Final California 2010 Integrated Report(303(d) List/305(b) Report)

Supporting Information

Regional Board 5 - Central Valley Region

Water Body Name: American River, Lower (Nimbus Dam to confluence with Sacramento River)
Water Body ID: CAR5192100019980813142021
Water Body Type: River & Stream

DECISION ID 6501 Region 5

American River, Lower (Nimbus Dam to confluence with Sacramento River)

Pollutant:	**Unknown Toxicity**
Final Listing Decision:	**Do Not Delist from 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	List on 303(d) list (TMDL required list)(2006)
Revision Status	Revised
Sources:	Source Unknown
Expected TMDL Completion Date:	2021
Impairment from Pollutant or Pollution:	Pollutant

Conclusion:

This pollutant is being considered for removal from the section 303(d) list under section 4.1 of the Listing Policy. Under this section a single line of evidence is necessary to assess listing status. Five lines of evidence are available in the administrative record to assess pollutant. Twelve samples tested with Ceriodaphnia dubia and seven samples tested with Pimephales promelas exceeded the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Twelve of 65 water samples tested with Ceriodaphnia dubia (an invertebrate species) exhibited a statistically significant reduction in survival (one of 65) or reproduction (11 of 65) and exceeded the narrative toxicity objective, and this exceeds the allowable frequency listed in Table 4.1 of the Listing Policy.
4. Seven of 34 water samples tested with Pimephales promelas (Fathead Minnow, a vertebrate species) exhibited a statistically significant reduction in survival (three of 34) and/or growth (five of 34) and exceeded the narrative toxicity objective, and this exceeds the allowable frequency listed in Table 4.1 of the Listing Policy. As both survival and growth toxicity, to fathead minnow, were reported for the sample collected on 18 August 1998, this was treated as a single toxic event for the purposes of determining the number of exceedances of the narrative toxicity objective.
5. Zero of 23 samples tested with Selenastrum capricornutum (an algal species) exhibited a statistically significant reduction in growth compared to control and, therefore, none of the samples exceeded the narrative toxicity objective, and this does not exceed the allowable frequency listed in Table 4.1 of the Listing Policy.
6. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

RWQCB Board Staff Decision:

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be removed from the section 303(d) list because applicable water quality standards for the pollutant are being exceeded.

SWRCB Board Staff Decision:	After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.
USEPA Action (if applicable):	USEPA approved the listing of this water body as a water quality limited segment requiring a TMDL for this pollutant.

Line of Evidence (LOE) for Decision ID 6501, Unknown Toxicity **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	25812
Pollutant:	Vertebrate Toxicity
LOE Subgroup:	Toxicity
Matrix:	Water
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	34
Number of Exceedances:	3
Data and Information Type:	TOXICITY TESTING
Data Used to Assess Water Quality:	Seven-day survival toxicity tests were conducted with Pimephales promelas. Three of the 34 samples exhibited a significant increase in mortality compared to the laboratory control and violated the narrative toxicity objective. The following is a summary of the survival endpoint acute toxicity test results, by year. 1998-1999: One of the 12 samples exhibited a significant increase in mortality compared to the laboratory controls. The toxic sample was collected on 18 August 1998 (7.5% mortality). 2003-2004: None of the four samples exhibited a significant increase in mortality compared to the laboratory controls. The results reported for the 22 January 2004 and 5 February 2004 are those from tests modified to control pathogen-related mortality. The initial test of the sample collected on 10 June 2004 was not toxic; however, the controls did not meet test acceptability requirements (SRWP 2005). The results provided in the report (SRWP 2005) are those of the initial test. 2006-2007: Two of the 18 samples exhibited a significant increase in mortality compared to the laboratory controls. The toxic samples were collected on the following dates (survival reported as a percentage of control response is provided in parentheses): 14 March 2007 (75) and 25 April 2007 (75).
Data Reference:	Final Proposition 50 Grant Monitoring Report, 2005 - 2007. Includes Quality Assurance Project Plan (QAPP) Revision 1.2.0, Appendix A, March 2006 Sacramento River Watershed Program Annual Reports for 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2003-2004; and BDAT data 1998-2003
Water Quality Objective/Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances (CVRWQCB, 2007).
Objective/Criterion Reference:	Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins. 4th ed
Evaluation Guideline:	Statistically significant difference from control with 7-day survival toxicity tests. Significant toxicity is defined as a statistically significant ($p<0.5$) increase in mortality (>=20%) compared to the laboratory control.
Guideline Reference:	

	Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. U.S. Environmental Protection Agency Office of Water, Washington, DC EPA-821-R-02-012
Spatial Representation:	Samples were collected from the lower American River, at Discovery Park.
Temporal Representation:	1998-1999 Monitoring ? Samples collected monthly from June 1998 through May 1999. 2003-2004 Monitoring ? Sampling was scheduled to correspond to the following events/dates: mid-wet season (22 January 2004); post-organophosphate pesticide dormant spray application (5 February 2004); rice field discharge season, dry weather event (10 June 2004); and dry season, low flows (29 July 2004). 2006-2007 Monitoring ? Sampling was generally conducted on a monthly basis from April 2006 through August 2007.
Environmental Conditions:	
QAPP Information:	Data Quality: Good. Monitoring was conducted in accordance with the Quality Assurance Project Plan for Monitoring prepared for the Sacramento River Watershed Program (SRWP 1999a, 1999b, 2003, 2006). The controls for tests conducted on the sample collected on 10 June 2004 did not meet test acceptability requirements (SRWP 2005). The results reported in the report (SRWP 2005) are those of the initial test.
QAPP Information Reference(s):	Final Proposition 50 Grant Monitoring Report, 2005 - 2007. Includes Quality Assurance Project Plan (QAPP) Revision 1.2.0, Appendix A, March 2006 Quality Assurance Project Plans prepared for Sacramento River Watershed Program

