i>Nutrients from wastewater disposal to land, livestock grazing, other watershed disturbance. Problems being addressed through sewerage of septic system development and RWQCB's ongoing nonpoint source program. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Range Land Land Development Septage Disposal Nonpoint Source	High	25000	Acres	0198	0199
6	L	GRANT LAKE	601.000	Arsenic <i>Targeted for "easy" (already funded) TMDL documentation that arsenic from natural sources.</i>	Natural Sources	High	1095	Acres	0198	0199
6	L	HAIWEE RES	603.300	Copper <i>Copper problems related to algicide use to prevent taste/odor problems in drinking water supplies. Further biological monitoring being required. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Habitat Modification Nonpoint Source	Low	1800	Acres		
6	L	HORSESHOE LAKE (2)	628.000	Sedimentation/Siltation <i>Further monitoring may permit delisting. TMDLs, if needed to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Construction/Land Development	Low	1	Acres		
6	L	INDIAN CREEK RES	632.200	Nutrients <i>Reservoir formerly received tertiary-treated domestic wastewater from South Tahoe Public Utility District; unreliability of treatment process led to eutrophication. District is now restoring reservoir through flushing with fresh water.</i>	Wastewater	High	160	Acres	0198	0199

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6	L	LAKE TAHOE	634.000	Nutrients	Watershed disturbance, urban stormwater, atmospheric deposition. Lake is targeted for sediment and nutrient TMDLs but ability to complete them depends on availability of reliable watershed model. Model calibration, and additional watershed assessment, were funded as a result of 1997 presidential forum; TMDLs for entire watershed to be coordinated with Tahoe Regional Planning Agency's 2001 evaluation of attainment of environmental threshold standards.	High	120000	Acres		
				Silviculture						
				Construction/Land Development						
				Urban Runoff/Storm Sewers						
				Other Urban Runoff						
				Wastewater						
				Hydromodification						
				Drainage/Filling Of Wetlands						
				Marinas						
				Atmospheric Deposition						
				Highway Maintenance And Runoff						
				Nonpoint Source						
				Sedimentation/Siltation						
				Watershed disturbance including logging, construction, urban and highway runoff. Development of TMDLs depends on availability of reliable watershed model. Funding for final calibration of U.C. Davis Tahoe Research group model, and for additional watershed assessment, was provided as a result of 1997 presidential forum. TMDLs to be coordinated with Tahoe Regional Planning Agency's 2001 evaluation of attainment of environmental threshold standards.						
				Source Unknown						
6	L	PLEASANT VALLEY RES	603.200	Org. enrichment/Low D.O.	Problems related to watershed disturbance/reservoir management to be addressed together with problems in Crowley Lake as part of the Watershed Management Initiative; TMDLs to be addressed during years 3-5 of the next 13 years of the TMDL development process, if resources permit.	High	115	Acres		
				Flow Regulation/Modification						
				Nonpoint Source						
6	L	STAMPEDE RES	636.000	Pesticides	Sources unknown; no significant agriculture or residential development in watershed; feasibility of reducing loading probably low. Recalculation of Maximum Tissue Residue Level criteria makes delisting possible in next cycle. TMDLs, if needed, will be addressed during years 6-13 of the next 13 years of the TMDL development process.	Low	3444	Acres		
				Source Unknown						

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6	L	TINEMAHIA RES	603.200	Arsenic TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.	Natural Sources Upstream Impoundment Nonpoint Source	Low	180	Acres		
				Metals Watershed disturbance, upstream geothermal sources of arsenic. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.	Source Unknown	Low	180	Acres		
6	L	TOPAZ LAKE	631.100	Sedimentation/Siltation Agriculture, river channel damage during January 1997 flood. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.	Agriculture Nonpoint Source	High	2300	Acres		
6	L	TWIN LAKES	603.100	Nutrients Watershed disturbance, urban runoff; to be addressed during years 6-13 of the next 13 years of the TMDL development process, if resources permit.	Land Development Other Urban Runoff Nonpoint Source	Low	3	Acres		
6	R	AMARGOSA RIVER	609.000	Salinity/TDS/Chlorides Internally drained river with natural high salinity; targeted for "easy" (already funded) TMDL using 1998 Section 104/106 grant funds	Natural Sources	Medium	198	Miles	0198	0199
6	R	ASPEN CREEK	632.100	Metals Acid drainage from Leviathan Mine; Lahontan RWQCB mine workplan to be documented as Phase I TMDL using 1998 Section 104/106 grant funds.	Natural Sources	High	4	Miles	0198	0199

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6 R	AURORA CANYON CREEK	630.300	Habitat alterations Livestock grazing. Listed on basis of limited data; further monitoring may permit delisting. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.		Low	13	Miles			
Range Land										
6 R	BEAR CREEK (R6)	635.200	Sedimentation/Siltation Creek affected by hydrologic modification for ski resort/snow making pond-affected by sediment from pond dam break. Phase I sediment TMDL for Truckee River and tributaries projected to be completed for Basin Plan amendments in 1999, using 1998 Section 104/106 grant funds; Phase II work has received Section 205(j) funding and will begin in 1998.		High	4	Miles	1195	0199	
6 R	BLACKWOOD CREEK	634.200	Sedimentation/Siltation Creek affected by past gravel quarry operations and other watershed disturbance. Existing USFS restoration program to be documented as phase I "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.		High	8	Miles	0198	0199	
Hydromodification Nonpoint Source										
Silviculture Construction/Land Development Resource Extraction Hydromodification Nonpoint Source										
6 R	BODIE CREEK	630.200	Metals Affected by drainage from inactive mines, mine tailings in creek. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.		High	6	Miles			
Resource Extraction Mine Tailings Nonpoint Source										
6 R	BRONCO CREEK	635.200	Sedimentation/Siltation Watershed disturbance in naturally highly erosive watershed; targeted for sediment TMDL as part of larger Truckee River watershed effort. Phase I TMDL to be completed in 1999 using 1998 Section 104/106 grant funds; Phase II, using Section 205j funds, to begin in 1998.		High	1	Miles	1195	0199	
Natural Sources Nonpoint Source										
6 R	BRYANT CREEK	632.100	Metals Affected by acid mine drainage from Leviathan Mine. Problem being addressed by RWQCB through Leviathan Mine workplan; workplan will be documented as Phase I "easy" (already funded) TMDL in 1998 using Section 104/106 grant funds.		High	10	Miles	0198	0199	
Acid Mine Drainage Nonpoint Source										

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6 R	CARSON RIVER, E FK	632.100	Nutrients <i>Probably livestock grazing. River was listed due to data collected by State of NV near state line in 1980s, probably reflecting drought conditions. NV has since delisted the river for these pollutants. Further monitoring may support delisting in CA. TMDLs, if needed, to be addressed during years 3-5 of the next 13 years of the TMDL development process, resources permitting.</i>	Range Land Nonpoint Source	High	1	Miles		
6 R	CLARK CANYON CREEK	630.300	Habitat alterations <i>Livestock grazing. Listed on basis of very limited information. CRMP has been implemented since 1980s; further monitoring may support delisting. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Range Land	Medium	5	Miles		
6 R	CLEARWATER CREEK	630.400	Sedimentation/Siltation <i>Livestock grazing. Listed on basis of limited data; additional monitoring may support delisting. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Range Land	Medium	7	Miles		
6 R	COTTONWOOD CREEK (1)	603.300	Water/Flow Variability <i>Lower reach of creek affected by diversions for LADWP system; TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Range Land	High	7	Miles		
6 R	EAST WALKER RIVER	630.000	Metals <i>Inactive mines and other watershed disturbance; highway runoff. Listed initially due to elevated fish tissue levels; needs further monitoring for metals impacts and may be considered for delisting for metals in next cycle. TMDLs, if needed, will be addressed during years 6-13 of the next 13 years of the TMDL development process.</i>	Flow Regulation/Modification Range Land Other Urban Runoff Resource Extraction Natural Sources Nonpoint Source	Medium	8	Miles		
			Sedimentation/Siltation <i>River affected by turbid releases from Bridgeport Reservoir; major sediment discharge resulted litigation by State Department of Fish and Game. Further monitoring of beneficial use recovery may support delisting. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Hydromodification	High	8	Miles		

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6	R	GOODALE CREEK	603.300	Sedimentation/Siltation Potential for delisting following further monitoring. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.	Range Land	Low	9	Miles		
6	R	GRAY CREEK (R6)	635.000	Sedimentation/Siltation Disturbance of naturally highly erosive watershed; Phase I of the TMDL in progress, to be completed as Basin Plan amendment using 1998 Section 104/106 grant funds. Section 205(j) funding has been obtained for monitoring to begin in 1998 for use in Phase II of the TMDL.	Natural Sources Nonpoint Source	High	4	Miles	1195	0199
6	R	GREEN CREEK	630.400	Habitat alterations Creek affected by hydroelectric dam construction, livestock grazing. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process.	Range Land Hydromodification	Medium	1	Miles		
6	R	GREEN VALLEY LAKE CREEK	628.200	Priority Organics Priority organics (source unknown) were detected in stream in 1980's; no monitoring since. Stream needs reevaluation to determine need for listing. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.	Range Land Hydromodification	Low	5	Miles		
6	R	HEAVENLY VALLEY CREEK	634.100	Sedimentation/Siltation Creek affected by ski resort construction and maintenance activities. Recently adopted resort master plan will phase future development based on accomplishment of watershed restoration projects. Master Plan currently scheduled to be documented as Phase I "easy" (already funded) TMDL using 1998 Section 104/106 grant funds. (Needs further discussion with USFS staff; recent monitoring data indicate possible need for additional sediment modeling.)	Construction/Land Development Land Development Hydromodification Habitat Modification Recreational Activities Nonpoint Source	High	4	Miles	0198	0199
6	R	HOT CREEK (1)	631.400	Metals Natural geothermal drainage; targeted for "easy" (already funded) TMDL using 1998 Section 104/106 grant funds	Natural Sources	Medium	5	Miles	0198	0199

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6	R	HOT CREEK (2)	Metals	Natural geothermal springs. Targeted for "easy" (already funded) TMDL using Section 104/106 grant funds. Natural Sources	High	10	Miles	0198	0199
6	R	HOT SPRINGS CANYON CREEK	Sedimentation/Siltation	Listed on basis of limited data; further monitoring may support delisting. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process. Range Land	Medium	1	Miles		
6	R	INDIAN CREEK (1)	Habitat alterations	Watershed disturbance from livestock grazing. TMDLs to be addressed as part of Carson River WMI implementation. Pasture Land	High	7	Miles		
6	R	LASSEN CREEK	Flow alterations	Agricultural diversions. TMDL to be addressed during years 6-13 of the next 13 years of the TMDL development process, as resources permit. Flow Regulation/Modification	Medium	6	Miles		
6	R	LEE VINING CREEK	Flow alterations	Affected by diversions by Los Angeles Dept. of Water and Power. Court ordered restoration project is underway; will probably be documented as Phase I "easy" (already funded) TMDL during years 3-5 of the 13 years of TMDL implementation, resources permitting. Flow Regulation/Modification	High	11	Miles		
6	R	LEVIATHAN CREEK	Metals	Lower reach of creek affected by acid drainage from Leviathan Mine; reach has been diverted around tailings as part of ongoing pollution abatement project. Lahontan RWQCB workplan to be documented as Phase I "easy" (already funded) TMDL using 1998 Section 104/106 grant funds. Acid Mine Drainage	High	2	Miles	0198	0199
6	R	LITTLE HOT CREEK	Arsenic	Natural (geothermal?) sources: targeted for "easy" (already funded) TMDL using 1998 Section 104-106 grant funds. Natural Sources	Medium	1	Miles	0198	1299
6	R	MAMMOTH CREEK	Metals	Mammoth Creek is the headwaters of Hot Creek (2); However, it is affected by urban runoff from the Town of Mammoth Lakes as well as natural sources of metals. Urban runoff problems at Mammoth are being addressed through the RWQCB's ongoing regulation and enforcement problems and the WMI. Natural Sources Nonpoint Source	High	22	Miles		

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6 R	MILL CREEK (1)	601.000	Flow alterations Creek affected by water diversions. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.	Water Diversions	High	7	Miles		
6 R	MILL CREEK (3)	641.300	Sedimentation/Siltation Livestock grazing. TMDL to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.		Medium	6	Miles		
6 R	MOJAVE RIVER	628.200	Priority Organics River was 303(d) listed in 1980's due to subsurface "Barstow slug" of toxic pollutants from various urban/industrial sources; later monitoring shows main "slug" has dissipated but some areas of pollution remain. River is currently a WMI priority watershed with emphasis on revision of TDS/salinity objectives. TMDLs for "mini-slug" pollutants to be addressed, if necessary, during years 6-13 of the next 13 years of the TMDL development process, resources permitting.	Range Land	High	10	Miles		
6 R	MONITOR CREEK	632.100	Metals Drainage from inactive mines; other watershed disturbance. Problems to be addressed as part of Carson River WMI effort during years 3-5 of the next 13 years of TMDL development.	Land Disposal Hazardous Waste	High	4	Miles		
6 R	OWENS RIVER	603.300	Arsenic Arsenic from natural geothermal sources; amounts affected by reservoir management. TMDLs for Long HA (603.10) to be addressed during years 3-5 of the next 13 years of the TMDL development process, as part of WMI, if resources permit. TMDLs for Upper and Middle Owens HAs (603.20 and 603.30) to be addressed during years 6-13 if resources permit.	Resource Extraction Natural Sources Nonpoint Source	High	120	Miles		
6 R	PINE CREEK (2)	637.300	Habitat alterations TMDLs for Long HA (630.10) to be addressed in years 3-5 of the next 13 years of the TMDL development process as part of the WMI, resources permitting. TMDLs for Upper and Middle Owens HAs to be addressed during years 6-13 of the next 13 years of TMDL development, resources permitting.	Natural Sources	High	120	Miles		
Flow Regulation/Modification									
6 R	PINE CREEK (2)	637.300	Sedimentation/Siltation Livestock grazing; other watershed disturbance. Watershed/fisheries restoration by existing CRMP group to be documented as "easy" (already funded) TMDL, or as basis for delisting, using 1998 Section 104/106 grant funds.	Range Land Nonpoint Source	High	24	Miles	0198	0198

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# 1998 CALIFORNIA 303(d) LIST AND TMDL PRIORITY SCHEDULE

Approved by USEPA: 12-May-99

REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
6	R	ROUGH CREEK	630.000	Habitat alterations <i>Livestock grazing impacts. Additional monitoring may provide grounds for delisting. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Range Land	Medium	8	Miles		
6	R	SKEDADDLE CREEK	637.100	High Coliform Count <i>BLM land led to reports of high coliform levels several years ago; current status unknown. Further monitoring may support delisting. TMDLs, if needed, will be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Range Land	Low	5	Miles		
6	R	SNOW CREEK	634.200	Habitat alterations	Land Development Drainage/Filling Of Wetlands Nonpoint Source	High	1	Miles		
6	R	SQUAW CREEK	635.200	Sedimentation/Siltation <i>Watershed heavily disturbed by ski resort construction and construction of other facilities for 1960 Winter Olympics; part of creek was channelized. Lower creek has very high bedload sediment transport. Severe watershed damage occurred from January 1997 flooding. Phase I sediment TMDL to be completed using 1998 Section 104/106 grant funds; Phase II to begin in 1998 using Section 205(j) funds.</i>	Construction/Land Development Other Urban Runoff Hydromodification Drainage/Filling Of Wetlands Highway Maintenance And Runoff Natural Sources Recreational Activities Nonpoint Source	High	8	Miles	1195	0199
6	R	SUSAN RIVER	637.200	Unknown Toxicity <i>River affected by natural and man-made geothermal discharges and by agricultural drainage. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</i>	Agriculture Other Urban Runoff Highway Maintenance And Runoff Natural Sources Source Unknown Nonpoint Source	High	59	Miles		

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REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
6	R	TRUCKEE RIVER	635.200	Sedimentation/Siltation Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersheds. Phase I sediment TMDL to be completed using 1998 Section 104/106 grant funds; Phase II work, using Section 205(j) funds to begin in 1998.	Source Unknown	High	106	Miles	1195	0199
6	R	TUTTLE CREEK	603.300	Habitat alterations Livestock grazing problems. Potential for delisting following further monitoring. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.	Range Land	Low	10	Miles		
6	R	WARD CREEK	634.200	Sedimentation/Siltation Watershed disturbance. TMDLs to be developed as part of those for Lake Tahoe during years 6-13 of the next 13 years of the TMDL development process, as resources permit.	Land Development Nonpoint Source	High	7	Miles		
6	R	WEST WALKER RIVER	631.000	Sedimentation/Siltation Agriculture, flooding, highway construction. (Watershed severely impacted by January 1997 flood; 8 miles of highway washed out and reconstructed under emergency regulations with no CEQA analysis.) TMDLs to be addressed through WMF process (once priority watersheds are rotated), probably during years 6-13 of the next 13 years of the TMDL development process, as resources permit.	Agriculture Nonpoint Source	High	1	Miles		
6	R	WOLF CREEK (1)	632.100	Sedimentation/Siltation Livestock grazing. Problems to be addressed as part of Carson River WMI effort during years 3-5 of the next 13 years of the TMDL development process, resources permitting.	Range Land	High	14	Miles		
6	S	ALKALI LAKE, LOWER	641.000	Salinity/TDS/Chlorides Natural internally drained lake; affected by agricultural diversions from tributaries. Natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.	Flow Regulation/Modification Natural Sources Nonpoint Source	Medium	10855	Acres	0198	0199
6	S	ALKALI LAKE, MIDDLE	641.000	Salinity/TDS/Chlorides Natural internally drained lake affected by agricultural diversions from tributaries. Natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.	Flow Regulation/Modification Natural Sources Nonpoint Source	Medium	39475	Acres	0198	0199

