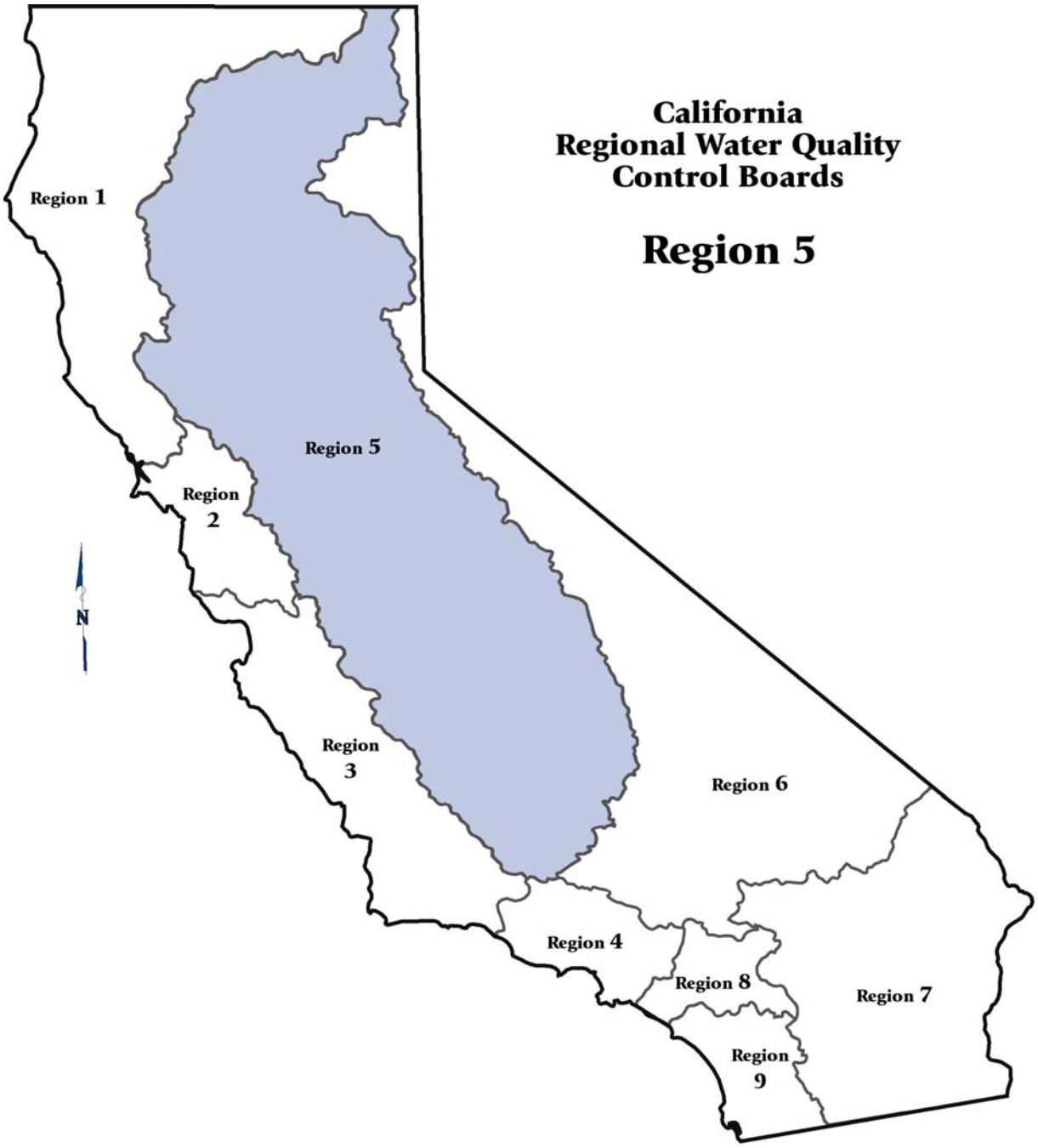
Fact Sheets Supporting
"Do Not List" Recommendations



September 2006

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New or Revised Fact Sheets

New or Revised Fact Sheets

Region 5

Water Segment:	Carson Creek (from WWTP to Deer Creek)
Pollutant:	Copper
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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. None of the samples exceed the chemical constituents 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. None of 11 samples exceed the CTR Freshwater acute criteria and this does not exceed the allowable frequency listed in Table 3.2 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
Evaluation Guideline:	CTR Hardness-based Freshwater Acute criterion (40 CFR 131).
Data Used to Assess Water Quality:	None of 11 samples exceed the CTR criterion (Central Valley RWQCB, 2003a).
Spatial Representation:	El Dorado Hills Wastewater Treatment Plant (EDHWWTP) is

	approximately 30 miles east of Sacramento in Section 14, T9N, R8E, MDB&M. Samples were collected at the effluent discharge Parshall flume, which is located immediately prior to the Carson Creek discharge point except during June through October 2001 when samples were collected from the chlorine contact tank.
Temporal Representation:	Samples were collected from March 2001 through February 2002.
Environmental Conditions:	From June through October 2001, the EDHWWTP was conducting reclaim operations, rather than discharging treated effluent to Carson Creek.
Data Quality Assessment:	The effluent and receiving water monitoring study was initiated in March 2001, consistent with the QAPP prepared by RBI (RBI 2001) and submitted to and reviewed by the RWQCB permitting staff.