Line of Evidence (LOE) for Decision ID 6501, Unknown Toxicity **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	25912
Pollutant:	Vertebrate Toxicity
LOE Subgroup:	Toxicity
Matrix:	Water
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	34
Number of Exceedances:	5
Data and Information Type:	TOXICITY TESTING
Data Used to Assess Water Quality:	Seven-day growth toxicity tests were conducted with Pimephales promelas. Five of the 34 samples exhibited a significant reduction in growth compared to the laboratory control and violated the narrative toxicity objective. Growth endpoints for P. promelas were not statistically compared to control results if survival endpoints were significantly less than the controls, except during the 1998-1999 monitoring period. The following is a summary of the growth endpoint toxicity test results, by year. 1998-1999: Two of the 12 samples exhibited a significant reduction in growth compared to the laboratory controls. The toxic samples were collected on 18 August 1998 (60% of controls) and 17 February 1999 (65% of controls). 2003-2004: None of the four samples exhibited a significant reduction in growth compared to the laboratory controls. The results reported for the 22 January 2004 and 5 February 2004 are those from tests modified to control pathogen-related mortality. The initial test of the sample collected on 10 June 2004 was not toxic; however, the controls did not meet test acceptability requirements (SRWP 2005). The results provided in the report (SRWP 2005) are those of the initial test. 2006-2007: Three of the 18 samples exhibited a significant reduction in growth compared to the laboratory controls. The toxic samples were collected on the following dates: 30 May 2006 (86% of control); 25 October 2006 (68% of control) and 27 June 2007 (84% of control).
Data Reference:	

	Final Proposition 50 Grant Monitoring Report, 2005 - 2007. Includes Quality Assurance Project Plan (QAPP) Revision 1.2.0, Appendix A, March 2006 Sacramento River Watershed Program Annual Reports for 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2003-2004; and BDAT data 1998-2003
Water Quality Objective/Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances (CVRWQCB, 2007).
Objective/Criterion Reference:	Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins. 4th ed
Evaluation Guideline:	Statistically significant difference from control with 7-day growth toxicity tests. Significant toxicity is defined as a statistically significant ($p<0.5$) reduction in growth compared to the laboratory control.
Guideline Reference:	Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. U.S. Environmental Protection Agency Office of Water, Washington, DC EPA-821-R-02-012
Spatial Representation:	Samples were collected from the lower American River, at Discovery Park.
Temporal Representation:	1998-1999 Monitoring ? Samples collected monthly from June 1998 through May 1999. 2003-2004 Monitoring ? Sampling was scheduled to correspond to the following events/dates: mid-wet season (22 January 2004); post-organophosphate pesticide dormant spray application (5 February 2004); rice field discharge season, dry weather event (10 June 2004); and dry season, low flows (29 July 2004). 2006-2007 Monitoring ? Sampling was generally conducted on a monthly basis from April 2006 through August 2007.
Environmental Conditions:	
QAPP Information:	Data Quality: Good. Monitoring was conducted in accordance with the Quality Assurance Project Plan for Monitoring prepared for the Sacramento River Watershed Program (SRWP 1999a, 1999b, 2003, 2006). The controls for tests conducted on the sample collected on 10 June 2004 did not meet test acceptability requirements (SRWP 2005). The results reported in the report (SRWP 2005) and this line of evidence are those of the initial test.
QAPP Information Reference(s):	Final Proposition 50 Grant Monitoring Report, 2005 - 2007. Includes Quality Assurance Project Plan (QAPP) Revision 1.2.0, Appendix A, March 2006 Quality Assurance Project Plans prepared for Sacramento River Watershed Program

Line of Evidence (LOE) for Decision ID 6501, Unknown Toxicity **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	21571
Pollutant:	Plant Toxicity
LOE Subgroup:	Toxicity
Matrix:	Water
Fraction:	Total
Beneficial Use:	Warm Freshwater Habitat
Number of Samples:	23
Number of Exceedances:	0
Data and Information Type:	TOXICITY TESTING
Data Used to Assess Water Quality:	Four-day growth tests were conducted with Selenastrum capricornutum in association with Sacramento River Watershed Program annual monitoring activities. Zero of the 23 samples exhibited a significant decrease in growth as compared to the laboratory control (none violated the narrative toxicity

objective). The following is a summary of monitoring results by year. In 1999 to 2000, one sample, collected on 21 September 1999, did not exhibit a significant decrease in growth (cell numbers) as compared to the laboratory control. In 2003 to 2004, none of 4 samples exhibited a significant decrease in growth (cell numbers) as compared to the laboratory control. In 2006 to 2007, none of 18 samples exhibited a significant decrease in growth as compared to the laboratory control. The results reported for the sample collected on 25 July 2006 were those of a re-test (SRWP 2008).

Data Reference: Final Proposition 50 Grant Monitoring Report, 2005 - 2007. Includes Quality Assurance Project Plan (QAPP) Revision 1.2.0, Appendix A, March 2006 Sacramento River Watershed Program Annual Reports for 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2003-2004; and BDAT data 1998-2003

Water Quality Objective/Criterion: All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances (CVRWQCB, 2007).

Objective/Criterion Reference: Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins. 4th ed

Evaluation Guideline: Statistically significant difference from control with a short-term chronic (4-day) growth test.

Guideline Reference: Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. Office of Water, U.S. Environmental Protection Agency. Washington, D.C. EPA-821-R-02-013

Spatial Representation: Samples were collected from the American River at Discovery Park.