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REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
6	S	ALKALI LAKE, UPPER	641.000	Salinity/TDS/Chlorides <i>Natural internally drained lake affected by agricultural diversions from tributaries. Natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.</i>	Flow Regulation/Modification Natural Sources Nonpoint Source	Medium	24250	Acres	0198	0199
6	S	DEEP SPRINGS LAKE	605.000	Salinity/TDS/Chlorides <i>Natural internally drained lake; "natural impairment" to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.</i>	Nonpoint Source Nonpoint Source	Medium	1400	Acres	0198	0199
6	S	HONEY LAKE	637.200	Arsenic <i>Arsenic is from ultimately from natural sources, but amounts are affected by agricultural/geothermal drainage. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, probably in connection with TMDLs for Susan River system.</i>	Flow Regulation/Modification Natural Sources Nonpoint Source	Medium	55327	Acres		
6	S	HONEY LAKE WILDFOWL MGMT. PONDS	637.200	Salinity/TDS/Chlorides <i>Natural internally directed lake affected by agricultural and geothermal drainage. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, as resources permit (probably in connection with TMDLs for the Susan River.)</i>	Agriculture Natural Sources Nonpoint Source	Medium	55327	Acres		
				Flow alterations <i>Ponds were affected by 1980s drought. Further monitoring may support delisting for this parameter. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process.</i>	Agricultural Water Diversion	Medium	500	Acres		
				Metals <i>Ponds were affected by 1980s drought; further monitoring may support delisting for this parameter. TMDLs, if needed, to be addressed during years 6-10 of the next 13 years of the TMDL development process, as resources permit.</i>	Agriculture Geothermal Development Natural Sources	Medium	500	Acres		

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REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
6	S	LITTLE ALKALI LAKE	603.100	Salinity/TDS/Chlorides	<p>Ponds affected by agricultural, geothermal drainage. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</p> <p>Agriculture</p> <p>Geothermal Development</p> <p>Natural Sources</p>	Medium	500	Acres	0198	0199
6	S	MONO LAKE	601.000	Trace Elements	<p>Geothermal and agricultural drainage. Further monitoring might support delisting. TMDLs, if needed, to be addressed during years 6-13 of the next 13 years of the TMDL development process, resources permitting.</p> <p>Geothermal Development</p> <p>Natural Sources</p>	Medium	500	Acres	0198	0199
6	S	OWENS LAKE	603.300	Salinity/TDS/Chlorides	<p>Naturally impaired (by geologic/geothermal sources); natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.</p> <p>Natural Sources</p>	Medium	1	Acres	0198	0199
6	S	OWENS LAKE	603.300	Salinity/TDS/Chlorides	<p>Naturally saline, internally drained lake with increased TDS due to diversions of tributaries by Los Angeles Dept. of Water and Power. Natural high levels of toxic elements to be addressed through "easy" (already funded) TMDL using Section 104/106 grant funds.</p> <p>Flow Regulation/Modification</p> <p>Natural Sources</p> <p>Source Unknown</p>	High	35000	Acres	0198	0199
6	S	OWENS LAKE	603.300	Salinity/TDS/Chlorides	<p>Natural internally drained saline lake with lake level decreased, salinity increased due to diversions of tributaries by Los Angeles Department of Water and Power. Pending project by Great Basin Unified Air Pollution Control District may restore some beneficial uses to part of lakebed. TMDLs to be addressed during years 6-13 of the next 13 years of the TMDL development process, as resources permit. [20,000 acre area figure reflects past Corps of Engineers delineation of brine pool; natural lake bed is much larger.]</p> <p>Flow Regulation/Modification</p> <p>Natural Sources</p>	Low	20000	Acres	0198	0199
6	S	SEARLES LAKE	621.000	Salinity/TDS/Chlorides	<p>Naturally saline, internally drained desert playa lake. Natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.</p> <p>Source Unknown</p>	Medium	26100	Acres	0198	0199
6	W	AMEDEE HOT SPRINGS	637.200	Metals	<p>Natural geothermal springs developed for energy production; natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.</p> <p>Natural Sources</p>	Medium	1	Acres	0198	0199

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REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
6	W	BIG SPRINGS	603.100	Arsenic Natural geothermal source of arsenic at headwaters of Owens River. Natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.	Natural Sources	Medium	1	Acres	0198	0199
6	W	CINDER CONE SPRINGS	635.000	Nutrients Springs tributary to Truckee River, affected by subsurface drainage from former wastewater disposal area (disposal discontinued 1978).	Source Unknown	Medium	1	Acres		
6	W	FALES HOT SPRINGS	631.000	Salinity/TDS/Chlorides Subsurface drainage from former wastewater disposal area. Has not been monitored routinely in recent years; further monitoring may support delisting. TMDLs, if needed, to be addressed during years 3-5 of the next 13 years of the TMDL development process, as resources permit.	Wastewater	Medium	1	Acres	0198	0199
6	W	HONEY LAKE AREA WETLANDS	637.200	Metals Natural geothermal springs; natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.	Natural Sources	Medium	1	Acres	0198	0199
6	W	KEOUGH HOT SPRINGS	603.000	Metals Geothermal drainage; effects of saline Honey Lake water. To be addressed during years 6-13 of the next 13 years of the TMDL development process, probably as part of TMDLs for Honey Lake and Susan River.	Agriculture Geothermal Development Natural Sources Nonpoint Source	Medium	12000	Acres	0198	0199
6	W	TOP SPRING	637.200	Metals Natural geothermal springs developed for recreation. Natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.	Natural Sources	Medium	1	Acres	0198	0199
6	W	WENDEL HOT SPRINGS	637.200	Radiation Natural source (spring was developed as domestic water source for USFS ranger station and abandoned after testing showed MCL exceedance.) Natural impairment to be documented as "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.	Natural Sources	Medium	1	Acres	0198	0199
6	W	WENDEL HOT SPRINGS	637.200	Metals Natural geothermal spring developed for energy. Metals source to be documented as natural for "easy" (already funded) TMDL using 1998 Section 104/106 grant funds.	Natural Sources	Medium	1	Acres	0198	0199

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REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
7	R	ALAMO RIVER	723.100	Pesticides Pesticides may be contained in agricultural return flows. Elevated fish tissue levels. Toxic bioassay results.		High	52	Miles	2002	2011
				Sedimentation/Siltation	Agricultural Return Flows	High	52	Miles	1998	2000
				Selenium Selenium originates from Upper Basin Portion of Colorado River. Elevated fish tissue levels.	Agricultural Return Flows	High	52	Miles	2000	2010
7	R	COACHELLA VALLEY STORM CHANNEL	719.470	Bacteria Bacteria objectives violated, threat of toxic bioassay results.		Low	20	Miles	2004	2009
					Source Unknown					
7	R	IMPERIAL VALLEY DRAINS	723.100	Pesticides Elevated fish tissue levels and toxic bioassay results.		High	1305	Miles	2005	2011
				Sedimentation/Siltation Agricultural return flows.	Agricultural Return Flows	High	1305	Miles	2000	2010
				Selenium Selenium originates from Upper Basin Portion of Colorado River. Elevated fish tissue levels.	Agricultural Return Flows	High	1305	Miles	2000	2010
7	R	NEW RIVER (R7)	723.100	Bacteria Regional Board proposes to establish TMDL in cooperation with U.S.EPA/Mexico.		High	60	Miles	1998	2005
				Nutrients Regional Board proposes to establish TMDL in cooperation with U.S.EPA/Mexico.	Agricultural Return Flows	High	60	Miles	2002	2010
				Pesticides	Agricultural Return Flows	High	60	Miles	2002	2013
				Sedimentation/Siltation Agricultural Drainage from Imperial Valley and Mexicali Valley.	Agricultural Return Flows	High	60	Miles	1998	2002
				Volatile Organics/VOCs	Agricultural Return Flows	High	60	Miles	2007	2013
7	R	PALO VERDE OUTFALL DRAIN	715.400	Bacteria Source Unknown		Medium	16	Miles	2005	2011

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REGION TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE		
7 S	SALTON SEA	728,000	Nutrients	Agricultural Return Flows	Medium	220,000	Acres	2002	2010		
			Salinity	Agricultural Return Flows	Medium	220,000	Acres	1998	2001		
			Selenium	<i>Selenium originates from Upper Basin Portion of Colorado River.</i>							
				Agricultural Return Flows	Medium	220,000	Acres	2000	2007		
8 B	ANAHEIM BAY	801,110	Metals	Urban Runoff/Storm Sewers Unknown Nonpoint Source	Medium	180	Acres	0108	0111		
			Pesticides	Unknown Nonpoint Source	Medium	180	Acres	0108	0111		
8 B	HUNTINGTON HARBOUR	801,110	Metals	Urban Runoff/Storm Sewers Boatyards	Medium	150	Acres	0108	0111		
			Pathogens	Urban Runoff/Storm Sewers	Medium	150	Acres	0108	0111		
			Pesticides	Unknown Nonpoint Source	Medium	150	Acres	0108	0111		
8 B	NEWPORT BAY, LOWER	801,110	Metals	Urban Runoff/Storm Sewers Contaminated Sediments Boatyards	High	700	Acres	0196	0107		
			Nutrients	Agriculture Urban Runoff/Storm Sewers	High	700	Acres	0196	0198		
			Pathogens	Urban Runoff/Storm Sewers	High	700	Acres	0697	0100		
			Pesticides	Urban Runoff/Storm Sewers	High	700	Acres	0199	0102		
			Priority Organics	Agriculture Contaminated Sediments	High	700	Acres	0199	0102		
				Contaminated Sediments Unknown Nonpoint Source	High	700	Acres	0199	0102		
8 E	UPPER NEWPORT BAY ECOLOGICAL RESERVE	801,110	Metals	Urban Runoff/Storm Sewers	High	752	Acres	0199	0102		

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8 L	BIG BEAR LAKE	801.710	Nutrients							Acres	0196 0198
			Agriculture	Urban Runoff/Storm Sewers	High	752	Acres	0196	0198		
			Groundwater Loadings	High	752	Acres	0697	0100			
			Urban Runoff/Storm Sewers	High	752	Acres	0199	0102			
			Agriculture	Unknown Nonpoint Source	High	752	Acres	0196	0198		
			Construction/Land Development	Channel Erosion	Medium	2970	Acres	0102	0105		
			Erosion/Siltation	Resource Extraction		2970	Acres	0102	0105		
			Resource Extraction	2970		Acres	0102	0105			
			Noxious aquatic plants	Construction/Land Development	Medium	2970	Acres	0102	0105		
			Unknown point source	Construction/Land Development	Medium	2970	Acres	0102	0105		
			Snow Skiing Activities	Construction/Land Development	Medium	2970	Acres	0102	0105		
			Snow Skiing Activities	Unknown Nonpoint Source	Medium	600	Acres	0102	0104		
			Nonpoint Source	600		Acres	0102	0104			
			Nonpoint Source	3300		Acres	0102	0104			
			Org. enrichment/Low D.O.	Unknown Nonpoint Source	Medium	3300	Acres	0102	0104		
Unknown Nonpoint Source	Unknown Nonpoint Source	Medium	3300	Acres	0102	0104					
Urban Runoff/Storm Sewers	Urban Runoff/Storm Sewers	Medium	3300	Acres	0102	0104					

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8	L	FULMOR, LAKE	802.210	Unknown Toxicity	Unknown Nonpoint Source	Medium	3300	Acres	0102	0104
8	L	PRADO PARK LAKE	801.210	Pathogens	Unknown Nonpoint Source	Low	9	Acres	0108	0111
8	R	CHINO CREEK, REACH 1	801.210	Nutrients	Nonpoint Source	Low	60	Acres	0108	0111
8	R	CHINO CREEK, REACH 2	801.210	Pathogens	Nonpoint Source	Low	60	Acres	0108	0111
8	R	CUCAMONGA CREEK, VALLEY REACH	801.720	Nutrients	Agriculture Dairies	Medium	2	Miles	0100	0105
8	R	GROUT CREEK	801.710	Pathogens	Dairies Urban Runoff/Storm Sewers	Medium	2	Miles	0100	0105
8	R	KNICKERBOCKER CREEK	801.400	High Coliform Count	Unknown Nonpoint Source	Low	10	Miles	0108	0111
8	R	MILL CREEK (PRADO AREA)	801.250	High Coliform Count	Unknown Nonpoint Source	Low	13	Miles	0108	0111
8	R	LYTLE CREEK	801.710	Metals	Unknown Nonpoint Source	Medium	2	Miles	0102	0105
8	R	LYTLE CREEK	801.400	Nutrients	Unknown Nonpoint Source	Medium	2	Miles	0102	0105
8	R	LYTLE CREEK	801.400	Metals	Unknown Nonpoint Source	Medium	2	Miles	0103	0105
8	R	LYTLE CREEK	801.400	Pathogens	Unknown Nonpoint Source	Medium	2	Miles	0103	0105
8	R	LYTLE CREEK	801.400	Pathogens	Unknown Nonpoint Source	Low	18	Miles	0108	0111
8	R	LYTLE CREEK	801.400	Nutrients	Unknown Nonpoint Source	Medium	4	Miles	0100	0105

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REGION TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
8 R	MILL CREEK, REACH 1	801.580	Pathogens	Dairies	Medium	4	Miles	0100	0105
			Suspended solids	Dairies	Medium	4	Miles	0100	0105
8 R	MILL CREEK, REACH 2	801.580	Pathogens	Unknown Nonpoint Source	Low	5	Miles	0108	0111
8 R	MOUNTAIN HOME CREEK	801.580	Pathogens	Unknown Nonpoint Source	Low	8	Miles	0108	0111
8 R	MOUNTAIN HOME CREEK, EAST FORK	801.700	Pathogens	Unknown Nonpoint Source	Low	4	Miles	0108	0111
8 R	RATHBONE (RATHBUN) CREEK	801.720	Nutrients	Snow Skiing Activities Unknown Nonpoint Source	Medium	2	Miles	0102	0105
8 R	SAN DIEGO CREEK, REACH 1	801.110	Metals	Unknown Nonpoint Source	High	6	Miles	0199	0102
			Nutrients	Agriculture Urban Runoff/Storm Sewers Groundwater Loadings	High	6	Miles	0196	0198
			Pesticides	Unknown Nonpoint Source	High	6	Miles	0199	0102
			Sedimentation/Siltation	Unknown Nonpoint Source Agriculture Construction/Land Development Channel Erosion Erosion/Siltation	High	6	Miles	0196	0198
8 R	SAN DIEGO CREEK, REACH 2	801.110	Metals	Urban Runoff/Storm Sewers	High	6	Miles	0199	0102

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REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
				Nutrients		High	6	Miles	0196	0198
				Sedimentation/Siltation	Agriculture Urban Runoff/Storm Sewers Groundwater Loadings	High	6	Miles	0196	0198
				Unknown Toxicity	Agriculture Construction/Land Development Channel Erosion Erosion/Siltation Unknown Nonpoint Source	High	6	Miles	0199	0102
8	R	SANTA ANA RIVER, REACH 3	801.200	Nutrients	Unknown Nonpoint Source	Medium	3	Miles	0100	0111
				Pathogens	Dairies	Medium	3	Miles	0100	0111
				Salinity/TDS/Chlorides	Dairies	Medium	3	Miles	0100	0111
8	R	SANTA ANA RIVER, REACH 4	801.270	Pathogens	Nonpoint Source	Low	12	Miles	0108	0111
8	R	SANTIAGO CREEK, REACH 4	801.120	Salinity/TDS/Chlorides	Source Unknown	Low	2	Miles	0108	0111
8	R	SILVERADO CREEK	801.120	Pathogens	Unknown Nonpoint Source	Low	2	Miles	0108	0111
8	R	SUMMIT CREEK	801.710	Salinity/TDS/Chlorides	Unknown Nonpoint Source	Low	2	Miles	0108	0111
				Nutrients	Construction/Land Development	Medium	2	Miles	0102	0105
9	B	MISSION BAY	906.400	Eutrophic	Nonpoint/Point Source	Medium	1	Acres	0705	0708
				High Coliform Count	Nonpoint/Point Source	Low	1540	Acres	0799	0709
				Lead	Nonpoint/Point Source	Medium	1	Acres	0705	0708

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9	B	SAN DIEGO BAY	900.00	Benthic Comm. Effects	Nonpoint/Point Source	High	172	Acres	0198	0703
<p><i>The listing covers the following areas: Near Sub Base 16 acres, Near Grape Street 7 acres, Downtown Piers 10 acres, Near Coronado Bridge 30 acres, Near Chollas Creek 14 acres, San Diego Naval Station 76 acres, Seventh Street Channel 9 acres, North of 24th Street Marine Terminal 10 acres.</i></p>										
				Copper	Nonpoint/Point Source	High	50	Acres	0198	0703
<p><i>This listing is for dissolved copper in the Shelter Island yacht Basin in San Diego Bay.</i></p>										
				Sediment Toxicity	Nonpoint/Point Source	High	172	Acres	0198	0703
<p><i>The listing covers the following areas: Near Sub Base 16 acres, Near Grape Street 7 acres, Downtown Piers 10 acres, Near Coronado Bridge 30 acres, Near Chollas Creek 14 acres, San Diego Naval Station 76 acres, Seventh Street Channel 9 acres, North of 24th Street Marine Terminal 10 acres.</i></p>										
				High Coliform Count	Nonpoint/Point Source	Medium	0.01	Miles	0797	0701
9	C	PACIFIC OCEAN, ALISO HSA 901.13	901.13							
9	C	PACIFIC OCEAN, BUENA VISTA HA 904.20	904.20							
9	C	PACIFIC OCEAN, CORONADO HA 910.10	910.10							
9	C	PACIFIC OCEAN, DANA POINT HSA 901.14	901.14							
9	C	PACIFIC OCEAN, ESCONDIDO CREEK HA 904.60	904.60							
9	C	PACIFIC OCEAN, LAGUNA BEACH HSA 901.12	901.12							
9	C	PACIFIC OCEAN, LOMA ALTA HSA 904.10	904.10							
9	C	PACIFIC OCEAN, LOMA ALTA HSA 904.10	904.10							
9	C	PACIFIC OCEAN, LOMA ALTA HSA 904.10	904.10							

\* Comments presented under each pollutant/stressor are not required under Clean Water Act Section 303(d). In a few cases, they provide necessary information.