Temporal Representation: In 1999 to 2000, a single sample was collected on 21 September 1999. In 2003 to 2004, sampling was scheduled to correspond to the following events/dates: mid-wet season (22 January 2004); post-organophosphate pesticide dormant spray application (5 February 2004); rice field discharge season, dry weather event (10 June 2004); and dry season, low flows (29 July 2004). In 2006 to 2007, sampling was generally conducted on a monthly basis from April 2006 through August 2007.

Environmental Conditions:

QAPP Information: Data quality: Good. Monitoring was conducted in accordance with the Quality Assurance Project Plan for Monitoring prepared for the Sacramento River Watershed Program (SRWP 1999a, 1999b, 2000b, 2001b, 2002b, 2003b, 2006).

QAPP Information Reference(s):

Line of Evidence (LOE) for Decision ID 6501, Unknown Toxicity **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID: 21573

Pollutant: Invertebrate Toxicity
LOE Subgroup: Toxicity
Matrix: Water
Fraction: Total

Beneficial Use: Warm Freshwater Habitat

Number of Samples: 65
Number of Exceedances: 11

Data and Information Type: TOXICITY TESTING

Data Used to Assess Water Quality: Seven-day reproduction toxicity tests were conducted with Ceriodaphnia dubia. Eleven of the 65 samples exhibited significant reduction in reproduction

	compared to the laboratory control and violated the narrative toxicity objective. The following is a summary of (Reproduction Endpoint) toxicity test results, by year. In 1998 to 1999, one of 12 samples exhibited significant reduction in reproduction compared to the laboratory control. The toxic sample was collected on 21 July 1998 (49% of control). In1999 to 2000, one of 12 samples exhibited significant reduction in reproduction compared to the laboratory control. The toxic sample was collected 16 February 2000 (75% of control). In 2000 to 2001, two of 9 samples exhibited significant reduction in reproduction compared to the laboratory control. Toxic samples were collected on the following dates: 19 September 2000 and 31 October 2000. The data summary does not provide the corresponding data for the control associated with each test but, rather, provides the range of data for separate controls associated with multiple tests. Therefore, percent of control was not calculated. In 2001 to 2002, two of 5 samples exhibited significant reduction in reproduction compared to the laboratory control. The toxic samples were collected on 26 September 2001 and 16 May 2002. Percent of control was not included for same reason as for the 2000-2001 monitoring summary. In 2002 to 2003, zero of 5 samples exhibited significant reduction in reproduction compared to the laboratory control. In 2003 to 2004, four of 4 samples exhibited significant reduction in reproduction compared to the laboratory control. The toxic samples were collected on the following dates: 22 January 2004, 5 February 2004, 10 June 2004, and 29 July 2004. Percent of control was not included for same reason as for the 2000 to 2001 monitoring summary. In 2006 to 2007, one of 18 samples exhibited significant reduction in reproduction compared to the laboratory control. The toxic sample was collected on 9 February 2007 and had 85% response relative to the control.
Data Reference:	Final Proposition 50 Grant Monitoring Report, 2005 - 2007. Includes Quality Assurance Project Plan (QAPP) Revision 1.2.0, Appendix A, March 2006 Sacramento River Watershed Program Annual Reports for 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2003-2004; and BDAT data 1998-2003
Water Quality Objective/Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances (CVRWQCB, 2007).
Objective/Criterion Reference:	Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins, 4th ed
Evaluation Guideline:	Statistically significant difference from control with 7-day reproduction toxicity tests. Significant toxicity is defined as decreased reproduction that is statistically different from controls at the 95% confidence level.
Guideline Reference:	Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/600/4-91/002. Third Edition. July 1994 Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. Office of Water, U.S. Environmental Protection Agency. Washington, D.C. EPA-821-R-02-013
Spatial Representation:	Samples were collected from the American River at Discovery Park.
Temporal Representation:	In 1998 to 1999, samples were collected monthly from June 1998 through May 1999. In 1999 to 2000, samples were collected monthly from June 1999 through May 2000 (12 sampling events). In 2000 to 2001, samples were collected on 19 July 2000, 19 September 2000, 17 October 2000, 31 October 2000, 27 January 2001, 8 February 2001, 9 April 2001, 30 May 2001, and 21 June 2001. In 2001 to 2002, sampling was scheduled to correspond to the following events/dates: late dry season, low flows (26 September 2001); seasonal (first flush) storm (5 November 2001); significant rainfall of >0.5 inches, organophosphate pesticide application period (23 February 2002); significant rainfall of >0.5 inches within 24 hours (8 March 2002); and rice field

discharge period, late wet season (16 May 2002). In 2002-2003, sampling was scheduled to correspond to the following events/dates: late dry season, low flows (3 October 2002); first significant storm event of season (11 November 2002); late wet season, rain events (17 March 2003 and 14 April 2003); and rice field discharge season, dry weather event (10 June 2003). In 2003 to 2004, sampling was scheduled to correspond to the following events/dates: mid-wet season (22 January 2004); post-organophosphate pesticide dormant spray application (5 February 2004); rice field discharge season, dry weather event (10 June 2004); and dry season, low flows (29 July 2004). In 2006 to 2007, sampling was generally conducted monthly from April 2006 through August 2007.

Environmental Conditions:

QAPP Information: Data quality: Good. Monitoring was conducted in accordance with the Quality Assurance Project Plan for Monitoring prepared for the Sacramento River Watershed Program (SRWP 1999a, 1999b, 2000b, 2001b, 2002b, 2003b, 2006).

QAPP Information Reference(s):

Line of Evidence (LOE) for Decision ID 6501, Unknown Toxicity **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID: 21572

Pollutant: Invertebrate Toxicity
LOE Subgroup: Toxicity
Matrix: Water
Fraction: Total

Beneficial Use: Warm Freshwater Habitat

Number of Samples: 65
Number of Exceedances: 1

Data and Information Type: TOXICITY TESTING
Data Used to Assess Water Quality: Seven-day survival toxicity tests were conducted with Ceriodaphnia dubia. One of the 65 samples exhibited a significant increase in mortality compared to the laboratory control and violated the narrative toxicity objective. The following is a summary of (Survival Endpoint) toxicity test results, by year. 1998-1999-Zero of 12 samples exhibited a significant increase in mortality compared to the laboratory control. 1999-2000-Zero of 12 samples exhibited a significant increase in mortality compared to the laboratory control. 2000-2001 -Zero of 9 samples exhibited a significant increase in mortality compared to the laboratory control. 2001-2002-Zero of 5 samples exhibited a significant increase in mortality compared to the laboratory control. 2002-2003-Zero of 5 samples exhibited a significant increase in mortality compared to the laboratory control. 2003-2004-Zero of 4 samples exhibited a significant increase in mortality compared to the laboratory control. 2006-2007-One of 18 samples exhibited a significant increase in mortality compared to the laboratory control. The toxic sample was collected on 12 December 2006 (0% of control response). It should be noted that, of the 12 water samples collected from across the watershed during this sampling event (December 2006), 11 caused complete mortality of the test organisms in the initial test. Phase I Toxicity Identification Evaluations (TIEs) were conducted using the 12 December 2006 sample. Although persistent during the TIEs, the toxicity was delayed and its magnitude was decreased. Toxicity was removed by the following TIE treatments: C-8 Solid Phase Extraction and piperonyl butoxide (PBO). This suggests that dissolved non-polar organic contaminants and metabolically-activated substances, or a substance with both properties, caused the toxicity (SRWP 2008).

Data Reference: Final Proposition 50 Grant Monitoring Report, 2005 - 2007. Includes Quality Assurance Project Plan (QAPP) Revision 1.2.0, Appendix A, March 2006

	Sacramento River Watershed Program Annual Reports for 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2003-2004; and BDAT data 1998-2003
Water Quality Objective/Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances (CVRWQCB, 2007).
Objective/Criterion Reference:	Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins, 4th ed
Evaluation Guideline:	Statistically significant difference from control with 7-day survival toxicity tests. Significant toxicity is defined as mortality (=20%) that is statistically different from controls at the 95% confidence level.
Guideline Reference:	Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. U.S. Environmental Protection Agency Office of Water, Washington, DC EPA-821-R-02-012
Spatial Representation:	Samples were collected from the American River at Discovery Park.
Temporal Representation:	In 1998 to1999, samples were collected monthly from June 1998 through May 1999. In 1999 to 2000, samples were collected monthly from June 1999 through May 2000 (12 sampling events). In 2000 to 2001, samples were collected on 19 July 2000, 19 September 2000, 17 October 2000, 31 October 2000, 27 January 2001, 8 February 2001, 9 April 2001, 30 May 2001, and 21 June 2001. In 2001 to 2002, sampling was scheduled to correspond to the following events/dates: late dry season, low flows (26 September 2001); seasonal (first flush) storm (5 November 2001); significant rainfall of >0.5 inches, organophosphate pesticide application period (23 February 2002); significant rainfall of >0.5 inches within 24 hours (8 March 2002); and rice field discharge period, late wet season (16 May 2002). In 2002 to 2003, sampling was scheduled to correspond to the following events/dates: late dry season, low flows (3 October 2002); first significant storm event of season (11 November 2002); late wet season, rain events (17 March 2003 and 14 April 2003); and rice field discharge season, dry weather event (10 June 2003). In 2003 to 2004, sampling was scheduled to correspond to the following events/dates: mid-wet season (22 January 2004); post-organophosphate pesticide dormant spray application (5 February 2004); rice field discharge season, dry weather event (10 June 2004); and dry season, low flows (29 July 2004). In 2006 to 2007, sampling was generally conducted on a monthly basis from April 2006 through August 2007.
Environmental Conditions:	
QAPP Information:	Data quality: Good. Monitoring was conducted in accordance with the Quality Assurance Project Plan for Monitoring prepared for the Sacramento River Watershed Program (SRWP 1999a, 1999b, 2000b, 2001b, 2002b, 2003b, 2006).
QAPP Information Reference(s):	

DECISION ID **13560** **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

Pollutant:	**Chlordane**
Final Listing Decision:	**Do Not List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Impairment from Pollutant or Pollution:	Pollutant

Conclusion:

This pollutant is being considered for placement on the section 303(d) list under sections 3.1 and 3.5 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. One of the samples exceed the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. One of four composite fish tissue samples exceeded the narrative toxicity objective, and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

RWQCB Board Staff Decision: After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards are not being exceeded.

SWRCB Board Staff Decision: After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

USEPA Action (if applicable):

Line of Evidence (LOE) for Decision ID 13560, Chlordane **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	25889
Pollutant:	Chlordane
LOE Subgroup:	Pollutant-Tissue
Matrix:	Tissue
Fraction:	Fish whole body
Beneficial Use:	Commercial or recreational collection of fish, shellfish, or organisms
Number of Samples:	4
Number of Exceedances:	1
Data and Information Type:	Fish tissue analysis
Data Used to Assess Water Quality:	Four composite fish tissue samples were each analyzed for nine forms of chlordane, including: cis-Chlordane, trans-Chlordane, alpha-Chlordene, gamma-Chlordene, Heptachlor, Heptachlor epoxide, cis-Nonachlor, trans-Nonachlor and Oxychlordane. The four composite fish tissue samples were Sacramento Sucker (captured from the American River at Discovery Park on 18 October 2005), White Catfish (captured from the American River at Discovery Park on 26 July 2005, Rainbow Trout (captured from the American River at the American River Hatchery on 21 September 2005, and Sacramento Sucker (captured from the American River at Nimbus Dam on 27 September, 2005. Only the composite fish tissue sample of Sacramento Sucker captured from the American River at Discovery Park exceeded the OEHHA screening value of 5.6 ug/kg for chlordane in fish tissue, and had a total chlordane concentration of 18.84 ug/kg.
Data Reference:	