# 1998 CALIFORNIA 303(d) LIST AND TMDL PRIORITY SCHEDULE

Approved by USEPA: 12-May-99

REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
9	C	PACIFIC OCEAN, LOWER SAN JUAN HSA	901.270	High Coliform Count	Nonpoint/Point Source	Low	0.02	Miles	0700	0710
9	C	PACIFIC OCEAN, SAN CLEMENTE HA 901.30	901.30	High Coliform Count	Nonpoint/Point Source	Low	0.15	Miles	0700	0710
9	C	PACIFIC OCEAN, SAN DIEGO HU 907.00	907.00	High Coliform Count	Nonpoint/Point Source	Low	0.5	Miles	0799	0709
9	C	PACIFIC OCEAN, SAN DIEGO HU 905.00	905.00	High Coliform Count	Nonpoint/Point Source	Low	0.02	Miles	0799	0709
9	C	PACIFIC OCEAN, SAN LUIS REY HU 903.00	903.00	High Coliform Count	Nonpoint/Point Source	Low	0.01	Miles	0799	0709
9	C	PACIFIC OCEAN, SAN MARCOS HA 904.50	904.50	High Coliform Count	Nonpoint/Point Source	Low	0.01	Miles	0799	0709
9	C	PACIFIC OCEAN, SCRIPPS HA 906.30	906.30	High Coliform Count	Nonpoint/Point Source	Low	0.13	Miles	0799	0709
9	C	PACIFIC OCEAN, TIJUANA HU 911.00	911.00	High Coliform Count	Nonpoint/Point Source	Low	3.2	Miles	0798	0711
9	C	SAN DIEGO BAY, LINDBERGH HSA 908.21	908.21	High Coliform Count	Nonpoint/Point Source	Low	0.2	Miles	0799	0709
9	C	SAN DIEGO BAY, TELEGRAPH HSA 909.11	909.11	High Coliform Count	Nonpoint/Point Source	Low	0.01	Miles	0799	0709

\* Comments presented under each pollutant/stressor are not required under Clean Water Act Section 303(d). In a few cases, they provide necessary information.

# 1998 CALIFORNIA 303(d) LIST AND TMDL PRIORITY SCHEDULE

Approved by USEPA: 12-May-99

REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
9	E	AGUA HEDIONDA LAGOON	904.310	High Coliform Count	Nonpoint/Point Source	Low	5	Acres	0799	0709
				Sedimentation/Siltation	Nonpoint/Point Source	Medium	5	Acres	0704	0707
9	E	ALISO CREEK MOUTH OF ORANGE	901.130	High Coliform Count	Nonpoint/Point Source	Medium	0.3	Acres	0797	0701
9	E	BUENA VISTA LAGOON	904.210	High Coliform Count	Nonpoint/Point Source	Low	350	Acres	0799	0709
				Nutrients	Nonpoint/Point Source	Low	150	Acres	0704	0707
				Sedimentation/Siltation	Nonpoint/Point Source	Medium	350	Acres	0704	0707
9	E	FAMOSA SLOUGH & CHANNEL	906.400	Eutrophic	Nonpoint Source	Medium	28	Acres	0705	0708
9	E	LOMA ALTA SLOUGH	904.100	Eutrophic	Nonpoint Source	Low	8	Acres	0799	0709
				High Coliform Count	Nonpoint Source	Low	8	Acres	0799	0709
9	E	LOS PENASQUITOS LAGOON	906.100	Sedimentation/Siltation	Nonpoint/Point Source	Medium	385	Acres	0705	0708
9	E	SAN ELIJO LAGOON	904.610	Eutrophic	Nonpoint/Point Source	Low	330	Acres	0799	0709
				High Coliform Count	Nonpoint/Point Source	Low	150	Acres	0799	0709
				Sedimentation/Siltation	Nonpoint/Point Source	Medium	150	Acres	0704	0707
9	E	SAN JUAN CREEK (MOUTH)	901.200	High Coliform Count	Nonpoint/Point Source	Low	2	Acres	0700	0710
9	E	SANTA MARGARITA LAGOON	902.110	Eutrophic	Nonpoint/Point Source	High	1	Acres	0796	0705

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# 1998 CALIFORNIA 303(d) LIST AND TMDL PRIORITY SCHEDULE

Approved by USEPA: 12-May-99

REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
9	E	TIJUANA RIVER ESTUARY	911.110	Eutrophic	Nonpoint/Point Source	Low	1	Acres	0798	0711
				High Coliform Count	Nonpoint/Point Source	Low	150	Acres	0798	0711
				Lead	Nonpoint/Point Source	Low	1	Acres	0798	0711
				Nickel	Nonpoint/Point Source	Low	1	Acres	0798	0711
				Pesticides	Nonpoint/Point Source	Low	1	Acres	0798	0711
				Thallium	Nonpoint/Point Source	Low	1	Acres	0798	0711
				Trash	Nonpoint/Point Source	Low	1	Acres	0798	0711
9	L	GUAJOME LAKE	903.110	Eutrophic	Nonpoint/Point Source	Medium	25	Acres	0708	0711
9	R	ALISO CREEK	901.130	High Coliform Count	Nonpoint/Point Source	Medium	1	Miles	0797	0701
9	R	CHOLLAS CREEK	908.220	Cadmium <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	High	1	Miles	0198	0703
				Copper <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	High	1	Miles	0198	0703
				High Coliform Count	Nonpoint/Point Source	Low	1	Miles	0799	0709
				Lead <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	High	1	Miles	0198	0703
				Toxicity <i>Toxicity in Stormwater.</i>	Nonpoint/Point Source	High	1	Miles	0198	0703
				Zinc <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	High	1	Miles	0198	0703
9	R	RAINBOW CREEK	902.200	Eutrophic	Nonpoint/Point Source	High	5	Miles	0798	0700

\* Comments presented under each pollutant/stressor are not required under Clean Water Act Section 303(d). In a few cases, they provide necessary information.

# 1998 CALIFORNIA 303(d) LIST AND TMDL PRIORITY SCHEDULE

Approved by USEPA: 12-May-99

REGION	TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
9	R	SAN JUAN CREEK LOWER	901.270	High Coliform Count	Nonpoint/Point Source	Low	1	Miles	0700	0710
9	R	TECOLOTE CREEK	906.500	Cadmium <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	Medium	6	Miles	0705	0708
				Copper <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	Medium	6	Miles	0705	0708
				High Coliform Count	Nonpoint/Point Source	Low	6	Miles	0799	0709
				Lead <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	Medium	6	Miles	0705	0708
				Toxicity <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	Medium	6	Miles	0705	0708
				Zinc <i>Elevated levels in Stormwater.</i>	Nonpoint/Point Source	Medium	6	Miles	0705	0708
9	R	TIJUANA RIVER	911.110	Eutrophic	Nonpoint/Point Source	Low	7	Miles	0798	0711
				High Coliform Count	Nonpoint/Point Source	Low	7	Miles	0798	0711
				Org. enrichment/Low D.O.	Nonpoint/Point Source	Low	7	Miles	0798	0711
				Pesticides	Nonpoint/Point Source	Low	7	Miles	0798	0711
				Solids	Nonpoint/Point Source	Low	7	Miles	0798	0711
				Synthetic Organics	Nonpoint/Point Source	Low	7	Miles	0798	0711
				Trace Elements	Nonpoint/Point Source	Low	7	Miles	0798	0711
				Trash	Nonpoint/Point Source	Low	7	Miles	0798	0711

\* Comments presented under each pollutant/stressor are not required under Clean Water Act Section 303(d). In a few cases, they provide necessary information.

# 1998 CALIFORNIA 303(d) LIST AND TMDL PRIORITY SCHEDULE

Approved by USEPA: 12-May-99

REGION TYPE	NAME	HYDRO UNIT	POLLUTANT/STRESSOR*	SOURCE	PRIORITY	SIZE AFFECTED	UNIT	START DATE	END DATE
<b>REGIONAL WATER QUALITY CONTROL BOARDS</b>									
1	North Coast								
2	San Francisco Bay								
3	Central Coast								
4	Los Angeles								
5	Central Valley								
6	Lahontan								
7	Colorado River Basin								
8	Santa Ana								
9	San Diego								

**ABBREVIATIONS**

**WATER BODY TYPE**

- B = BAYS AND HARBORS
- C = COASTAL SHORELINES
- E = ESTUARIES
- G = GROUND WATER

- L = LAKES / RESERVOIRS
- O = OCEAN AND OPEN BAYS
- R = RIVERS / STREAMS

- S = SALINE LAKES
- T = WETLANDS, TIDAL
- W = WETLANDS, FRESHWATER

**HYDRO UNIT**

"Hydro Unit" is the State Water Resources Control Board hydrological subunit area.

**START AND END DATES**

Start and End Dates are shown as the year or as monthly/year.

**GROUP A PESTICIDES**

Aldrin, dieldrin, chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (including lindane), endosulfan, and toxaphene

\* Comments presented under each pollutant/stressor are not required under Clean Water Act Section 303(d). In a few cases, they provide necessary information.

#### **D. Designated Use Support Summary**

In previous 305(b) Reports, overall use support tables were presented for each water body type. These tables are no longer a reporting requirement of CWA Section 305(b) because the presentation of overall use could mask the specific number of uses impaired. The overall use tables have been replaced by the Tables 4A-4J summarizing the extent of impairment in terms of the number of beneficial uses affected.

A determination of degree of use support likely presents a worst-case scenario of the State's water quality because a substantial portion of the State's monitoring data is collected in response to suspected problems (i.e., healthy environments are less likely than troubled ones to be targeted for monitoring).

The two assessment categories "evaluated" and "monitored" used in the following Tables 4A-4J are defined in the Guidelines for Preparation of the 1996 State Water Quality Assessments [305(b) Reports] as follows:

"Evaluated waters" are those water bodies for which the use support decision is based on information other than current site-specific ambient data, such as data on land use, location of sources, predictive modeling using estimated input variables, and some surveys of fish and game biologists. As a general guide, if an assessment is based on older ambient data (e.g., older than five years), it would be considered "evaluated".

"Monitored waters" are those water bodies for which the use support decision is principally based on current site-specific ambient data believed to accurately portray water quality conditions. Waters with data from biosurveys would be included in this category along with waters monitored by fixed-station chemical/physical monitoring. To be considered "monitored" based on fixed-station chemical/physical monitoring, waters should be sampled quarterly or more frequently.

**TABLE 4A. SUMMARY OF DESIGNATED USE SUPPORT: BAYS AND HARBORS (Acres)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	6,009	138,460	144,469
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	12,122	1,050	13,172
<i>Size Impaired for One or More Uses<sup>1</sup></i>	12,129	327,266	339,395
<b>TOTAL ASSESSED</b>	30,260	466,776	497,036

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

**TABLE 4B. SUMMARY OF DESIGNATED USE SUPPORT: COASTAL SHORELINE (Miles)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	712	84	796
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	0	0	0
<i>Size Impaired for One or More Uses<sup>1</sup></i>	48	75	123
<b>TOTAL ASSESSED</b>	760	159	919

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use



**TABLE 4C. SUMMARY OF DESIGNATED USE SUPPORT: ESTUARIES (Acres)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	6,436	440	6,876
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	2	731	733
<i>Size Impaired for One or More Uses<sup>1</sup></i>	11,145	60,177	71,322
<b>TOTAL ASSESSED</b>	17,583	61,348	78,931

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

**TABLE 4D. SUMMARY OF DESIGNATED USE SUPPORT: GROUND WATER (Square Miles)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	29,689	9,462	39,151
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	1,860	517	2,377
<i>Size Impaired for One or More Uses<sup>1</sup></i>	7,263	14,790	22,053
<b>TOTAL ASSESSED</b>	38,812	24,769	63,581

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

**TABLE 4E. SUMMARY OF DESIGNATED USE SUPPORT: LAKES / RESERVOIRS (Acres)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	127,107	88,112	215,219
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	5,079	54,630	59,709
<i>Size Impaired for One or More Uses<sup>1</sup></i>	39,668	426,886	466,554
<b>TOTAL ASSESSED</b>	171,854	569,628	741,482

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

**TABLE 4F. SUMMARY OF DESIGNATED USE SUPPORT: OCEAN and OPEN BAYS (Acres)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	314,196	294	314,490
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	3006	0	3006
<i>Size Impaired for One or More Uses<sup>1</sup></i>	0	0	0
<b>TOTAL ASSESSED</b>	317,202	294	317,496

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

**TABLE 4G. SUMMARY OF DESIGNATED USE SUPPORT: RIVERS / STREAMS (Miles)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	2,264	1,080	3,344
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	1,535	336	1,871
<i>Size Impaired for One or More Uses<sup>1</sup></i>	5,542	6,722	12,264
<b>TOTAL ASSESSED</b>	9,341	8,138	17,479

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

**TABLE 4H. SUMMARY OF DESIGNATED USE SUPPORT: SALINE LAKES (Acres)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	0	0	0
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	0	0	0
<i>Size Impaired for One or More Uses<sup>1</sup></i>	65,125	367,783	432,908
<b>TOTAL ASSESSED</b>	65,125	367,783	432,908

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

**TABLE 4I. SUMMARY OF DESIGNATED USE SUPPORT: WETLANDS, FRESHWATER (Acres)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	14,946	0	14,946
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	708	0	708
<i>Size Impaired for One or More Uses<sup>1</sup></i>	41,889	9,561	51,450
<b>TOTAL ASSESSED</b>	57,543	9,561	67,104

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

**TABLE 4J. SUMMARY OF DESIGNATED USE SUPPORT: WETLANDS, TIDAL (Acres)**

DEGREE OF USE SUPPORT	ASSESSMENT CATEGORY		TOTAL ASSESSED
	EVALUATED	MONITORED	
<i>Size Fully Supporting All Assessed Uses</i>	0	0	0
<i>Size Fully Supporting All Assessed Uses but Threatened for at Least One Use</i>	0	3	3
<i>Size Impaired for One or More Uses<sup>1</sup></i>	70,920	181	71,101
<b>TOTAL ASSESSED</b>	70,920	184	71,104

<sup>1</sup> Impaired = Partially or Not Supporting a Designated Use

## E. Individual Use Summary

### Use Support Classifications

The U.S. EPA categories of Fully Supporting, Fully Supporting But Threatened, Partially Supporting, and Not Supporting, are described below:

*Fully Supporting* refers to waters of good quality in the WBS database, excluding the *Fully Supporting But Threatened* category which is treated separately. "Good" waters support and enhance all designated beneficial uses.

*Fully Supporting But Threatened* refers to those portions of good quality waters in the WBS database which specifically identify at least one beneficial use as threatened.

*Partially Supporting* refers to all intermediate and less severely impaired waters in the WBS database. "Intermediate" waters support beneficial uses with an occasional degradation of water quality. The term "intermediate" usually indicates suspected impacts to beneficial uses, i.e., a problem is indicated but inadequate data are available. "Impaired" water bodies cannot reasonably be expected to attain or maintain applicable water quality standards, and at least one beneficial use shows some degree of impairment.

*Not Supporting* refers to those water bodies in which a beneficial use is severely impaired and which staff judges to merit serious attention.

Tables 5A-5J show the level of support for each of the seven U.S. EPA designated beneficial uses in different types of water bodies. These include Fish Consumption, Shellfishing, Aquatic Life Support, Swimming, Secondary Contact, Drinking Water Supply, and Agriculture. California has more beneficial use categories than U.S. EPA's designated use categories. For Tables 5A-5J, California beneficial use designations have been grouped into the seven basic U.S. EPA beneficial use categories as outlined below:

U.S. EPA DESIGNATED  
USE CATEGORIES

EQUIVALENT CALIFORNIA  
BENEFICIAL USE CATEGORY\*

Fish Consumption	Ocean Commercial and Sport Fishing
Shellfishing	Shellfish Harvesting
Aquatic Life Support	Warm Freshwater Habitat Cold Freshwater Habitat Fresh Water Replacement Preservation of Biological Habitats of Special Significance Estuarine Habitat Marine Habitat Fish Spawning Fish Migration Rare and Endangered Species Wildlife Habitat Saline Water Habitat Aquaculture
Swimming	Water Contact Recreation
Secondary Contact	Non-Contact Water Recreation
Drinking Water Supply	Municipal and Domestic Supply
Agriculture	Agricultural Supply

\* A description of these California beneficial uses is included in the Appendix.

Beneficial use support status is determined for entire water bodies or portions of water bodies based on the length or areal extent represented by monitoring data or other evaluation criteria. In many cases, different portions of a water body have a different use support status. In certain cases where information is not available to determine the limits of impaired areas, the entire water body is considered impaired.

TABLE 5A. INDIVIDUAL USE SUPPORT SUMMARY: BAYS AND HARBORS (Acres)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems	Aquatic Life Support	144,509	1,400	312,465	26,837	-	11,982
	Fish Consumption	161,509	12,830	310,165	12,479	-	210
Protect and Enhance Public Health	Shellfishing	166,690	12,680	285,665	5,033	-	210
	Swimming	165,550	830	316,250	2,013	-	12,550
	Secondary Contact	169,788	830	312,465	1,560	-	12,550
	Drinking Water Supply	*	*	*	*	*	*
Social and Economic	Agriculture	5,000	0	15,800	0	-	0
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"." = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero

TABLE 5B. INDIVIDUAL USE SUPPORT SUMMARY: COASTAL SHORELINE (Miles)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems	Aquatic Life Support	791	0	51	0	-	0
	Fish Consumption	558	0	54	34	-	0
Protect and Enhance Public Health	Shellfishing	725	0	54	1	-	2
	Swimming	716	0	91	25	-	2
	Secondary Contact	777	0	51	4	-	2
Social and Economic	Drinking Water Supply	*	*	*	*	*	*
	Agriculture	0	0	0	0	-	0
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"-" = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero



TABLE 5C. INDIVIDUAL USE SUPPORT SUMMARY: ESTUARIES (Acres)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems Protect and Enhance Public Health	Aquatic Life Support	6,734	731	60,816	3,528	-	20,140
	Fish Consumption	7,232	527	55,614	2,805	-	17,735
	Shellfishing	4,272	492	3,587	805	-	19,233
	Swimming	7,479	951	8,203	814	0	22,377
	Secondary Contact	8,447	923	56,208	782	-	21,446
Social and Economic	Drinking Water Supply	0	0	51,469	0	-	0
	Agriculture	0	0	3,644	0	-	2
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"-" = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero

TABLE 5D. INDIVIDUAL USE SUPPORT SUMMARY: GROUND WATER (Square Miles)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems	Aquatic Life Support	470	208	1130	-	-	15,783
	Fish Consumption	-	-	-	-	-	1,580
Protect and Enhance Public Health	Shellfishing	-	-	-	-	-	-
	Swimming	-	-	-	-	-	1,580
	Secondary Contact	-	-	-	-	-	1,580
	Drinking Water Supply	32,956	2,329	15,372	1,515	-	11,497
Social and Economic	Agriculture	25,579	790	7,722	799	20	21,043
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"-" = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero

TABLE 5E. INDIVIDUAL USE SUPPORT SUMMARY: LAKES / RESERVOIRS (Acres)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems	Aquatic Life Support	172,114	57,267	326,814	127,053	-	76,740
	Fish Consumption	135,387	60,136	169,644	125,177	-	206,388
		Shellfishing	*	*	*	*	-
Protect and Enhance Public Health	Swimming	167,891	73,509	308,452	125,884	-	73,989
	Secondary Contact	181,285	60,501	307,165	125,457	-	85,209
	Drinking Water Supply	166,967	20,569	292,980	203		74,803
	Agriculture	157,926	31,417	127,263	125,722	-	88,830
	Cultural or Ceremonial	*	*	*	*	*	*
Social and Economic							

"\*" = Category not applicable

"." = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero

TABLE 5F. INDIVIDUAL USE SUPPORT SUMMARY: OCEAN and OPEN BAYS (Acres)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems Protect and Enhance Public Health	Aquatic Life Support	312,706	0	0	0	-	6
	Fish Consumption	312,706	0	0	0	-	6
	Shellfishing	312,706	0	0	0	-	6
	Swimming	312,706	0	0	0	-	6
	Secondary Contact	312,706	0	0	0	-	6
Social and Economic	Drinking Water Supply	*	*	*	*	*	*
	Agriculture	*	*	*	*	*	*
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"-" = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero

TABLE 5G. INDIVIDUAL USE SUPPORT SUMMARY: RIVERS / STREAMS (Miles)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems	Aquatic Life Support	2,963	1,422	5,970	1,934	-	4,016
	Fish Consumption	2,347	739	4,795	193	-	3877
Protect and Enhance Public Health	Shellfishing	3	0	19	0	-	0
	Swimming	2,918	1,303	5,784	2061	-	3744
	Secondary Contact	3,438	1,227	5,536	1,896	-	3,985
	Drinking Water Supply	2,663	1,078	4,973	365	-	2,906
Social and Economic	Agriculture	2,316	1,049	4,532	524	-	3,736
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"," = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero

TABLE 5H. INDIVIDUAL USE SUPPORT SUMMARY: SALINE LAKES (Acres)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems	Aquatic Life Support	0	0	394,552	0	-	3,334
	Fish Consumption	0	0	0	0	-	55,827
Protect and Enhance Public Health	Shellfishing	0	0	0	0	-	0
	Swimming	0	0	294,475	0	-	0
	Secondary Contact	0	0	394,052	0	-	3,834
	Drinking Water Supply	0	500	114,802	0	-	0
Social and Economic	Agriculture	0	0	94,802	0	-	0
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"." = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero

TABLE 5L. INDIVIDUAL USE SUPPORT SUMMARY: WETLANDS, FRESHWATER (Acres)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems Protect and Enhance Public Health	Aquatic Life Support	14,943	400	9,685	0	-	18,100
	Fish Consumption	173	0	0	0	-	15,092
	Shellfishing	0	0	495	0	-	0
	Swimming	15,232	400	9,070	0	-	18,100
Social and Economic	Secondary Contact	15,558	400	9,069	0	-	18,100
	Drinking Water Supply	476	1	320	0	-	18,060
	Agriculture	0	0	9,209	0	-	18,060
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"-" = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero

TABLE 5J. INDIVIDUAL USE SUPPORT SUMMARY: WETLANDS, TIDAL (Acres)

GOALS	USE	SIZE FULLY SUPPORTING	SIZE SUPPORTING BUT THREATENED	SIZE PARTIALLY SUPPORTING	SIZE NOT SUPPORTING	SIZE NOT ATTAINABLE	SIZE NOT ASSESSED
Protect & Enhance Ecosystems Protect and Enhance Public Health	Aquatic Life Support	0	3	1,905	181	-	36,430
	Fish Consumption	0	-	-	165	-	0
	Shellfishing	-	-	-	-	-	850
	Swimming	0	0	0	167	-	866
	Secondary Contact	0	0	0	167	-	866
Social and Economic	Drinking Water Supply	*	*	*	*	*	*
	Agriculture	*	*	*	*	*	*
	Cultural or Ceremonial	*	*	*	*	*	*

"\*" = Category not applicable

"-" = Category applicable but no data available

"0" = Category applicable, but size of waters in the category is zero



## **F. Total Sizes of Waters Impaired by Various Cause Categories**

The WBS database contains the portion (length or areal extent) of water bodies that are not fully supporting their designated uses (i.e., partially and not supporting uses) because of a specific pollutant or stressor. Causes are pollutants or stressors that contribute to the actual or threatened impairment of designated uses. Stressors are factors or conditions (other than specific pollutants) that cause impairment (e.g., flow and other habitat alterations, presence of exotic species).

Tables 6A-6I present, for each Water body type, the length or areal extent of all impaired water bodies that are affected by one or more of 30 specific categories. The measurements in Tables 6A-6I are not additive because a water body may be affected by several pollutants or stressors, and its size is counted in each relevant cause category.

The types of contributions to impairment used in Tables 6A-6I are defined as follows:

A "major" contributor is a pollutant or stressor that is either the only one responsible for nonsupport of any designated use or it predominates over other pollutants or stressors.

A "moderate" contributor is a pollutant or stressor that is the only one responsible for partial support of any use, predominates over other causes of partial support, or is one of multiple causes of nonsupport that have a significant impact on designated use attainment.

A "minor" contributor is a pollutant or stressor that is one of multiple causes responsible for nonsupport or partial support and is judged to contribute relatively little to this nonattainment.

TABLE 6A.

TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES

BAYS AND HARBORS (Acres)

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		
Toxicity (Unknown toxicant)	208	24,630
Pesticides	10,505	164,212
Priority organic chemical	860	252,520
Nonpriority organic chemical		24,519
Metals	25,206	283,235
Ammonia		
Cyanide		
Sulfates		
Chlorine		
Other inorganics		
Nutrients		8,980
pH		
Siltation	2,300	7,980
Organic enrichment/low DO		1,540
Salinity/TDS/chlorides		
Thermal modifications		
Flow alterations		145,740
Other habitat alterations	12,000	142,631
Pathogen indicators	3,993	7,433
Radiation		
Oil and grease		
Taste and odor		
Suspended solids		
Noxious aquatic plants (macrophytes)		700
Total toxics	178	
Turbidity		
Exotic species		145,560
Excessive algal growth		
Inappropriate littoral vegetation		

TABLE 6B.

TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES

COASTAL SHORELINE (Miles)

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		
Toxicity (Unknown toxicant)		
Pesticides	2	10
Priority organic chemical		
Nonpriority organic chemical		
Metals		26
Ammonia		
Cyanide		
Sulfates		
Chlorine		
Other inorganics		
Nutrients		
pH		
Siltation		
Organic enrichment/low DO		
Salinity/TDS/chlorides		
Thermal modifications		
Flow alterations		
Other habitat alterations		
Pathogen indicators	26	65
Radiation		
Oil and grease		
Taste and odor		
Suspended solids		
Noxious aquatic plants (macrophytes)		
Total toxics		
Turbidity		
Exotic species		
Excessive algal growth		
Inappropriate littoral vegetation		

TABLE 6C.

TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES  
ESTUARIES (Acres)

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		
Toxicity (Unknown toxicant)		50,338
Pesticides		56,016
Priority organic chemical		54,488
Nonpriority organic chemical		
Metals	48,000	11,263
Ammonia		1,011
Cyanide		
Sulfates		
Chlorine		
Other inorganics		
Nutrients	1,678	5,013
pH		28
Siltation	390	9,884
Organic enrichment/low DO	111	648
Salinity/TDS/chlorides		48,044
Thermal modifications	28	6,670
Flow alterations	348	6,318
Other habitat alterations	348	1,250
Pathogen indicators	1,335	2,514
Radiation		
Oil and grease		300
Taste and odor		
Suspended solids		
Noxious aquatic plants (macrophytes)	330	386
Total toxics		150
Turbidity		308
Exotic species	28	856
Excessive algal growth		
Inappropriate littoral vegetation		

TABLE 6D.

TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES

LAKES / RESERVOIRS (Acres)

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		702
Toxicity (Unknown toxicant)		3,908
Pesticides	510	126,886
Priority organic chemical		960
Nonpriority organic chemical		382
Metals	120,000	180,527
Ammonia		1,672
Cyanide		
Sulfates		
Chlorine		
Other inorganics		
Nutrients	188,280	12,511
pH		973
Siltation	120,000	12,715
Organic enrichment/low DO	968	30,674
Salinity/TDS/chlorides	971	566
Thermal modifications		
Flow alterations		3,711
Other habitat alterations		78
Pathogen indicators	25,000	
Radiation		
Oil and grease		
Taste and odor	28	120,338
Suspended solids		59
Noxious aquatic plants (macrophytes)	43,688	124,865
Total toxics		42,772
Turbidity		59
Exotic species		
Excessive algal growth		
Inappropriate littoral vegetation		

TABLE 6E.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES

## OCEAN AND OPEN BAYS (Acres)

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown	0	0
Toxicity (Unknown toxicant)	0	0
Pesticides	0	0
Priority organic chemical	0	0
Nonpriority organic chemical	0	0
Metals	0	0
Ammonia	0	0
Cyanide	0	0
Sulfates	0	0
Chlorine	0	0
Other inorganics	0	0
Nutrients	0	0
pH	0	0
Siltation	0	0
Organic enrichment/low DO	0	0
Salinity/TDS/chlorides	0	0
Thermal modifications	0	0
Flow alterations	0	0
Other habitat alterations	0	0
Pathogen indicators	0	0
Radiation	0	0
Oil and grease	0	0
Taste and odor	0	0
Suspended solids	0	0
Noxious aquatic plants (macrophytes)	0	0
Total toxics	0	0
Turbidity	0	0
Exotic species	0	0
Excessive algal growth	0	0
Inappropriate littoral vegetation	0	0

**TABLE 6F.**  
**TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES**  
**RIVERS / STREAMS (Miles)**

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		
Toxicity (Unknown toxicant)	296	785
Pesticides	313	2,281
Priority organic chemical	70	198
Nonpriority organic chemical		19
Metals	584	3,125
Ammonia	31	527
Cyanide		
Sulfates		
Chlorine	14	16
Other inorganics		132
Nutrients	212	3,302
pH	25	180
Siltation	160	4,406
Organic enrichment/low DO	50	859
Salinity/TDS/chlorides	285	1,113
Thermal modifications		1,130
Flow alterations	717	474
Other habitat alterations	114	1,694
Pathogen indicators	231	2,559
Radiation		
Oil and grease		140
Taste and odor		62
Suspended solids	11	1,112
Noxious aquatic plants (macrophytes)	19	218
Total toxics	16	560
Turbidity	77	336
Exotic species		11
Excessive algal growth		
Inappropriate littoral vegetation		

TABLE 6G.

TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES  
SALINE LAKES (Acres)

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		
Toxicity (Unknown toxicant)		
Pesticides		
Priority organic chemical		
Nonpriority organic chemical		
Metals	55,328	295,827
Ammonia		
Cyanide		
Sulfates		
Chlorine		
Other inorganics	129,907	
Nutrients		
pH	92,282	
Siltation		55,327
Organic enrichment/low DO		
Salinity/TDS/chlorides	132,830	300,077
Thermal modifications		
Flow alterations	139,052	500
Other habitat alterations	35,000	1,400
Pathogen indicators		220,000
Radiation		35,000
Oil and grease		
Taste and odor		
Suspended solids		
Noxious aquatic plants (macrophytes)		
Total toxics	110,328	
Turbidity		
Exotic species		
Excessive algal growth		
Inappropriate littoral vegetation		



TABLE 6H.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES

## WETLANDS, FRESHWATER (Acres)

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		
Toxicity (Unknown toxicant)		866
Pesticides		1,420
Priority organic chemical		936
Nonpriority organic chemical		
Metals	8,229	13,218
Ammonia		
Cyanide		
Sulfates		
Chlorine		
Other inorganics		1
Nutrients		1,482
pH		
Siltation		1,136
Organic enrichment/low DO		345
Salinity/TDS/chlorides	8,226	39,571
Thermal modifications		
Flow alterations		27,477
Other habitat alterations	3	41,596
Pathogen indicators		34
Radiation		
Oil and grease		468
Taste and odor		
Suspended solids		
Noxious aquatic plants (macrophytes)		
Total toxics	1	2
Turbidity		
Exotic species		
Excessive algal growth		
Inappropriate littoral vegetation		

TABLE 6I.

TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES

WETLANDS, TIDAL (Acres)

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		
Toxicity (Unknown toxicant)		14
Pesticides	14	3
Priority organic chemical		
Nonpriority organic chemical		14
Metals	151	57,029
Ammonia		16
Cyanide		
Sulfates		
Chlorine		
Other inorganics		
Nutrients		57,000
pH		16
Siltation		
Organic enrichment/low DO		57,000
Salinity/TDS/chlorides		57,000
Thermal modifications		
Flow alterations		151
Other habitat alterations		151
Pathogen indicators	16	
Radiation		
Oil and grease		
Taste and odor		
Suspended solids		
Noxious aquatic plants (macrophytes)		
Total toxics		
Turbidity		
Exotic species		151
Excessive algal growth		
Inappropriate littoral vegetation		

## G. Total Sizes of Waters Impaired by Various Source Categories

The WBS database contains the portion (length or areal extent) of water bodies that are not fully supporting their designated uses (i.e., partially and not supporting uses) that are affected by a specific source. Sources are the facilities or activities that contribute pollutants or stressors resulting in impairment of designated uses in a water body.

Tables 7A-7I present, for each Water body type, the total length or areal extent of all impaired water bodies that are affected by each category of source. In Tables 7A-7I the measurements are not additive because a water body may be affected by several different sources of pollution and the appropriate size is counted in each relevant cause category.

The definitions for the types of contributions to impairment used in Tables 7A-7I are as follows:

A "major" contributor is a source that is either the only one responsible for nonsupport of any designated use or it predominates over other sources.

A "moderate" contributor is a source that is the only one responsible for partial support of any use, predominates over other sources of partial support, or is one of multiple sources of nonsupport that have a significant impact on designated use attainment.

A "minor" contributor is a source that is one of multiple sources responsible for nonsupport or partial support and is judged to contribute relatively little to this nonattainment.