	Sacramento River Watershed Program Annual Reports for 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2003-2004; and BDAT data 1998-2003
Water Quality Objective/Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Objective/Criterion Reference:	Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins. 4th ed
Evaluation Guideline:	OEHHA 2008 Fish Contaminant Goals (FCG) are based on cancer risk assessments using an 8-Ounce/Week (prior to cooking) consumption rate of 32 g/day. The FCG used as a screening value for total chlordane (with a cancer slope factor of 1.3 mg/kg/day) should be less than 5.6 ug/kg.
Guideline Reference:	Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene
Spatial Representation:	Samples were collected from the lower American River at: Discovery Park (Sacramento Sucker and White Catfish); at the American River Hatchery (Rainbow Trout); and at Nimbus Dam (Sacramento Sucker).
Temporal Representation:	Sacramento Sucker were captured from the American River at Discovery Park on 18 October 2005; White Catfish were captured from the American River at Discovery Park on 26 July 2005; Rainbow Trout were captured from the American River Hatchery on 21 September 2005; and Sacramento Sucker were captured from the American RIver at Nimbus Dam on 27 September, 2005.
Environmental Conditions:	
QAPP Information:	Data Quality: Good. Monitoring was conducted in accordance with Sacramento River Watershed Program QAPP requirements.
QAPP Information Reference(s):	Quality Assurance Project Plans prepared for Sacramento River Watershed Program

DECISION ID **13564** **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

Pollutant:	**DDT (Dichlorodiphenyltrichloroethane)**
Final Listing Decision:	**Do Not List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Impairment from Pollutant or Pollution:	Pollutant

Conclusion:

This pollutant is being considered for placement on the section 303(d) list under sections 3.1 and 3.5 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. One of the samples exceed the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. One of 4 composite fish tissue samples exceeded the narrative toxicity objective, and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.

4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

RWQCB Board Staff Decision: After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards are not being exceeded.

SWRCB Board Staff Decision: After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

USEPA Action (if applicable):

Line of Evidence (LOE) for Decision ID 13564, DDT (Dichlorodiphenyltrichloroethane) **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	25903
Pollutant:	DDT (Dichlorodiphenyltrichloroethane)
LOE Subgroup:	Pollutant-Tissue
Matrix:	Tissue
Fraction:	Fish whole body
Beneficial Use:	Commercial or recreational collection of fish, shellfish, or organisms
Number of Samples:	4
Number of Exceedances:	1
Data and Information Type:	Fish tissue analysis
Data Used to Assess Water Quality:	Four composite fish tissue samples were each analyzed for seven forms of DDT, including: DDT (o,p?), DDT (p,p?), DDD (o,p?), DDD (p,p?), DDE (o,p?), DDE (p,p?), DDMU (p,p?). The four composite fish tissue samples were Sacramento Sucker (captured from the American River at Discovery Park on 18 October 2005), White Catfish (captured from the American River at Discovery Park on 26 July 2005, Rainbow Trout (captured from the American River at the American River Hatchery on 21 September 2005, and Sacramento Sucker (captured from the American River at Nimbus Dam on 27 September, 2005. Only the composite fish tissue sample of Rainbow Trout captured from the American River at American River Hatchery exceeded the OEHHA screening value of 21 ug/kg for DDT in fish tissue, and had a total DDT concentration of 29 ug/kg.
Data Reference:	Sacramento River Watershed Program Annual Reports for 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2003-2004; and BDAT data 1998-2003
Water Quality Objective/Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Objective/Criterion Reference:	Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins, 4th ed
Evaluation Guideline:	OEHHA 2008 Fish Contaminant Goals (FCG) are based on cancer risk assessments using an 8-Ounce/Week (prior to cooking) consumption rate of 32 g/day. The FCG used as a screening value for total DDT (with a cancer slope factor of 0.34 mg/kg/day) should be less than 21 ug/kg.
Guideline Reference:	Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene

Spatial Representation:	Samples were collected from the lower American River at: Discovery Park (Sacramento Sucker and White Catfish); at the American River Hatchery (Rainbow Trout); and at Nimbus Dam (Sacramento Sucker).
Temporal Representation:	Sacramento Sucker were captured from the American River at Discovery Park on 18 October 2005; White Catfish were captured from the American River at Discovery Park on 26 July 2005; Rainbow Trout were captured from the American River Hatchery on 21 September 2005; and Sacramento Sucker were captured from the American RIver at Nimbus Dam on 27 September, 2005.
Environmental Conditions:	
QAPP Information:	Data Quality: Good. Monitoring was conducted in accordance with Sacramento River Watershed Program QAPP requirements.
QAPP Information Reference(s):	Quality Assurance Project Plans prepared for Sacramento River Watershed Program

DECISION ID **13562** **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

Pollutant:	**Dieldrin**
Final Listing Decision:	**Do Not List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Impairment from Pollutant or Pollution:	Pollutant

Conclusion:

This pollutant is being considered for placement on the section 303(d) list under sections 3.1 and 3.5 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. One represenative sample exceeded the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Two of 5 composite fish tissue samples exceed the Evaluation Guideline for Dieldrin (OEHHA Fish Contaminant Goal of 0.46 ug/kg), which exceeds the narrative toxicity objective and,One of the two composite fish samples which exceeded criteria was from an anadromous fish, therefore that sample is likely not representative sample for dieldrin in the American River. Therefore, only one of four representative samples exceeds the Evaluation guideline and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

RWQCB Board Staff Decision:

After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because it cannot be determined if applicable water quality standards are not being exceeded.