**TABLE 7A.**

**TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES**

**BAYS AND HARBORS (Acres)**

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources	139,000	170,606
Municipal Point Sources		304,960
Combined Sewer Overflows	1,540	
Agriculture	2,460	234,412
Crop-related sources	160	2,300
Grazing-related sources		16,320
Intensive animal feeding operations		
Silviculture		
Construction		
Urban Runoff/Storm Sewers	13,540	184,087
Resource Extraction	252,520	35,120
Land Disposal	5	413
Hydromodification	145,560	24,680
Habitat Modification (non-hydromod)		700
Marinas		7,899
Erosion from Derelict Land		
Atmospheric Deposition		269,160
Septage Disposal	4,860	7,820
Leaking Underground Storage Tanks		202,880
Highway Maintenance and Runoff		
Spills (Accidental)		25,049
Contaminated Sediments		25,446
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources		269,288
Recreational Activities		
Salt Storage Sites		
Ground Water Loadings		104,400
Ground Water Withdrawal		
Other	12,000	104,400
Unknown Source		254,738
Sources Outside State Jurisdiction/Borders		

TABLE 7B.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES

## COASTAL SHORELINE (Miles)

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources		1
Municipal Point Sources		
Combined Sewer Overflows		
Agriculture		28
Crop-related sources		
Grazing-related sources		
Intensive animal feeding operations		
Silviculture		
Construction		3
Urban Runoff/Storm Sewers	5	86
Resource Extraction		25
Land Disposal		
Hydromodification		
Habitat Modification (non-hydromod)		
Marinas		1
Erosion from Derelict Land		
Atmospheric Deposition		
Septage Disposal		24
Leaking Underground Storage Tanks		
Highway Maintenance and Runoff		
Spills (Accidental)		60
Contaminated Sediments		
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources		16
Recreational Activities		
Salt Storage Sites		
Ground Water Loadings		
Ground Water Withdrawal		
Other		
Unknown Source		
Sources Outside State Jurisdiction/Borders		

TABLE 7C.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES

ESTUARIES (Acres)

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources	3,720	50,350
Municipal Point Sources		3,838
Combined Sewer Overflows	150	651
Agriculture	757	58,192
Crop-related sources		2,864
Grazing-related sources	319	2,000
Intensive animal feeding operations		330
Silviculture		
Construction	1,039	1,813
Urban Runoff/Storm Sewers	901	57,446
Resource Extraction	51,400	
Land Disposal	150	2,386
Hydromodification	6,963	48,785
Habitat Modification (non-hydromod)	413	1
Marinas		
Erosion from Derelict Land		
Atmospheric Deposition		3,400
Septage Disposal		37
Leaking Underground Storage Tanks		
Highway Maintenance and Runoff	413	
Spills (Accidental)		331
Contaminated Sediments	330	2,886
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources		6,246
Recreational Activities	28	32
Salt Storage Sites		
Ground Water Loadings		
Ground Water Withdrawal		
Other		
Unknown Source		51,824
Sources Outside State Jurisdiction/Borders		

TABLE 7D.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES

## LAKES / RESERVOIRS (Acres)

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources	295	
Municipal Point Sources		
Combined Sewer Overflows		
Agriculture	3000	36,861
Crop-related sources		59
Grazing-related sources	3000	35,036
Intensive animal feeding operations		
Silviculture	120,000	1,410
Construction	120,000	29,042
Urban Runoff/Storm Sewers	120,320	9,346
Resource Extraction	77,865	30,675
Land Disposal	120,160	
Hydromodification	121,800	19,123
Habitat Modification (non-hydromod)	122,280	3,640
Marinas	120,000	700
Erosion from Derelict Land		
Atmospheric Deposition	120,000	4,617
Septage Disposal		25,952
Leaking Underground Storage Tanks		
Highway Maintenance and Runoff	120,000	25,320
Spills (Accidental)		19
Contaminated Sediments		431
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources	12,930	44,878
Recreational Activities		3,937
Salt Storage Sites		
Ground Water Loadings		
Ground Water Withdrawal		
Other	25	2,601
Unknown Source	163,000	56,701
Sources Outside State Jurisdiction/Borders		

TABLE 7E.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES

## OCEAN AND OPEN BAYS (Acres)

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources	0	0
Municipal Point Sources	0	0
Combined Sewer Overflows	0	0
Agriculture	0	0
Crop-related sources	0	0
Grazing-related sources	0	0
Intensive animal feeding operations	0	0
Silviculture	0	0
Construction	0	0
Urban Runoff/Storm Sewers	0	0
Resource Extraction	0	0
Land Disposal	0	0
Hydromodification	0	0
Habitat Modification (non-hydromod)	0	0
Marinas	0	0
Erosion from Derelict Land	0	0
Atmospheric Deposition	0	0
Septage Disposal	0	0
Leaking Underground Storage Tanks	0	0
Highway Maintenance and Runoff	0	0
Spills (Accidental)	0	0
Contaminated Sediments	0	0
Debris and Bottom Deposits	0	0
Internal Nutrient Cycling (primarily lakes)	0	0
Sediment Resuspension	0	0
Natural Sources	0	0
Recreational Activities	0	0
Salt Storage Sites	0	0
Ground Water Loadings	0	0
Ground Water Withdrawal	0	0
Other	0	0
Unknown Source	0	0
Sources Outside State Jurisdiction/Borders	0	0



TABLE 7F.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES

## RIVERS / STREAMS (Miles)

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources	34	612
Municipal Point Sources	24	1,144
Combined Sewer Overflows		7
Agriculture	466	3,493
Crop-related sources	81	1,612
Grazing-related sources	17	1,464
Intensive animal feeding operations		88
Silviculture	63	1,854
Construction	188	612
Urban Runoff/Storm Sewers	95	1,727
Resource Extraction	661	805
Land Disposal	10	207
Hydromodification	518	557
Habitat Modification (non-hydromod)	200	817
Marinas		1
Erosion from Derelict Land		
Atmospheric Deposition		93
Septage Disposal		220
Leaking Underground Storage Tanks		114
Highway Maintenance and Runoff		258
Spills (Accidental)		327
Contaminated Sediments	19	
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources	51	1,858
Recreational Activities	12	255
Salt Storage Sites		
Ground Water Loadings		10
Ground Water Withdrawal	120	65
Other		159
Unknown Source	1	1008
Sources Outside State Jurisdiction/Borders	60	

TABLE 7G.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES

## SALINE LAKES (Acres)

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources		
Municipal Point Sources		
Combined Sewer Overflows		
Agriculture		351,807
Crop-related sources		220,000
Grazing-related sources		1,400
Intensive animal feeding operations		
Silviculture		
Construction		55,827
Urban Runoff/Storm Sewers		
Resource Extraction		
Land Disposal		
Hydromodification	90,327	75,080
Habitat Modification (non-hydromod)		
Marinas		
Erosion from Derelict Land		
Atmospheric Deposition		
Septage Disposal		
Leaking Underground Storage Tanks		
Highway Maintenance and Runoff		
Spills (Accidental)		
Contaminated Sediments		
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources	158,323	12,755
Recreational Activities		
Salt Storage Sites		
Ground Water Loadings		
Ground Water Withdrawal		119,052
Other		
Unknown Source	26,100	35,000
Sources Outside State Jurisdiction/Borders		

TABLE 7H.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES

## WETLANDS, FRESHWATER (Acres)

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources		
Municipal Point Sources		
Combined Sewer Overflows		
Agriculture	8,226	42,941
Crop-related sources		615
Grazing-related sources		29,113
Intensive animal feeding operations		
Silviculture		12,001
Construction	1	1,220
Urban Runoff/Storm Sewers	1	1,316
Resource Extraction	2	2
Land Disposal		402
Hydromodification	1	27,477
Habitat Modification (non-hydromod)	451	356
Marinas		
Erosion from Derelict Land		
Atmospheric Deposition		
Septage Disposal		2
Leaking Underground Storage Tanks		1
Highway Maintenance and Runoff		
Spills (Accidental)		1
Contaminated Sediments		
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources	3	39,410
Recreational Activities		1
Salt Storage Sites		
Ground Water Loadings		1
Ground Water Withdrawal		
Other		12,001
Unknown Source		3
Sources Outside State Jurisdiction/Borders		

TABLE 7I.

## TOTAL SIZES OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES

## WETLANDS, TIDAL (Acres)

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources		16
Municipal Point Sources		
Combined Sewer Overflows		
Agriculture		57,000
Crop-related sources		
Grazing-related sources		
Intensive animal feeding operations		
Silviculture		
Construction		
Urban Runoff/Storm Sewers		57,183
Resource Extraction		
Land Disposal		
Hydromodification		57,151
Habitat Modification (non-hydromod)		151
Marinas		
Erosion from Derelict Land		
Atmospheric Deposition		
Septage Disposal		
Leaking Underground Storage Tanks		
Highway Maintenance and Runoff		
Spills (Accidental)		19
Contaminated Sediments		
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources		184
Recreational Activities		151
Salt Storage Sites		
Ground Water Loadings		
Ground Water Withdrawal		
Other		
Unknown Source		
Sources Outside State Jurisdiction/Borders		

## H. Public Health Concerns

### 1. Sizes of Waters Affected by Toxicants

Toxic substances are a major emphasis of the 1998 water quality assessment. The information assessed includes types of media and pollutants monitored, results of toxic substance monitoring, sediment contamination, toxic constituents in fish and shellfish tissue, fish kills and abnormalities, fishing advisories or bans, and specific sources of toxics for impaired waters. This information is contained in the WBS database as individual water body assessments. The results are reflected in the various cause and source categories used for reporting impairment from toxic substances, the designated use support status determinations, and assessment comments.

Table 8 summarizes the total size of waters monitored for and impacted by toxic substances for each of the water body types. This shows all waters found to be impacted by pesticides, priority organics, nonpriority organics, metals, ammonia, chlorine, other inorganics, or toxicity (toxicant unknown) with either a high or moderate contribution to impairment. It should be noted that this summary includes not only waters which do not support their designated uses, but also waters where uses are currently supported, but are considered threatened by toxic substances.

**TABLE 8**

#### **TOTAL SIZE AFFECTED BY TOXICANTS**

<b>WATER BODY TYPE</b>	<b>SIZE MONITORED FOR TOXICS</b>	<b>SIZE WITH ELEVATED LEVELS OF TOXICANTS</b>
Bays and Harbors (acres)	469,749	319,657
Coastal Shoreline (miles)	109	10
Estuaries (acres)	60,416	51,576
Ground Water (square miles)	34,686	24,858
Lakes / Reservoirs (acres)	562,041	218,165
Ocean and Open Bays (acres)	0	0
Rivers / Streams (miles)	7,416	3,884
Saline Lakes (acres)	367,783	121,683
Wetlands, Freshwater (acres)	13,144	9,528
Wetlands, Tidal (acres)	184	181

## **2. Health Warnings**

The Office of Environmental Health Hazard Assessment (OEHHA) determines whether a public health hazard exists in eating fish or waterfowl from certain locations in California. These risk assessments are based on laboratory testing data and monitoring for toxic substances in fish tissue. Over the past several years the health advisories listed in Table 9 have been issued by OEHHA and listed in the California Sport Fishing Regulations published by the Fish and Game commission and by the California Department of Fish and Game. The percent area of rivers and lakes in California with fish consumption advisories is shown in Table 10.

**TABLE 9  
FISH CONSUMPTION ADVISORIES FOR CALIFORNIA WATERS**

REGION	WATER BODY TYPE	HYDROLOGICAL SUB UNIT AREA	COUNTY	WATER BODY NAME	SIZE OF AREA RESTRICTED	CONTAMINANT	FISH WITH RESTRICTED CONSUMPTION
1	Lake	109.530	Lake	Clear Lake	43,000 acres	Mercury	Largemouth bass, White catfish, Channel catfish, Brown bullhead, Blackfish, Crappie, and Hitch
2	Bay & Estuary	Several	-Several	San Francisco Bay and Delta	NA*	Mercury, PCBs and other chemicals	Striped bass, Sturgeon, Croakers, (Richmond Harbor Channel only; Surfperches, Bullheads, Gobies, and Shellfish)
2	Lake	207.210	Solano	Lake Herman	110 acres	Mercury	Largemouth bass
2	Reservoir	205.400	Santa Clara	Guadalupe Reservoir	80 acres	Mercury	Any type of fish
2	Reservoir	205.400	Santa Clara	Calero Reservoir	350 acres	Mercury	Any type of fish
2	Reservoir	205.400	Santa Clara	Almaden Reservoir	62 acres	Mercury	Any type of fish
2	River	205.400	Santa Clara	Guadalupe River and associated percolation ponds	30 miles	Mercury	Any type of fish
2	Creek	205.400	Santa Clara	Guadalupe Creek and associated percolation ponds	6 miles	Mercury	Any type of fish
2	Creek	205.400	Santa Clara	Alamitos Creek and associated percolation ponds	21 miles	Mercury	Any type of fish
3	Lake	309.820	San Luis Obispo	Lake Nacimiento	5,370 acres	Mercury	Largemouth bass
4	Bay	404.356	Los Angeles	Point Dume, Malibu (Malibu Bay)	NA*	PCBs and DDT	White croaker
4	Bay	404.210	Los Angeles	Malibu Pier (Malibu Bay)	NA*	PCBs and DDT	Queen fish
4	Bay	413.000	Los Angeles	Short Bank (Malibu Bay)	NA*	PCBs and DDT	White croaker
4	Bay	405.120	Los Angeles	Redondo Pier (Malibu Bay)	NA*	PCBs and DDT	Corbina
4	Bay	405.110	Los Angeles	Point Vicente Palos Verde-Northwest (Malibu Bay)	NA*	PCBs and DDT	White croaker
4	Bay	405.110	Los Angeles	White's Point (Malibu Bay)	NA*	PCBs and DDT	White croaker, Sculpin, Rockfishes, Kelp bass
4	Bay	405.120	Los Angeles	Los Angeles/Long Beach Harbor (esp. Cabrillo Pier) (San Pedro Bay)	NA*	PCBs and DDT	White croaker, Queenfish, Black croaker, Surfperches
4	Bay	405.120	Los Angeles	Los Angeles/Long Beach Breakwater (Ocean side) (Long Beach Harbor)	NA*	PCBs and DDT	White croaker, Queenfish, Black croaker, Surfperches
4	Bay	405.120	Los Angeles	Belmont Pier, Pier J (Long Beach Harbor)	NA*	PCBs and DDT	Surfperches
4	Ocean	413.000	Los Angeles	Horseshoe Kelp	NA*	PCBs and DDT	Surfperches
5	Lake	512.210	Napa	Lake Berryessa	20,700 acres	Mercury	Sculpin
4	Lake	405.120	Los Angeles	Machado Lake (Harbor Park Lake)	45.2 acres	Chlordane and DDT	Largemouth bass, Smallmouth bass, White catfish, Channel catfish, Rainbow trout
5	Rivers	541.200	Merced	Grasslands	35 miles	Selenium	Goldfish, Carp
7	Lake	728.000	Imperial and Riverside	Salton Sea	220,000 acres	Selenium	Any type of fish
8	Bay	801.110	Orange	Newport Pier (Newport Bay)	NA*	PCBs and DDT	Croaker, Orangethroat corvina, Sargo, and Tilapia
							White croaker, Corbina

NA = size of restricted area is unclear

**TABLE 10.  
PERCENT AREA OF LAKES AND RIVERS WITH FISH CONSUMPTION RESTRICTIONS**

<b>WATER BODY TYPE</b>	<b>TOTAL AREA IN CALIFORNIA</b>	<b>TOTAL AREA WITH RESTRICTIONS</b>	<b>PERCENT AREA WITH RESTRICTIONS</b>
Lakes	1,672,684 acres	291,717 acres	17.4
Rivers	211,513 miles	92 miles	0.04

### **3. Ocean Beaches Affected By Bathing Area Closures**

Chapter 961, Statutes of 1992 (SB 1865, Hart) requires the Director of Environmental Health of each coastal county to report to the SWRCB annually by March 30 the number of beach closures due to threats to public health within their jurisdiction. The SWRCB is then required to submit this information to the Legislature by the following September 30. In 1996, there were 187 beach closures, 63 more than in 1995. Table 11 lists the number of beach closures/postings for 1996 for each coastal county, organized geographically from north to south.

The vast majority of the closures were due to the release of inadequately treated sewage resulting from broken, blocked, or damaged lines, heavy influx of rainwater, power outages, and pump failures. The other causes of closures included urban runoff and unknown sources. One beach in Orange County was closed due to the appearance of about 250 syringes on the beach. The county beaches north of San Francisco continued to have good water quality. Most closures occurred from Santa Barbara County south. This difference between north and south is consistent from year to year and is linked to the greater recreational use of beaches in the southern half of the State. Monitoring programs are generally more extensive in southern California and more vigorous monitoring often reveals more contamination. Also, the mild weather in southern California allows for beach recreation during the rainy season, and rainfall runoff often leads to closures.

Seven counties reported no closures for both 1995 and 1996. Three counties showed an increased number of closures but a decrease in the overall



number of days closed. Four counties reported fewer closures. San Mateo County reported the largest increase, more than tripling the number of closures. Staff at the San Mateo County Health Department attributed the increase to the reinstatement of a routine monitoring program. Health Department staff felt these data show the value of routine monitoring; if you look more often you may discover more problems.

Comparisons of closure totals among counties are difficult to interpret. One reason for this is the local system for naming a beach. A named beach in one county may be only a few hundred yards long, whereas a beach in a different county can be five miles long. Some agencies do not report individual beach names in their reports to the SWRCB. Therefore, identifying a closure incident does not reveal the length of coastline affected. Some counties routinely post storm drains but do not include these data in their yearly report.

The more heavily urbanized shorelines have more closures than less populated areas. City storm drains can carry contaminated runoff directly to the ocean. A recent report from the Santa Monica Bay Restoration Project linked an increased risk of intestinal and respiratory illness with swimming in water contaminated with storm water drainage. This information has led to permanent warnings in areas where city storm drains empty to the ocean.

Other factors that confound trend analysis include the following:

- Professional judgement and past experience often form the sole basis for closing a beach. Different conditions may trigger closures in different counties.
- Yearly changes in the duration and intensity of rainfall events affect the number of beach closures. It is difficult to make comparisons as beach closures can be caused by prolonged wet weather in "wet years" as well as cloudbursts in low rainfall years.
- Part of the response to past beach closure problems associated with overflows and sewerage systems spills involves increased monitoring, which has the potential to reveal more problems.

The SWRCB and the coastal RWQCBs operate several programs to address the causes of beach closures. The core regulatory program of permitting, enforcement, and compliance monitoring plays a vital role. For example, the responsible sewerage entity must report sewage spills of greater than 100 gallons to the appropriate RWQCB. In addition to follow-up activities, such incidents are tabulated and presented to RWQCB members at their monthly public meetings. In regard to oil spills, the typical reportable quantity is one barrel and such instances are reported to the Office of Emergency Services which in turn contacts the appropriate RWQCB. Where urban runoff has caused a closure, the recent implementation of storm water permits under the National Pollutant Discharge Elimination System (federal permits program) will assist in follow-up action. Other programs which assist in addressing the cause of beach closures include cooperative and public outreach partnership endeavors such as the Santa Monica Bay Restoration Project, the development of ocean water quality standards (California Ocean Plan), and funding assistance such as the State Revolving Fund Program.

TABLE 11

## CALIFORNIA BEACH CLOSURES DURING 1996

COUNTY (NORTH TO SOUTH)	NUMBER OF CLOSURES/POSTINGS	NUMBER OF DAYS CLOSED/POSTED	REASON(S)
Del Norte	0	0	
Humboldt	0	0	
Mendocino	0	0	
Sonoma	0	0	
Marin	0	0	
San Francisco	30	190	Rain and construction
Contra Costa	0	0	
Alameda	0	0	
San Mateo	48	1,144	Sewage
Santa Cruz	1	3	Sewage
Monterey	0	0	
San Luis Obispo	2	40	Storm runoff
Santa Barbara	5	86	Sewage spills, urban runoff
Ventura	1	3	Sewage spill
Los Angeles	4	10	Discharge of inadequately treated sewage
Orange	22	277	Pump failure, line blockage, one closure involved 250 syringes found on beach
San Diego	74	1,365	Sewage, urban runoff, 3 of the 74 are permanent closures (accounts for 1,095 of days closed)



#### **IV. GROUND WATER ASSESSMENT**

California includes ground waters in its statewide WBS database. The WBS database provides the major and minor causes and sources affecting the water quality of a particular ground water basin. The causes and sources of impairment for each ground water assessed in the WBS database are presented in Table 12A. The causes and sources shown for each ground water impairment are not necessarily linked. Tables 12B and 12C present the total area of ground waters in the WBS impaired by various cause and source categories, respectively. Table 12B and 12C were developed in the same manner as Tables 6A-6I and Tables 7A-7I in Section III (Surface Water Assessment).



TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
1	ALEXANDER VALLEY AREA	114.25	Oil and grease Priority organics	23 23	Lust/Leaking Undergrnd Stor. Tanks	23	23
1	ANDERSON VALLEY	1-190	Oil and grease Priority organics	5 5	Lust/Leaking Undergrnd Stor. Tanks Petroleum Activities Resource Extraction Spills	5 5 5 5	5
1	ANNAPOLIS OHLSON RANCH	1-490	Oil and grease	10	Lust/Leaking Undergrnd Stor. Tanks	10	10
1	BIG RIVER VALLEY	1-450	Oil and grease Priority organics	5 5	Lust/Leaking Undergrnd Stor. Tanks Spills	5 5	5
1	BODEGA BAY AREA	1-210	Oil and grease Petroleum/Gasoline Priority organics	5 5 5	Lust/Leaking Undergrnd Stor. Tanks Spills	5 5	5
1	CLOVERDALE AREA	114.25	Oil and grease Pesticides Priority organics	9 9 9	Lust/Leaking Undergrnd Stor. Tanks Spills	9 9	9
1	EEL RIVER VALLEY	1-100	Oil and grease Priority organics	0 0	Lust/Leaking Undergrnd Stor. Tanks Spills	120 120	120
1	EUREKA PLAIN	1-90	Oil and grease Priority organics	60 60	Land Disposal Landfills Lust/Leaking Undergrnd Stor. Tanks Petroleum Activities Resource Extraction Spills	60 60 60 60 60 60	60
1	FORT BRAGG TERRACE AREA	1-210	Oil and grease Priority organics	24 24	Lust/Leaking Undergrnd Stor. Tanks Spills	24 24	24
1	GARBerville TOWN AREA	1-320	Oil and grease Priority organics	0 0	Lust/Leaking Undergrnd Stor. Tanks Spills	5 5	5
1	GUALALA RIVER VALLEY	1-470	Oil and grease Priority organics	5 5	Lust/Leaking Undergrnd Stor. Tanks	5	5
1	HEALDSBURG AREA	114.25	Oil and grease Priority organics	27 27	Lust/Leaking Undergrnd Stor. Tanks Spills	27 27	27

\* Causes and Sources are not linked.

\*\* "Size" refers to the affected size (square miles) of the water body and "Total Size" refers to the size of the entire water body.

TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
1	LEGGETT AREA	1000000	Oil and grease Priority organics	2 2	Lust/Leaking Undergrnd Stor. Tanks	2	2
1	LITTLE LAKE VALLEY	1-130	Oil and grease Priority organics	17 17	Lust/Leaking Undergrnd Stor. Tanks Spills	17 17	17
1	LOWER RUSSIAN RIVER VALLEY	114.10	Oil and grease Priority organics	9 9	Lust/Leaking Undergrnd Stor. Tanks Spills	9 9	9
1	MAD RIVER VALLEY	1-80	Oil and grease Priority organics	60 60	Lust/Leaking Undergrnd Stor. Tanks Spills	60 60	60
1	MODOC PLATEAU PVA	1-240	Oil and grease Priority organics	3000 3000	Lust/Leaking Undergrnd Stor. Tanks Petroleum Activities Resource Extraction Spills	3000 3000 3000 3000	3000
1	SANTA ROSA PLAINS	114.22	Metals Nutrients Oil and grease Priority organics	96 96 96 96	Agriculture Lust/Leaking Undergrnd Stor. Tanks Petroleum Activities Resource Extraction Spills	96 96 96 96 96	96
1	SHASTA VALLEY	1-40	Oil and grease Pesticides Priority organics	340 0 0	Lust/Leaking Undergrnd Stor. Tanks Petroleum Activities Resource Extraction Spills	340 340 340 340	340
1	SMITH RIVER PLAIN	1-10	Pesticides Petroleum/Gasoline Priority organics	70 70 70	Agriculture Lust/Leaking Undergrnd Stor. Tanks Spills	70 70 70	70
1	UKIAH VALLEY	114.31	Metals Priority organics	16 16	Lust/Leaking Undergrnd Stor. Tanks Petroleum Activities Resource Extraction Spills	16 16 16 16	16
1	WEAVERVILLE AREA	1000000	Petroleum/Gasoline Priority organics	2 2	Lust/Leaking Undergrnd Stor. Tanks Spills	2 2	2
1	WINDSOR AREA	1000000	Metals Oil and grease	2 2	Lust/Leaking Undergrnd Stor. Tanks Spills	2 2	2

\* Causes and Sources are not linked.

\*\* "Size" refers to the affected size (square miles) of the water body and "Total Size" refers to the size of the entire water body.



TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
2	ALAMEDA CREEK (NILES CONE) GW	204.300	Priority organics	2			
			Nonpriority organics	96	Lust/Leaking Undergrnd Stor. Tanks	96	97
			Priority organics	96			
			Salinity/TDS/chlorides	96			
2	LIVERMORE VALLEY GW	204.300	Nonpriority organics	170	Lust/Leaking Undergrnd Stor. Tanks	170	170
2	PETALUMA VALLEY GW	206.300	Pathogens/Path.Indicators	41	Agriculture	41	41
2	SANTA CLARA VALLEY GW	205.300	Nonpriority organics	20	Lust/Leaking Undergrnd Stor. Tanks	20	240
			Priority organics	20			
			Salinity/TDS/chlorides	20			

\* Causes and Sources are not linked.

\*\* "Size" refers to the affected size (square miles) of the water body and "Total Size" refers to the size of the entire water body.

TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
3	ARROYO GRANDE VALLEY-NIPOMO MESA AREA	310.320	Chloroform	90	Industrial Point Sources	90	90
			Priority organics	90	Source Unknown	90	
			Toluene	90			
			Total Trihalomethanes	90			
3	BIG SUR GROUNDWATER BASIN	308.000	Chloroform	1	Source Unknown	1	1
			Dibromochloromethane/DBCM	1			
			Freon II	1			
			Nonpriority organics	1			
			Priority organics	1			
3	CARMEL VALLEY	307.000	Chloroform	10	Agriculture	10	10
			Nitrates	10	Source Unknown	10	
			Nutrients	10			
			PCE/Tetrachloroethylene	10			
			Priority organics	10			
			Bromodichloromethane/DBCM	20			
			Chloroform	20			
3	CHORRO VALLEY	310.220	Flow alteration	20	Agricultural Return Flows	20	20
			Nitrates	20	Agriculture	20	
			Nutrients	20	Groundwater Withdrawal	20	
			Priority organics	20	Irrigated Crop Production	20	
			Salinity/TDS/chlorides	4	Land Disposal	20	
			Chloroform	20	Municipal Point Sources	20	
			Flow alteration	20	Nonpoint Source	20	
			Nitrates	20	Point Source(unspecified)	20	
			Nutrients	20	Saltwater Intrusion	20	
			Priority organics	20	Source Unknown	20	
			Bromodichloromethane/DBCM	20	Industrial Point Sources	105	
			Chloroform	20			
			Flow alteration	20			
Nitrates	20						
Nutrients	20						
Priority organics	20						
Salinity/TDS/chlorides	4						
3	CUYAMA VALLEY	312.000	Priority organics	105		105	105
			Toluene	105			
3	GILROY-HOLLISTER	305.000	Nitrates	350	Agriculture	350	350
			Nutrients	350	Industrial Point Sources	350	
			PCE/Tetrachloroethylene	350	Source Unknown	350	
			Priority organics	350			
			TCA/Trichloroethane	350			
			TCE/Trichloroethylene	350			
			Bromoform	16	Source Unknown	16	
Chloroform	16						

\* Causes and Sources are not linked.

\*\* "Size" refers to the affected size (square miles) of the water body and "Total Size" refers to the size of the entire water body.

TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
3	LANGLEY AREA GROUNDWATER BASIN	300.000	Dichlorobromomethane/DCBM	16			
			Freon 11	16			
			Nonpriority organics	16			
			Priority organics	16			
			Total Trihalomethanes	16			
			Nitrates	27	Agriculture	27	27
			Nutrients	27			
3	LOS OSOS VALLEY	310.220	Nitrates	20	Agriculture	20	20
			Nutrients	20	Groundwater Loadings	20	20
			Salinity/TDS/chlorides	20	Groundwater Withdrawal	20	20
					Irrigated Crop Production	20	20
					Nonpoint Source	20	20
3	MONTECITO AREA	315.330	Chloroform	3		3	3
			Dichloroethylene/DCE	3			
			Priority organics	3			
			TCA/Trichloroethane	3			
					Septage Disposal	20	20
3	PAJARO VALLEY	305.000	Bromodichloromethane/BDCM	120	Agricultural Return Flows	120	120
			Bromoform	120	Agriculture	120	120
			Chloroform	120	Groundwater Loadings	120	120
			Chromium	120	Groundwater Withdrawal	120	120
			Dibromochloromethane/DBCM	120	Industrial Point Sources	120	120
			Diethylhexylphthalate/DEHP	120	Irrigated Crop Production	120	120
			Iron	120	Nonpoint Source	120	120
			Lead	120	Point Source(unspecified)	120	120
			Manganese	120	Source Unknown	120	120
			Mercury	120			
			Metals	120			
			Nonpriority organics	120			
			Nutrients	120			
			PCE/Tetrachloroethylene	120			
			Priority organics	120			
Salinity/TDS/chlorides	120						

\* Causes and Sources are not linked.

\*\* "Size" refers to the affected size (square miles) of the water body and "Total Size" refers to the size of the entire water body.

TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
3	PASO ROBLES BASIN	309.800	Saltwater intrusion	120			
			Sulfates	120			
			TCE/Trichloroethylene	120			
			Total Trihalomethanes	120			
			Bromodichloromethane/BDCM	886	Source Unknown	886	886
			Bromoform	886			
			Chloroform	886			
			Dichlorobenzene	886			
			Dichloroethylene/DCE	886			
			Freon II	886			
			Nonpriority organics	886			
			Priority organics	886			
			Toluene	886			
			Total Trihalomethanes	886			
3	SALINAS VALLEY, EASTSIDE AQUIFER	309.000	Dichloroethane/DCA	124	Agriculture	124	124
			Freon II	124	Agriculture-irrigation tailwater	124	124
			Nitrates	124	Animal Operations	124	124
			Nonpriority organics	124	Natural Sources	124	124
			Nutrients	124	Septage Disposal	124	124
			PCE/Tetrachloroethylene	124	Source Unknown	124	124
			Priority organics	124			
			Salinity/TDS/chlorides	124			
			Toluene	124			
			Nitrates	167	Agriculture	167	167
			Nutrients	167	Animal Operations	167	167
			Priority organics	167	Lust/Leaking Undergrnd Stor. Tanks	167	167
			Salinity/TDS/chlorides	167	Nonpoint Source	167	167
			Nitrates	124	Agriculture	124	124
Nutrients	124	Animal Operations	124	124			
Priority organics	124	Point Source(unspecified)	124	124			
Salinity/TDS/chlorides	124	Saltwater intrusion	124	124			
		Septage Disposal	124	124			
3	SALINAS VALLEY, UPPER VALLEY AQUIFER	309.000	Cadmium	205	Agriculture	205	205
			Metals	205	Industrial Point Sources	205	205

\* Causes and Sources are not linked.

\*\* "Size" refers to the affected size (square miles) of the water body and "Total Size" refers to the size of the entire water body.

TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
3	SAN ANTONIO CREEK VALLEY	313.000	Nitrates	205	Land Disposal	205	205
			Nutrients	205	Natural Sources	205	
			Priority organics	205	Septage Disposal	205	
			Salinity/TDS/chlorides	205			25
			Trace Elements	205			
			Chlorides	25	Industrial Point Sources	25	
			Heptachlor	25	Source Unknown	25	25
			Herbicides	25			
			Metals	25			
			Pesticides	25			
			Priority organics	25			
			Salinity/TDS/chlorides	25			
			Sulfates	25			15
			Total Dissolved Solids	25			
			Chloroform	15	Agriculture	15	
Overdraft	15	Industrial Point Sources	15	15			
PCE/Tetrachloroethylene	15	Source Unknown	15				
Priority organics	15						
3	SANTA BARBARA BASIN	315.320	Bromoform	20	Industrial Point Sources	20	20
			Dichloroethane/DCA	20	Source Unknown	20	
			Dichloroethylene/DCE	20			265
			Nonpriority organics	20			
			PCE/Tetrachloroethylene	20			
			Priority organics	20			
			Total Trihalomethanes	20			
			Atrazine	265	Agriculture	265	
			Bromoform	265	Industrial Point Sources	265	265
			Dibromochloromethane/DBCM	265	Irrigated Crop Production	265	
			Dichloroethane/DCA	265	Municipal Point Sources	265	265
			Freon II	265	Source Unknown	265	
			Nitrates	265			
			Nonpriority organics	265			265
			Nutrients	265			
Other inorganics	265						
3	SANTA MARIA RIVER VALLEY	312.000					265

\* Causes and Sources are not linked.

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**	
3	SANTA YNEZ RIVER VALLEY	314.000	PCE/Tetrachloroethylene	265				
			Pesticides	265				
			Priority organics	265				
			Salinity/TDS/chlorides	265				
			TCA/Trichloroethane	265				
			TCE/Trichloroethylene	265				
			Total Trihalomethanes	265				
			Benzene	123	Agriculture	123	123	123
			Dichloroethylene/DCE	123	Agriculture-irrigation tailwater	123	123	123
			Nonpriority organics	123	Agriculture-surface drainage	123	123	123
3	SCOTTS VALLEY	304.000	Priority organics	123	Lust/Leaking Undergrnd Stor. Tanks	123	123	
			Salinity/TDS/chlorides	123	Municipal Point Sources	123	123	
			Toluene	123	Point Source(unspecified)	123	123	
			Xylene	123	Source Unknown	123	123	
					Unknown point source	123	123	
			Chloroform	60	Industrial Point Sources	60	60	
			Dichlorobenzene	60	Source Unknown	60	60	
			Diethylhexylphthalate/DEHP	60				
			PCE/Tetrachloroethylene	60				
			Priority organics	60				
3	SEASIDE AREA GROUNDWATER BASIN	309.500	TCE/Trichloroethylene	60				
			Toluene	60				
			Total Trihalomethanes	60				
			Chlorine	50	Industrial Point Sources	50	50	
			Dichloroethylene/DCE	50	Source Unknown	50	50	
			Freon II	50				
			Methylene	50				
			Nonpriority organics	50				
			PCE/Tetrachloroethylene	50				
			Priority organics	50				
TCA/Trichloroethane	50							
TCE/Trichloroethylene	50							
Toluene	50							

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
4	ARROYO SANTA ROSA BASIN	403.63	Nonpriority organics Nutrients	5 5	Agriculture Septage Disposal	5 5	5 5
4	CENTRAL BASIN LOWER- PRODUCTION ZONES	405.15	Priority organics	277	Groundwater Loadings Land Disposal Landfills	277 77 277	277
4	CENTRAL BASIN UPPER-SHALLOW AND SEMI-PERCHED AQUIFERS	405.15	Priority organics	277	Illegal dumping Industrial Point Sources Other Urban Runoff/Storm Sewers	277 277 277 277	277
4	CHINO AREA BASIN	481.21	Nutrients	10	Agriculture Animal Operations Septage Disposal	10 10 10	10
4	LOWER OJAI VALLEY BASIN	402.32	Nutrients	23	Agriculture Animal Operations Septage Disposal	23 23 23	23
4	LOWER VENTURA BASIN	402.1	Nutrients	8	Agriculture Animal Operations Septage Disposal Urban Runoff/Storm Sewers	8 8 8 8	8
4	MAIN SAN GABRIEL VALLEY BASIN	405.42	Priority organics	141	Industrial Point Sources Land Disposal Landfills	141 41 141	141
4	OXNARD PLAIN BASIN	403.11	Nutrients Salinity/TDS/chlorides	111 111	Agriculture Groundwater Loadings Groundwater Withdrawal Septage Disposal	111 111 111 111	111
4	PLEASANT VALLEY BASIN	403.12	Salinity/TDS/chlorides	36	Groundwater Loadings Septage Disposal	36 36	36
4	PUENTE BASIN	405.41	Priority organics Salinity/TDS/chlorides	16 16	Agriculture Industrial Point Sources Land Disposal Landfills	16 16 16 16	16