SWRCB Board Staff Decision:

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

USEPA Action (if applicable):

Line of Evidence (LOE) for Decision ID 13562, Dieldrin **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	25904
Pollutant:	Dieldrin
LOE Subgroup:	Pollutant-Tissue
Matrix:	Tissue
Fraction:	Fish whole body
Beneficial Use:	Commercial or recreational collection of fish, shellfish, or organisms
Number of Samples:	4
Number of Exceedances:	1
Data and Information Type:	Fish tissue analysis
Data Used to Assess Water Quality:	Five composite fish tissue samples were each analyzed for Dieldrin. The five composite fish tissue samples were Sacramento Sucker (captured from the American River at Discovery Park on 18 October 2005), White Catfish (captured from the American River at Discovery Park on 26 July 2005, Rainbow Trout (captured from the American River at the American River Hatchery on 21 September 2005, Sacramento Sucker (captured from the American River at Nimbus Dam on 27 September, 2005; and Chinook (captured from the American River at Nimbus Fish Hatchery on 01 November 2005). Two composite fish tissue samples exceeded the OEHHA screening value of 0.46 ug/kg for Dieldrin in fish tissue: Sacramento Sucker captured from the American River at Discovery Park (1.62 ug/kg) and Chinook captured from the American River at Nimbus Fish Hatchery 0.539 ug/kg).
Data Reference:	Sacramento River Watershed Program Annual Reports for 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2003-2004; and BDAT data 1998-2003
Water Quality Objective/Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Objective/Criterion Reference:	Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins. 4th ed
Evaluation Guideline:	OEHHA 2008 Fish Contaminant Goals (FCG) are based on cancer risk assessments using an 8-Ounce/Week (prior to cooking) consumption rate of 32 g/day. The FCG used as a screening value for Dieldrin (with a cancer slope factor of 16 mg/kg/day) should be less than 0.46 ug/kg.
Guideline Reference:	Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene
Spatial Representation:	Samples were collected from the lower American River at: Discovery Park (Sacramento Sucker and White Catfish); at the American River Hatchery (Rainbow Trout); at Nimbus Dam (Sacramento Sucker); and at Nimbus Fish Hatchery (Chinook). The chinook salmon, being an anadromous fish, is not representative of dieldrin in the American river.
Temporal Representation:	Sacramento Sucker were captured from the American River at Discovery Park on 18 October 2005; White Catfish were captured from the American River at Discovery Park on 26 July 2005; Rainbow Trout were captured from the American River Hatchery on 21 September 2005; Sacramento Sucker were captured from the American RIver at Nimbus Dam on 27 September, 2005; and Chinook were captured from the Amercian River at Nimbus Fish Hatchery on 01 November 2005.

Environmental Conditions:
QAPP Information: Data Quality: Good. Monitoring was conducted in accordance with Sacramento River Watershed Program QAPP requirements.
QAPP Information Reference(s): Quality Assurance Project Plans prepared for Sacramento River Watershed Program

DECISION ID **13038** **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

Pollutant:	**PCBs (Polychlorinated biphenyls)**
Final Listing Decision:	**List on 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	New Decision
Revision Status	Revised
Sources:	Source Unknown
Expected TMDL Completion Date:	2021
Impairment from Pollutant or Pollution:	Pollutant

Conclusion:

This pollutant is being considered for placement on the section 303(d) list under section 3.5 (Bioaccumulation of Pollutants in Aquatic Life Tissue) of the Listing Policy. Under section 3.5 a single line of evidence is necessary to assess listing status.

One lines of evidence is available in the administrative record to assess this pollutant. Two of the samples exceed the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Two of three samples exceed the OEHHA fish contaminant goal for human health (3.6 ng/g) and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

RWQCB Board Staff Decision: After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

SWRCB Board Staff Decision: After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

USEPA Action (if applicable): USEPA approved the listing of this water body as a water quality limited segment requiring a TMDL for this pollutant.

Line of Evidence (LOE) for Decision ID 13038, PCBs (Polychlorinated biphenyls) **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID: 25699