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
4	RAYMOND BASIN	405.31	Priority organics	37	Industrial Point Sources Land Disposal Landfills	37 37 37	37
4	SAN ANTONIO CREEK AREA BASIN	402.2	Nutrients	4	Agriculture Animal Operations Septage Disposal Urban Runoff/Storm Sewers	4 4 4 4	4
4	SANTA CLARA-PIRU CREEK BASIN	403.41	Nutrients	14	Agriculture Animal Operations Septage Disposal Urban Runoff/Storm Sewers	14 14 14 14	14
4	SANTA CLARA-SESPE BASIN	403.31	Nutrients	31	Agriculture Septage Disposal	31 31	31
4	SANTA MONICA BASIN	405.13	Priority organics	40	Industrial Point Sources	40	40
4	SIERRA PELONA VALLEY BASIN	403.55	Nutrients	11	Agriculture Animal Operations Septage Disposal	11 11 11	11
4	VERDUGO BASIN	405.24	Nutrients	11	Septage Disposal	11	11
4	WEST COAST BASIN LOWER- PRODUCTION ZONES	405.12	Salinity/TDS/chlorides	141	Groundwater Loadings Groundwater Withdrawal	141 141	141
4	WEST COAST BASIN UPPER- SHALLOW AND SEMI-PERCHED ZONES	405.12	Priority organics Salinity/TDS/chlorides	141 141	Groundwater Withdrawal Illegal dumping Industrial Point Sources Urban Runoff/Storm Sewers	141 141 141 141	141

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
5	CHOWCHILLA BASIN PORT	5-22	DBCP/Dibromochloropropane	230	Agriculture	230	230
			Nitrates	230	Animal Operations	230	
			Nonpriority organics	230	Dairies	230	
			Nutrients	230	Industrial Point Sources	230	
			Pesticides	230	Lust/Leaking Undergrnd Stor. Tanks	230	
			Priority organics	230	Septage Disposal	230	
			Salinity/TDS/chlorides	230			
			Arsenic	365	Agriculture	365	
			Boron	365	Industrial Point Sources	365	
			Metals	365	Lust/Leaking Undergrnd Stor. Tanks	365	
5	DELTA - MENDOTA BASIN PORT	5-22	Nitrates	365	Natural Sources	365	
			Nonpriority organics	365			
			Nutrients	365			
			Priority organics	365			
			Salinity/TDS/chlorides	365			
			Selenium	365			
			Trace Elements	365			
			DBCP/Dibromochloropropane	1140	Agriculture	1140	
			Nitrates	1140	Animal Operations	1140	
			Nonpriority organics	1140	Dairies	1140	
5	EASTERN SAN JOAQUIN COUNTY BASIN PORT	5-22	Nutrients	1140	Industrial Point Sources	1140	
			Pesticides	1140	Lust/Leaking Undergrnd Stor. Tanks	1140	
			Priority organics	1140	Natural Sources	1140	
			Salinity/TDS/chlorides	1140	Septage Disposal	1140	
			DBCP/Dibromochloropropane	690	Agriculture	690	
			Nitrates	690	Animal Operations	690	
			Nonpriority organics	690	Dairies	690	
			Nutrients	690	Industrial Point Sources	690	
			Pesticides	690	Lust/Leaking Undergrnd Stor. Tanks	690	
			Priority organics	690	Septage Disposal	690	
5	KAWEAH BASIN PORT	5-22	DBCP/Dibromochloropropane	3770	Agriculture	3770	
			Nitrates	3770	Animal Operations	3770	
			Nonpriority organics	3770	Dairies	3770	
			Nutrients	3770	Industrial Point Sources	3770	
			Pesticides	3770	Lust/Leaking Undergrnd Stor. Tanks	3770	
			Priority organics	3770	Septage Disposal	3770	
			Salinity/TDS/chlorides	3770			
			Arsenic	3770			
			DBCP/Dibromochloropropane	3770			
			Metals	3770			

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
5	KINGS BASIN PORT	5-22	Nitrates	3770	Industrial Point Sources	3770	1610
			Nonpriority organics	3770	Lust/Leaking Undergrnd Stor. Tanks	3770	
			Nutrients	3770	Natural Sources	3770	
			Pesticides	3770	Septage Disposal	3770	
			Priority organics	3770			
			Salinity/TDS/chlorides	3770			
			Selenium	3770			
			Trace Elements	3770			
			DBCP/Dibromochloropropane	1610	Agriculture	1610	
			Nitrates	1610	Animal Operations	1610	
5	MADERA BASIN PORT	5-22	Nonpriority organics	1610	Dairies	1610	580
			Nutrients	1610	Industrial Point Sources	1610	
			Pesticides	1610	Lust/Leaking Undergrnd Stor. Tanks	1610	
			Priority organics	1610	Septage Disposal	610	
			Salinity/TDS/chlorides	1610			
			DBCP/Dibromochloropropane	580	Agriculture	580	
			Nitrates	580	Animal Operations	580	
			Nonpriority organics	580	Dairies	580	
			Nutrients	580	Industrial Point Sources	580	
			Pesticides	580	Lust/Leaking Undergrnd Stor. Tanks	580	
5	MERCED BASIN PORT	5-22	Priority organics	580	Septage Disposal	580	690
			Salinity/TDS/chlorides	580			
			DBCP/Dibromochloropropane	690	Agriculture	690	
			Nitrates	690	Animal Operations	690	
			Nonpriority organics	690	Dairies	690	
			Nutrients	690	Industrial Point Sources	690	
			Pesticides	690	Lust/Leaking Undergrnd Stor. Tanks	690	
			Priority organics	690	Septage Disposal	690	
			DBCP/Dibromochloropropane	340	Agriculture	340	
			Nitrates	340	Dairies	340	
5	MODESTO BASIN PORT	5-22	Nonpriority organics	340	Industrial Point Sources	340	340
			Nutrients	340	Lust/Leaking Undergrnd Stor. Tanks	340	
			Pesticides	340	Septage Disposal	340	
			Priority organics	340			

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
5	SACRAMENTO COUNTY BASIN PORT	5-22	Nonpriority organics	750	Industrial Point Sources	750	750
			Priority organics	750	Lust/Leaking Undergrnd Stor. Tanks	750	
			Arsenic	570	Agriculture	570	
			Boron	570	Industrial Point Sources	570	
			Metals	570	Lust/Leaking Undergrnd Stor. Tanks	570	
			Molybdenum	570	Natural Sources	570	
			Nitrates	570	Septage Disposal	570	
			Nonpriority organics	570			
			Nutrients	570			
			Priority organics	570			
5	TULARE LAKE BASIN PORT	5-22	Salinity/TDS/chlorides	570			780
			Trace Elements	570			
			Arsenic	780	Agriculture	780	
			Boron	780	Industrial Point Sources	780	
			Metals	780	Lust/Leaking Undergrnd Stor. Tanks	780	
			Molybdenum	780	Natural Sources	780	
			Nitrates	780			
			Nonpriority organics	780			
			Nutrients	780			
			Priority organics	780			
5	TULE BASIN PORT	5-22	Salinity/TDS/chlorides	780			730
			Selenium	780			
			Trace Elements	780			
			Uranium	780			
			Arsenic	730	Agriculture	730	
			DBCP/Dibromochloropropane	730	Animal Operations	730	
			Metals	730	Dairies	730	
			Nitrates	730	Industrial Point Sources	730	
			Nonpriority organics	730	Lust/Leaking Undergrnd Stor. Tanks	730	
			Nutrients	730	Natural Sources	730	
5	TURLOCK BASIN PORT	5-22	Pesticides	730	Septage Disposal	730	545
			Priority organics	730			
			Salinity/TDS/chlorides	730			
			Trace Elements	730			
			DBCP/Dibromochloropropane	545	Agriculture	545	

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**		
5	WESTSIDE BASIN PORT	5-22	Nitrates	545	Dairies	545			
			Nonpriority organics	545	Industrial Point Sources	545			
			Nutrients	545	Lust/Leaking Undergrnd Stor. Tanks	545			
			Pesticides	545	Septage Disposal	545			
			Priority organics	545					
			Salinity/TDS/chlorides	545					
			Boron	1040	Agriculture	1040			
			Metals	1040	Natural Sources	1040			
			Salinity/TDS/chlorides	1040					
			Selenium	1040					
			Trace Elements	1040					

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
6	ANTELOPE VALLEY (NL)	6-7	Metals	1	Agriculture	36	36
			Nitrates	36	Natural Sources	1	
			Nutrients	36	Septage Disposal	36	
			Salinity/TDS/chlorides	1			
			Trace Elements	1			
6	ANTELOPE VALLEY (SL)	6-44	Coliform	122	Hazardous Waste	122	1622
			Flow alteration	1622	Land Disposal	1622	
			Metals	122	Landfills	1622	
			Nitrates	122	Lust/Leaking Undergrnd Stor. Tanks	122	
			Nutrients	122	Natural Sources	1622	
			Pathogens/Path.Indicators	122	Resource Extraction	1622	
			Priority organics	122	Septage Disposal	1622	
			Salinity/TDS/chlorides	1622	Spills	122	
					Urban Runoff/Storm Sewers	122	
					Natural Sources	120	
6	BICYCLE VALLEY	6-25	Salinity/TDS/chlorides	120	Natural Sources	120	100
			Coliform	100	Agriculture	100	
			Metals	100	Lust/Leaking Undergrnd Stor. Tanks	2	
			Nitrates	100	Natural Sources	100	
			Nutrients	100	Resource Extraction	100	
			Oil and grease	2	Septage Disposal	100	
			Other inorganics	100	Urban Runoff/Storm Sewers	2	
			Pathogens/Path.Indicators	100			
			Priority organics	2			
			Salinity/TDS/chlorides	100			
6	BROADWELL VALLEY	6-32	Flow alteration	120	Flow Regulation/Modification	120	120
			Salinity/TDS/chlorides	120	Hydromodification	120	
					Natural Sources	120	
6	CADY SPRINGS RECHARGE AREA	6-0000	Coliform	6	Land Disposal	6	6
			Nitrates	6	Nonpoint Source	6	
			Nutrients	6	Septage Disposal	6	
			Pathogens/Path.Indicators	6	Wastewater - land disposal	6	
			Salinity/TDS/chlorides	6			
6	CALIFORNIA VALLEY	6-79	Salinity/TDS/chlorides	60	Natural Sources	60	60

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REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
6	CARSON VALLEY	6-6	Coliform	20	Agriculture	20	20
			Nitrates	20	Land Disposal	20	
			Nutrients	20	Septage Disposal	20	
			Pathogens/Path.Indicators	20			
6	CAVES CANYON VALLEY	6-38	Salinity/TDS/chlorides	100	Natural Sources	100	100
6	COSO VALLEY	6-55	Salinity/TDS/chlorides	50	Natural Sources	50	50
6	COYOTE LAKE VALLEY	6-37	Salinity/TDS/chlorides	150	Natural Sources	150	150
6	CUDEBACK VALLEY	6-50	Salinity/TDS/chlorides	180	Natural Sources	180	180
6	DARWIN VALLEY	6-57	Salinity/TDS/chlorides	70	Natural Sources	70	70
6	DEATH VALLEY	6-18	Flow alteration	1320	Flow Regulation/Modification	1320	1320
		Metals	1320	Hydromodification	1320		
		Salinity/TDS/chlorides	1320	Natural Sources	1320		
		Trace Elements	1320				
6	DENNING SPRING VALLEY	6-78	Salinity/TDS/chlorides	18	Natural Sources	18	18
6	DOG VALLEY	6-0000	Arsenic	1	Flow Regulation/Modification	7	7
			Coliform	7	Hydromodification	7	
			Flow alteration	7	Lust/Leaking Undergrnd Stor. Tanks	1	
			Metals	1	Natural Sources	7	
			Nitrates	7	Septage Disposal	7	
			Nutrients	7			
			Oil and grease	1			
			Pathogens/Path.Indicators	7			
			Priority organics	1			
			Trace Elements	1			
			6	EAGLE LAKE AREA	6-96	Coliform	
		Metals	22	Lust/Leaking Undergrnd Stor. Tanks	2		
		Nitrates	2	Natural Sources	22		
		Nutrients	2	Septage Disposal	2		
		Oil and grease	2				
		Pathogens/Path.Indicators	2				
6	EL MIRAGE VALLEY	6-43	Priority organics	2			120
			Salinity/TDS/chlorides	70	Natural Sources	70	

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REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**				
6	FREMONT VALLEY	6-46	Flow alteration	220	Agriculture	330	330				
			Metals	220	Flow Regulation/Modification	330					
			Salinity/TDS/chlorides	220	Hydromodification	330					
			Trace Elements	220	Mine Tailings	330					
6	GOLDSTONE VALLEY	6-48	Salinity/TDS/chlorides	30	Natural Sources	30	30				
			Salinity/TDS/chlorides	210	Natural Sources	210					
6	HONEY LAKE VALLEY	6-4	Coliform	490	Agriculture	490	490				
			Flow alteration	490	Agriculture-surface drainage	490					
			Metals	1	Construction/Land Development	490					
			Nitrates	490	Geothermal Development	490					
			Nonpriority organics	1	Hazardous Waste	1					
			Nutrients	490	Land Disposal	1					
			Oil and grease	1	Lust/Leaking Undergrnd Stor. Tanks	1					
			Pathogens/Path.Indicators	490	Natural Sources	490					
			Priority organics	1	Nonpoint Source	490					
			Salinity/TDS/chlorides	490	Out-of-state source	490					
			Trace Elements	490	Resource Extraction	490					
			6	INDIAN WELLS VALLEY	6-54	Flow alteration		20	Groundwater Withdrawal	20	520
						Salinity/TDS/chlorides		20	Hydromodification	20	
Flow alteration	300	Natural Sources				20					
Metals	300	Flow Regulation/Modification				300					
Salinity/TDS/chlorides	180	Hydromodification				300					
Trace Elements	180	Natural Sources				300					
Salinity/TDS/chlorides	17	Resource Extraction				300					
Salinity/TDS/chlorides	50	Natural Sources				17					
6	IVANPAH VALLEY	6-30				Flow alteration	300	Flow Regulation/Modification	300	300	
						Metals	300	Hydromodification	300		
6	KELSO LANDER VALLEY	6-69				Salinity/TDS/chlorides	17	Natural Sources	17	17	
						Salinity/TDS/chlorides	50	Hazardous Waste	50		
6	LANGFORD VALLEY	6-36				Salinity/TDS/chlorides	50	Land Disposal	50	50	
			Salinity/TDS/chlorides	50	Lust/Leaking Undergrnd Stor. Tanks	50					
			Salinity/TDS/chlorides	50	Natural Sources	50					
			Salinity/TDS/chlorides	50	Spills	50					

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REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
6	LEACH VALLEY	6-27	Salinity/TDS/chlorides	70	Natural Sources	70	70
6	LEVIATHAN MINE AREA	6-0000	Metals pH (High or Low)	1 1	Acid Mine Drainage Hydromodification	1 1	1
6	LONG VALLEY (NL)	6-104	Coliform Flow alteration Nitrates Nutrients Pathogens/Path.Indicators	28 28 28 28 28	Agriculture Flow Regulation/Modification Hydromodification Septage Disposal	28 28 28 28	28
6	LOWER KINGSTON VALLEY	6-21	Salinity/TDS/chlorides	290	Natural Sources	290	290
6	LOWER MOJAVE RIVER VALLEY	6-40	Flow alteration Metals Nitrates Nutrients Oil and grease Priority organics Salinity/TDS/chlorides Trace Elements	300 1 51 51 51 51 300 300	Agriculture Flow Regulation/Modification Hazardous Waste Hydromodification Land Disposal Landfills Lust/Leaking Undergrnd Stor. Tanks Natural Sources Nonpoint Source Septage Disposal Spills	51 300 51 300 51 51 51 300 300 51 51	300
6	MADELINE PLAINS	6-2	Coliform Metals Nitrates Nutrients Other inorganics Pathogens/Path.Indicators Salinity/TDS/chlorides Trace Elements	270 270 270 270 270 270 270	Natural Sources Septage Disposal	270 270	270
6	MARTIS VALLEY	6-67	Coliform Flow alteration Metals Nitrates Nutrients Oil and grease	6 6 6 6 6 1	Flow Regulation/Modification Highway Maintenance And Runoff Hydromodification Land Disposal Lust/Leaking Undergrnd Stor. Tanks Natural Sources	6 6 6 1 1 6	25

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REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
6	MESQUITE VALLEY	6-29	Pathogens/Path.Indicators	6	Septage Disposal	6	120
			Priority organics	1	Urban Runoff/Storm Sewers	6	
			Trace Elements	6			
6	MIDDLE AMARGOSA VALLEY	6-20	Salinity/TDS/chlorides	70	Natural Sources	70	620
			Salinity/TDS/chlorides	620	Natural Sources	620	
6	MIDDLE MOJAVE RIVER VALLEY	6-41	Cause Unknown	3	Agriculture	3	430
			Metals	3	Industrial Land Treatment	3	
			Oil and grease	3	Land Disposal	3	
			Priority organics	3	Landfills	3	
			Salinity/TDS/chlorides	3	Lust/Leaking Undergrnd Stor. Tanks	3	
			Trace Elements	3	Natural Sources	3	
			Spills	3		3	
6	MODOC PLATEAU PVA (REG 6)	6-103	Salinity/TDS/chlorides	100	Natural Sources	100	100
6	MONO VALLEY	6-9	Coliform	82	Flow Regulation/Modification	250	250
			Flow alteration	82	Hydromodification	250	
			Nitrates	82	Land Disposal	82	
			Nutrients	82	Natural Sources	250	
			Pathogens/Path.Indicators	82	Septage Disposal	82	
			Salinity/TDS/chlorides	82			
			Trace Elements	82			
			Cause Unknown	1030	Flow Regulation/Modification	1030	
			Coliform	1030	Hazardous Waste	2	
			Flow alteration	1030	Hydromodification	1030	
6	OWENS VALLEY	6-12	Metals	1030	Land Disposal	1030	1030
			Nutrients	1030	Landfills	1030	
			Oil and grease	2	Lust/Leaking Undergrnd Stor. Tanks	1030	
			Pathogens/Path.Indicators	1030	Nonpoint Source	1030	
			Priority organics	2	Resource Extraction	1030	
			Salinity/TDS/chlorides	1030	Septage Disposal	1030	
			Metals	360	Lust/Leaking Undergrnd Stor. Tanks	360	
			Oil and grease	360	Mine Tailings	360	
			Priority organics	360	Natural Sources	360	
			Salinity/TDS/chlorides	360	Resource Extraction	360	
6	PANAMINT VALLEY	6-58	Metals	360	Lust/Leaking Undergrnd Stor. Tanks	360	360
			Oil and grease	360	Mine Tailings	360	
			Priority organics	360	Natural Sources	360	
			Salinity/TDS/chlorides	360	Resource Extraction	360	

\* Causes and Sources are not linked.