Pollutant: PCBs (Polychlorinated biphenyls)
LOE Subgroup: Pollutant-Tissue

Matrix:	Tissue
Fraction:	Fish fillet
Beneficial Use:	Commercial or recreational collection of fish, shellfish, or organisms
Number of Samples:	3
Number of Exceedances:	2
Data and Information Type:	Fish tissue analysis
Data Used to Assess Water Quality:	Samples were analyzed for the presence of 48 individual PCB congeners and Aroclors 1248, 1254 and 1260. For the purpose of this assessment, data considered were the sum of PCB congeners (?total PCBs?), reported as ng/g, wet weight. The OEHHA and SWAMP recommend use of total PCBs for evaluating contamination. The values for each of the PCB congeners were surrogate corrected. For the purpose of determining the sum of PCB congeners, results for individual congeners that were below the reporting limit (0.199 ng/g) were treated as non-detects. Total PCBs in 2 of 3 composite samples exceeded 3.6 ng/g. The two composite samples that exceeded the OEHHA fish contaminant goal for human health were the white catfish sample (3.934 ng/g) collected at American River at Discovery Park on 26 July 2005 and the Sacramento sucker sample (44.094 ng/g) collected at American River at Discovery Park on 18 October 2005. The composite sample that did not exceed the OEHHA fish contaminant goal for human health was a Sacramento sucker sample (2.438 ng/g) collected at American River at Nimbus Dam. Composite samples consisted of equal-weight tissue samples from up to five fish of similar size and combined into a single 200 g composite sample (SRWP 2006). Data Source - Sacramento River Watershed Program. Final Proposition 50 Grant Monitoring Report, 2005-2007 (SRWP 2008) and electronic files containing raw data supplied by Larry Walker and Associates.
Data Reference:	Final Proposition 50 Grant Monitoring Report, 2005 - 2007. Includes Quality Assurance Project Plan (QAPP) Revision 1.2.0, Appendix A, March 2006
Water Quality Objective/Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. The objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.
Objective/Criterion Reference:	Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Sacramento and San Joaquin River Basins, 4th ed
Evaluation Guideline:	The California Office of Environmental Health Hazard Assessment (OEHHA) Fish Contaminant Goal for total PCBs in fish is 3.6 ng/g (3.6 ppb), wet weight, to protect human health. This concentration in fish tissue should not be exceeded, based on a total fish and shellfish consumption rate of 8 ounces per week (prior to cooking) (32 g/day) (OEHHA 2008). This goal incorporates a maximum cancer risk level of one in a million (no more than one additional cancer in a population of one million people consuming these fish).
Guideline Reference:	Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene
Spatial Representation:	Fish samples were collected at American River at Discovery Park (white catfish and Sacramento sucker), and American River at Nimbus Dam (Sacramento sucker).
Temporal Representation:	

	Fish samples were collected at American River at Discovery Park on 26 July 2005 and 18 October 2005; and American River at Nimbus Dam on 27 September 2005.
Environmental Conditions:	
QAPP Information:	Sampling and analyses were conducted in accordance with the Quality Assurance Project Plan, Sacramento River Watershed Program, Monitoring 2005-2007 (SRWP 2006). Fish tissue samples were collected by the California Department of Fish and Game Moss Landing Marine Lab, using protocols detailed in Sampling and Processing Trace Metal and Synthetic Organic Samples of Marine Mussels, Freshwater Clams, Marine Crabs, Marine and Freshwater Fish and Sediments: DFG Method 102 (CDFG 2001). A holding time violation was noted in the dataset for all samples included in this line of evidence. The amount of time by which the holding time was exceeded was not provided.
QAPP Information Reference(s):	

DECISION ID **4369** **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

Pollutant:	**Mercury**
Final Listing Decision:	**Do Not Delist from 303(d) list (TMDL required list)**
Last Listing Cycle's Final Listing Decision:	Do Not Delist from 303(d) list (TMDL required list)(2006)
Revision Status	Original
Sources:	Resource Extraction
Expected TMDL Completion Date:	2010
Impairment from Pollutant or Pollution:	Pollutant

Conclusion:

This pollutant is being considered for removal from the section 303(d) list under section 4.4 of the Listing Policy. Under section 4.4 two lines of evidence are necessary to assess listing status.

Two lines of evidence are available in the administrative record to assess this pollutant. Based on section 4.4, a health advisory has been issued by OEHHA for this water. Tissue samples from multiple species were collected, were considered representative and determined to exceed OEHHA criteria.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. A health advisory is available and fish in the water exceed OEHHA guidelines. The samples had sufficient sample size (more than 9 fish per species) of legal/edible size fish to be considered representative of mercury levels in those species, thereby allowing adequate estimation of the health risks associated with their consumption.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

RWQCB Board Staff Decision: After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should not be removed from the section 303(d) list because applicable water quality standards for the pollutant are being exceeded.

SWRCB Board Staff Decision: After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

USEPA Action (if applicable):	USEPA approved the listing of this water body as a water quality limited segment requiring a TMDL for this pollutant.

Line of Evidence (LOE) for Decision ID 4369, Mercury **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	2650
Pollutant:	Mercury
LOE Subgroup:	Health Advisories
Matrix:	Tissue
Fraction:	Total
Beneficial Use:	Commercial or recreational collection of fish, shellfish, or organisms
Number of Samples:	0
Number of Exceedances:	0
Data and Information Type:	Not Specified
Data Used to Assess Water Quality:	USGS and UCD collected a total of 11 fish species by electrofishing equipment or gill nets in August 2000, from September to October 2002, and in July 2003, at several sites in Lake Natoma, including the vicinity of Negro Bar and Mississippi Bar, the mouths of Willow Creek and Alder Creek, Natomas Slough, and near Nimbus Dam (Saiki et al., 2004; Alpers et al., 2004; Klasing, S. and R. Brodberg, 2004). Species collected included largemouth bass, smallmouth bass, spotted bass, channel catfish, white catfish, brown bullhead, black bullhead, redear sunfish, green sunfish, bluegill, and rainbow trout. Fish were measured and weighed; boneless and skinless individual fillets were submitted to University of California - Davis (the August 2000, and July 2003, samples) or the USGS Columbia Environmental Research Center (CERC) in Columbia, Missouri, (the September to October, 2002, samples) for total mercury analyses by atomic absorption spectrophotometry using either a Perkin Elmer Flow Injection Mercury System or a Milestone DMA-80 analyzer. Under TSMP, the California Department of Fish and Game (CDFG) collected largemouth bass (n= 15 in three composites), pike minnow (n= 16 in three composites), and sucker samples (n = 35 in nine composites) by electrofishing equipment or gill nets in 1979-1983, 1987, and 1990-1993 near the Highway 160 and Watt Avenue bridges on the lower American River. Fish were measured and weighed and made into composites using skin-off muscle fillet. Composite samples were homogenized at the CDFG Water Pollution Control Laboratory and analyzed for total mercury by cold vapor atomic absorption spectrophotometry (TSMP, 2002). For the Sacramento River Watershed Program, largemouth bass (n = 26 in seven composites), striped bass (n = 1), pike minnow (n = 25 in five composites), sucker (n = 35 in seven composites), white catfish (n = 9 in two composites), and redear sunfish (n = 10 in two composites) were collected by electroshock, nets, or hook and line from 1997 to 2002 at known fishing locations on the lower American River from Sunrise Avenue to Discovery Park. Fish were measured and weighed and made into composites using skin-off muscle fillet. Composite samples were homogenized at Moss Landing Marine Laboratory and analyzed for total mercury using a Perkin Elmer Flow Injection Mercury System.
Data Reference:	Placeholder reference 2006 303(d)
Water Quality Objective/Criterion:	Fish consumption health advisory issued by OEHHA in September 2004.
Objective/Criterion Reference:	Placeholder reference 2006 303(d)
Evaluation Guideline:	OEHHA guidance tissue levels for mercury (Brodberg & Pollock, 1999).
Guideline Reference:	Placeholder reference 2006 303(d)