\*\* "Size" refers to the affected size (square miles) of the water body and "Total Size" refers to the size of the entire water body.

TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
6	RIGGS VALLEY	6-23	Trace Elements	360	Spills	360	
6	SEARLES VALLEY	6-52	Salinity/TDS/chlorides	100	Natural Sources	100	100
			Metals	1	Mine Tailings	1	250
			Oil and grease	1	Natural Sources	250	
			Salinity/TDS/chlorides	250	Resource Extraction	1	
6	SILVER LAKE VALLEY	6-34	Salinity/TDS/chlorides	40	Natural Sources	40	40
6	SODA LAKE VALLEY	6-33	Salinity/TDS/chlorides	500	Natural Sources	500	500
6	SQUAW VALLEY	6-0000	Flow alteration	3	Flow Regulation/Modification	3	3
			Herbicides	1	Highway Maintenance And Runoff	3	
			Nitrates	3	Hydromodification	3	
			Nutrients	3	Land Disposal	3	
			Oil and grease	1	Lust/Leaking Undergrnd Stor. Tanks	1	
			Pesticides	1	Recreational Activities	3	
			Priority organics	1	Spills	1	
					Urban Runoff/Storm Sewers	3	
6	SUPERIOR VALLEY	6-49	Salinity/TDS/chlorides	170	Natural Sources	170	170
6	SURPRISE VALLEY	6-1	Coliform	151	Agriculture	151	350
			Flow alteration	151	Irrigated Crop Production	151	
			Metals	151	Natural Sources	151	
			Nitrates	151	Resource Extraction	151	
			Nutrients	151	Septage Disposal	151	
			Pathogens/Path.Indicators	151			
			Salinity/TDS/chlorides	151			
			Trace Elements	151			
6	TAHOE VALLEY-NORTH	6-5.02	Arsenic	1	Groundwater Withdrawal	4	4
			Flow alteration	4	Hydromodification	4	
			Metals	1	Land Disposal	4	
			Nutrients	4	Landfills	4	
			Priority organics	1	Lust/Leaking Undergrnd Stor. Tanks	4	
			Trace Elements	1	Natural Sources	4	
					Nonpoint Source	4	
					Septage Disposal	4	
					Spills	4	

\* Causes and Sources are not linked.

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
6	TAHOE VALLEY-SOUTH	6-5.01	Metals	3	Urban Runoff/Storm Sewers	4	21
			Nitrates	3	Wastewater - land disposal	4	
			Nutrients	3	Highway Maintenance And Runoff	3	
			Priority organics	3	Land Disposal	3	
			Radiation	3	Lust/Leaking Undergrnd Stor. Tanks	3	
			Salinity/TDS/chlorides	3	Natural Sources	3	
					Nonpoint Source	3	
					Recreational Activities	3	
					Source Unknown	3	
					Urban Runoff/Storm Sewers	3	
6	TROY VALLEY	6-39	Salinity/TDS/chlorides	130	Natural Sources	120	130
			Coliform	5	Highway Maintenance And Runoff	5	5
6	TWIN LAKE AREA	6-0000	Nitrates	5	Septage Disposal	5	5
			Nutrients	5	Urban Runoff/Storm Sewers	5	
			Oil and grease	2			
			Pathogens/Path.Indicators	5			
			Priority organics	2			
			Salinity/TDS/chlorides	270			
			Coliform	625			
6	UPPER KINGSTON VALLEY	6-22	Flow alteration	625	Natural Sources	270	270
			Nutrients	625	Hazardous Waste	75	
			Pathogens/Path.Indicators	625	Land Disposal	75	
			Priority organics	25	Lust/Leaking Undergrnd Stor. Tanks	75	
			Salinity/TDS/chlorides	625	Natural Sources	625	
			Coliform	625	Resource Extraction	625	
			Flow alteration	625	Septage Disposal	625	
			Nutrients	625	Spills	625	
			Pathogens/Path.Indicators	625	Nonpoint Source	20	
			Priority organics	2	Natural Sources	70	
6	WILLOW CREEK VALLEY	6-3	Nutrients	1			20
			Salinity/TDS/chlorides	70			
6	WINGATE VALLEY	6-19	Salinity/TDS/chlorides	70			70

\* Causes and Sources are not linked.

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
7	BORREGO VALLEY	722.13	Nonpriority organics	110	Lust/Leaking Undergrnd Stor. Tanks	110	110
7	COACHELLA VA. GW.	719.47	Cause Unknown	690	Land Disposal	690	690
			Nitrates	690	Landfills	690	
			Nonpriority organics	690	Lust/Leaking Undergrnd Stor. Tanks	690	
			Nutrients	690	Septage Disposal	690	
			Pathogens/Path.Indicators	690			
7	LUCERNE VALLEY	701.00	Nonpriority organics	260	Lust/Leaking Undergrnd Stor. Tanks	260	260
7	MORONGO VALLEY	719.43	Cause Unknown	1	Land Disposal	1	14
					Landfills	1	
7	NEEDLES VALLEY	713.30	Chromium	140	Hazardous Waste	140	140
			Metals	140	Land Disposal	140	
			Nonpriority organics	140	Lust/Leaking Undergrnd Stor. Tanks	140	
7	PALO VERDE VA.	715.40	Nonpriority organics	200	Lust/Leaking Undergrnd Stor. Tanks	200	200
7	TWENTYNINE PALMS VALLEY	709.10	Priority organics	180	Land Disposal	180	180
					Landfills	180	
7	WARD VALLEY	712	Radiation	770	Land Disposal	770	770
					Landfills	770	

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
8	BUNKER HILL I GW	801.520	PCE/Tetrachloroethylene	22	Industrial Point Sources	22	22
			Priority organics	22			
			TCE/Trichloroethylene	22			
8	BUNKER HILL II GW	801.520	DBCP/Dibromochloropropane	77	Agriculture	77	77
			Nitrates	77	Industrial Point Sources	77	
			Nutrients	77	Nonpoint Source	77	
			PCE/Tetrachloroethylene	77	Point Source(unspecified)	77	
			Pesticides	77			
			Priority organics	77			
			TCE/Trichloroethylene	77			
8	BUNKER HILL PRESSURE GW	801.520	DBCP/Dibromochloropropane	24	Agriculture	24	24
			Nitrates	24	Construction/Land Development	24	
			Nutrients	24	Industrial Point Sources	24	
			PCE/Tetrachloroethylene	24	Nonpoint Source	24	
			Pesticides	24	Point Source(unspecified)	24	
			Priority organics	24	Urban Runoff/Storm Sewers	24	
			Salinity/TDS/chlorides	24			
			TCE/Trichloroethylene	24			
			DBCP/Dibromochloropropane	90	Agriculture	90	90
			Nitrates	90	Construction/Land Development	90	
			Nutrients	90	Urban Runoff/Storm Sewers	90	
Pesticides	90						
8	CHINO II GW	801.210	DBCP/Dibromochloropropane	104	Agriculture	104	104
			Nitrates	104	Dairies	104	
			Nutrients	104	Industrial Point Sources	104	
			PCE/Tetrachloroethylene	104	Nonpoint Source	104	
			Pesticides	104			
			Priority organics	104			
			Salinity/TDS/chlorides	104			
8	CHINO III GW	801.210	Nitrates	48	Agriculture	48	48
			Nutrients	48	Dairies	48	
			Salinity/TDS/chlorides	48			

\* Causes and Sources are not linked.

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**				
8	SANTA ANA FOREBAY GW	801.110	Nitrates	105	Agriculture	105	105				
			Nutrients	105	Construction/Land Development	105					
			Organic enrichment/Low DO	105	Industrial Point Sources	105					
			PCE/Tetrachloroethylene	105	Municipal Point Sources	105					
			Priority organics	105							
			Salinity/TDS/chlorides	105							
			TCE/Trichloroethylene	105							
			TOC/Total Organic Carbon	105							
			8	SANTA ANA PRESSURE GW	801.110	Nitrates		139	Industrial Point Sources	139	139
						Nutrients		139	Municipal Point Sources	139	
Organic enrichment/Low DO	139	Urban Runoff/Storm Sewers				139					
PCE/Tetrachloroethylene	139										
Priority organics	139										
Salinity/TDS/chlorides	139										
TCE/Trichloroethylene	139										
TOC/Total Organic Carbon	139										

\* Causes and Sources are not linked.

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
9	BARRETT LAKE HA GW	911.30	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	97
9	CAMERON HA GW	911.70	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	45
9	CAMPO HA GW	911.80	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	107
9	DULZURA HA GW	910.30	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	100
9	EL MONTE	907.15	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	15
9	JAMUL VALLEY	909.21	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	5
9	LAS PULGAS VALLEY	901.52	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	3
9	LOWER SAN LUIS REY HA GW	903.10	Salinity/TDS/chlorides	40	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	40 40 40 40	186
9	LOWER SWEETWATER HA GW	909.10	Salinity/TDS/chlorides	49	Animal Operations	49	49

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
9	MIDDLE SWEETWATER HA GW	909.20	Salinity/TDS/chlorides	0	Irrigated Crop Production	49	
					Agriculture	0	85
					Agriculture-animal	0	
					Animal Operations	0	
					Irrigated Crop Production	0	
9	MISSION VALLEY	907.11	Salinity/TDS/chlorides	11	Agriculture	11	11
					Agriculture-animal	11	
					Animal Operations	11	
					Irrigated Crop Production	11	
9	MONSERATE HA GW	903.20	Salinity/TDS/chlorides	0	Agriculture	0	171
					Animal Operations	0	
9	MORENA HA GW	911.50	Salinity/TDS/chlorides	0	Agriculture	0	24
					Agriculture-animal	0	
					Irrigated Crop Production	0	
9	NATIONAL CITY HA GW	908.30	Salinity/TDS/chlorides	0	Agriculture	0	11
					Agriculture-animal	0	
					Animal Operations	0	
					Irrigated Crop Production	0	
9	OTAY VALLEY HA GW	910.20	Metals	1	Agriculture	1	47
			Organics	1	Agriculture-animal	1	
			Priority organics	1	Animal Operations	1	
			Salinity/TDS/chlorides	1	Irrigated Crop Production	1	
9	PINE VALLEY	911.30	Salinity/TDS/chlorides	0	Agriculture	0	2
					Agriculture-animal	0	
					Animal Operations	0	
					Irrigated Crop Production	0	
9	POTRERO HA GW	911.20	Salinity/TDS/chlorides	0	Agriculture	0	81
					Agriculture-animal	0	
					Animal Operations	0	
					Irrigated Crop Production	0	
9	POWAY HA GW	906.20	Salinity/TDS/chlorides	41	Agriculture	41	41
					Agriculture-animal	41	

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
9	RANCHO SANTA FE	905.11	Salinity/TDS/chlorides	0	Animal Operations Irrigated Crop Production	41 41	6
9	SAN DIEGUITO VALLEY	9-12	Salinity/TDS/chlorides	6	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	6 6 6 6	6
9	SAN MATEO CANYON HA GW	901.40	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	135
9	SAN ONOFRE HA GW	901.50	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	103
9	SAN PASQUAL HA GW	905.30	Salinity/TDS/chlorides	6	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	6 6 6 6	66
9	SANTA MARGARITA GW	902.11	Salinity/TDS/chlorides	13	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	13 13 13 13	13
9	SANTA MARIA VALLEY HA GW	905.40	Nitrates Salinity/TDS/chlorides	24 24	Animal Operations Irrigated Crop Production	24 24	57
9	SWEETWATER VALLEY	909.11	Salinity/TDS/chlorides	0	Agriculture Agriculture-animal Animal Operations Irrigated Crop Production	0 0 0 0	3

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
9	TECATE VALLEY	911.81	Salinity/TDS/chlorides	0	Agriculture	0	1
					Agriculture-animal	0	
					Animal Operations	0	
					Irrigated Crop Production	0	
9	TEMECULA VALLEY	9-5	Chlorides	150	Agriculture	150	150
			Diesel	150	Landfills	150	
			Herbicides	150	Lust/Leaking Undergrnd Stor. Tanks	150	
			Iron	150	Municipal Point Sources	150	
			Manganese	150	Septage Disposal	150	
			Metals	150	Source Unknown	150	
			Nitrates	150	Specialty Crop Production	150	
			Nutrients	150	Surface Mining	150	
			Oil and grease	150	Urban Runoff/Storm Sewers	150	
			Pesticides	150			
			Salinity/TDS/chlorides	150			
			Sulfates	150			
			Total Dissolved Solids	150			
9	TIJUANA VALLEY HA GW	911.10	Salinity/TDS/chlorides	30	Agriculture	30	30
					Agriculture-animal	30	
					Animal Operations	30	
					Irrigated Crop Production	30	

\* Causes and Sources are not linked.

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TABLE 12A. CAUSES AND SOURCES OF GROUND WATER IMPAIRMENT

REGION	WATER BODY NAME	HYDRO UNIT	CAUSES*	SIZE**	SOURCES*	SIZE**	TOTAL SIZE**
REGIONAL WATER QUALITY CONTROL BOARDS							
1	North Coast						
2	San Francisco Bay						
3	Central Coast						
4	Los Angeles						
5	Central Valley						
6	Lahontan						
7	Colorado River Basin						
8	Santa Ana						
9	San Diego						

ABBREVIATIONS

\* Causes and Sources are not linked.  
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**TABLE 12B.**

**TOTAL SIZES (Square Miles) OF GROUND WATERS  
IMPAIRED BY VARIOUS CAUSE CATEGORIES**

CAUSE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Cause/Stressor unknown		1,723
Toxicity (Unknown toxicant)		
Pesticides	7,500	3,489
Priority organic chemical	335	20,821
Nonpriority organic chemical	388	15,303
Metals	4,531	5,726
Ammonia		
Cyanide		
Sulfates		145
Chlorine		50
Other inorganics	535	
Nutrients	5,920	10,097
pH	1	
Siltation		
Organic enrichment/low DO		244
Salinity/TDS/chlorides	11,620	12,519
Thermal modifications		
Flow alterations	2,590	2,957
Other habitat alterations		
Pathogen indicators	627	866
Radiation		770
Oil and grease	3	4,119
Taste and odor		
Suspended solids		
Noxious aquatic plants (macrophytes)		
Total toxics		
Turbidity		
Exotic species		
Excessive algal growth		
Inappropriate littoral vegetation		

TABLE 12C.

**TOTAL SIZES (Square Miles) OF GROUND WATERS  
IMPAIRED BY VARIOUS SOURCE CATEGORIES**

SOURCE CATEGORY	SIZE OF WATERS BY CONTRIBUTION TO IMPAIRMENT	
	MAJOR	MODERATE/MINOR
Industrial Point Sources	715	14,503
Municipal Point Sources	388	264
Combined Sewer Overflows		
Agriculture	6,399	10,476
Crop-related sources	385	411
Grazing-related sources		
Intensive animal feeding operations	4,460	6,017
Silviculture		
Construction		709
Urban Runoff/Storm Sewers		842
Resource Extraction	1,030	7,136
Land Disposal	54	5,130
Hydromodification	2,701	718
Habitat Modification (non-hydromod)		
Marinas		
Erosion from Derelict Land		
Atmospheric Deposition		
Septage Disposal	6,522	8,914
Leaking Underground Storage Tanks	126	19,859
Highway Maintenance and Runoff		17
Spills (Accidental)	625	4,463
Contaminated Sediments		
Debris and Bottom Deposits		
Internal Nutrient Cycling (primarily lakes)		
Sediment Resuspension		
Natural Sources	6,937	11,522
Recreational Activities		3
Salt Storage Sites		
Ground water Loadings	20	685
Ground water Withdrawal	140	437
Other		277
Unknown Source	448	1,730
Sources Outside State Jurisdiction/Borders		490



## APPENDIX

### BENEFICIAL USE DESIGNATIONS

"Beneficial uses" are the many ways water can be used either directly by people or for their overall benefit. Drinking and bathing are obvious examples, but there are many others, such as uses by industry, agriculture, commerce, and wildlife. The SWRCB recognizes 23 beneficial uses summarized below:

**Municipal and Domestic Supply (MUN)**—Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

**Agricultural Supply (AGR)**—Uses of water for farming, horticulture, or ranching including, but not limited to irrigation, stock watering, or support of vegetation for range grazing.

**Industrial Process Supply (PRO)**—Uses of water for industrial activities that depend primarily on water quality.

**Industrial Service Supply (IND)**—Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

**Ground Water Recharge (GWR)**—Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

**Freshwater Replenishment (FRSH)**—Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).

**Navigation (NAV)**—Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

**Hydropower Generation (POW)**—Uses of water for hydropower generation.

Water Contact Recreation (REC-1)–Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Noncontact Water Recreation (REC-2)–Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Ocean Commercial and Sport Fishing (COMM)–Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA)–Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Warm Freshwater Habitat (WARM)–Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD)–Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.

Inland Saline Water Habitat (SAL)–Uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.

Estuarine Habitat (EST)–Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).



Marine Habitat (MAR)–Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

Wildlife Habitat (WILD)–Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Preservation of Biological Habitats of Special Significance (BIOL)–Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

Rare, Threatened, or Endangered Species (RARE)–Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or federal law as rare, threatened or endangered.

Migration of Aquatic Organisms (MIGR)–Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN)–Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL)–Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