Spatial Representation:	Sample locations included Lake Natoma at Willow Creek, Mississippi Bar, Nimbus Dam, Alder Creek, Natomas Slough and Negro Bar; on the American River samples were taken at Discovery Park, d/s Watt Ave. bridge, and at Sunrise.
Temporal Representation:	Collection dates for USGS and UCD sampling data from Lake Natoma ranged from Aug. 2000, Sept. and Oct. 2002, and July 2003. SRWP data was collected in 1997, 1998, 1999, 2000, and 2001. Additionally, composite fish samples were collected as part of TSMP and SRWP, periodically from 1978 until 2002, from sections of the lower American River. Only mercury data were considered for this advisory.
Environmental Conditions:	Of the samples collected at Lake Natoma and the lower American River, largemouth bass (n = 64), bluegill (n = 78), pike minnow (n = 41), sucker (n = 70), channel catfish (n =11), white catfish (n = 10) and redear sunfish (n = 20) had sufficient sample size (≥ 9 fish per species) of legal/edible size fish to be considered representative of mercury levels in those species, thereby allowing adequate estimation of the health risks associated with their consumption.
QAPP Information:	QA Info Missing
QAPP Information Reference(s):	

Line of Evidence (LOE) for Decision ID 4369, Mercury **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	2649
Pollutant:	Mercury
LOE Subgroup:	Testimonial Evidence
Matrix:	Not Specified
Fraction:	None
Beneficial Use:	Commercial or recreational collection of fish, shellfish, or organisms
Number of Samples:	0
Number of Exceedances:	0
Data and Information Type:	Not Specified
Data Used to Assess Water Quality:	Supporting documentation - Fish consumption study documenting overlaps of fishing intensities with mercury concentrations in fish. Concentrations >0.3 ppm have been measured in largemouth bass, Smallmouth and white bass, Sacramento pike minnow, Suckers sampled from the following American River.
Data Reference:	Placeholder reference 2006 303(d)
Water Quality Objective/Criterion:	
Objective/Criterion Reference:	
Evaluation Guideline:	
Guideline Reference:	
Spatial Representation:	
Temporal Representation:	
Environmental Conditions:	
QAPP Information:	QA Info Missing
QAPP Information Reference(s):	

DECISION ID **4384** **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

Pollutant:	**Diazinon**
Final Listing Decision:	**Do Not List on 303(d) list (TMDL required list)**

Last Listing Cycle's Final Listing Decision:	Do Not List on 303(d) list (TMDL required list)(2006)
Revision Status	Original
Impairment from Pollutant or Pollution:	Pollutant

Conclusion:

This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Three of the samples exceed the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Three of 86 samples exceeded the guideline and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

RWQCB Board Staff Decision:

This is a decision made by the State Water Resources Control Board and approved by the USEPA in 2006 . No new data were assessed by the Regional Board for 2008. The decision has not changed.

SWRCB Board Staff Decision:

After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

USEPA Action (if applicable):

Line of Evidence (LOE) for Decision ID 4384, Diazinon **Region 5**

American River, Lower (Nimbus Dam to confluence with Sacramento River)

LOE ID:	2651
Pollutant:	Diazinon
LOE Subgroup:	Pollutant-Water
Matrix:	Water
Fraction:	Dissolved
Beneficial Use:	Wildlife Habitat
Number of Samples:	86
Number of Exceedances:	3
Data and Information Type:	PHYSICAL/CHEMICAL MONITORING
Data Used to Assess Water Quality:	Eighty-six samples were taken; 3 exceeded the CDFG 4-day average and 1 exceeded the 1-hour criteria. Two samples were less than values and could not be used. Analysis methods used were GC/MS in 1991-92; ELISA in 1997-99; and EPA 8141 from 1999-2003. (Larry Walker & Associates, 2002).
Data Reference:	Placeholder reference 2006 303(d)
Water Quality Objective/Criterion:	No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that

	adversely affect beneficial uses. Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the executive Officer.
Objective/Criterion Reference:	Placeholder reference 2006 303(d)
Evaluation Guideline:	Diazinon - CDFG Hazard Assessment Criteria - 0.10 ug/L 4-day average and 0.16 ug/L 1-hour average (Siepman & Finlayson, 2000; Finlayson, 2004).
Guideline Reference:	Placeholder reference 2006 303(d)
Spatial Representation:	All samples were collected at the American River at Discovery Park.
Temporal Representation:	Samples were collected monthly from 1997-99, 2001-2002; 2 samples were collected in 1991; 3 in 1992; and 3 in 2000. Samples were collected for the first 6 months in 2003.
Environmental Conditions:	
QAPP Information:	QA Info Missing
QAPP Information Reference(s):	