Region 5

Water Segment: Chowchilla River (Above Eastman Lake to confl w Chowchilla East and West Forks)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 one line of evidence is necessary to assess listing status.

Two lines of evidence are available in the administrative record to assess this pollutant. Three studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of not 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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds where they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Data for the percentage of species collected were the same for each baseline study at the sampling sites. The baseline studies and this study each sampled the same geographic area, with each having similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed at (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Water bodies in the Sierra Nevada were sampled between 90 and 1100 meters elevation and included the Chowchilla River.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27 - 9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Line of Evidence	Population/Community Degradation
Beneficial Use	WA - Warm Freshwater Habitat

Non-Numeric Objective:	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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	California roach are almost completely gone from the upper San Joaquin, Fresno, and Chowchilla river systems in central California, apparently from predation from green sunfish. Green sunfish invade small intermittent streams favored by both species, where they can eliminate the roach when the two become trapped together in isolated ponds during summer (Moyle, P.B. 1976).

Region 5

Water Segment: Chowchilla River (below Eastman Lake)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 one line of evidence is necessary to assess listing status.

Two lines of evidence are available in the administrative record to assess this pollutant. Three studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Data as species percentage was collected and were the same for each baseline study at the sampling sites. The baseline studies and this study each sampled the same geographic area, with each having similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed at (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Water bodies in the Sierra Nevada were sampled between 90 and 1100 meters elevation and included the Chowchilla River.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27 - 9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Line of Evidence	Population/Community Degradation
Beneficial Use	WA - Warm Freshwater Habitat

Non-Numeric Objective:	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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	California roach are almost completely gone from the upper San Joaquin, Fresno, and Chowchilla river systems in central California, apparently from predation from green sunfish. Green sunfish invade small intermittent streams favored by both species, where they can eliminate the roach when the two become trapped together in isolated ponds during summer (Moyle, P.B. 1976).

Region 5

Water Segment: Chowchilla River, East Fork (Confl w Chowchilla River to Headwaters)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 one line of evidence is necessary to assess listing status.

Two lines of evidence are available in the administrative record to assess this pollutant. Three studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percentage data was collected and were the same for each baseline study at the sampling sites. The baseline studies and this study each sampled the same geographic area, with each having similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed at (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Water bodies in the Sierra Nevada were sampled between 90 and 1100 meters elevation and included the Chowchilla River.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27 - 9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Line of Evidence	Population/Community Degradation
Beneficial Use	WA - Warm Freshwater Habitat

Non-Numeric Objective:	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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	California roach are almost completely gone from the upper San Joaquin, Fresno, and Chowchilla river systems in central California, apparently from predation from green sunfish. Green sunfish invade small intermittent streams favored by both species, where they can eliminate the roach when the two become trapped together in isolated ponds during summer (Moyle, P.B. 1976).

Region 5

Water Segment: Chowchilla River, Middle Fork (Confl with Chowchilla River West Fork to Headwaters)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 one line of evidence is necessary to assess listing status.

Two lines of evidence are available in the administrative record to assess this pollutant. Three studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percentage data was collected and were the same for each baseline study at the sampling sites. The baseline studies and this study each sampled the same geographic area, with each having similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed at (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Water bodies in the Sierra Nevada were sampled between 90 and 1100 meters elevation and included the Chowchilla River.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27 - 9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Line of Evidence	Population/Community Degradation
Beneficial Use	WA - Warm Freshwater Habitat

Non-Numeric Objective:	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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	California roach are almost completely gone from the upper San Joaquin, Fresno, and Chowchilla river systems in central California, apparently from predation from green sunfish. Green sunfish invade small intermittent streams favored by both species, where they can eliminate the roach when the two become trapped together in isolated ponds during summer (Moyle, P.B. 1976).

Region 5

Water Segment: Chowchilla River, West Fork (Confl w Chowchilla River to Headwaters)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 one line of evidence is necessary to assess listing status.

Two lines of evidence are available in the administrative record to assess this pollutant. Three studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percentage data were collected and were the same for each baseline study at the sampling sites. The baseline studies and this study each sampled the same geographic area, with each having similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed at (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Water bodies in the Sierra Nevada were sampled between 90 and 1100 meters elevation and included the Chowchilla River.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27 - 9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Line of Evidence	Population/Community Degradation
Beneficial Use	WA - Warm Freshwater Habitat

Non-Numeric Objective:	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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board (Central Valley Regional Board Basin Plan, Page III-8.00, Water Quality Objectives.)
Data Used to Assess Water Quality:	California roach are almost completely gone from the upper San Joaquin, Fresno, and Chowchilla river systems in central California, apparently from predation from green sunfish. Green sunfish invade small intermittent streams favored by both species, where they can eliminate the roach when the two become trapped together in isolated ponds during summer (Moyle, P.B. 1976).

Region 5

Water Segment: Elk Grove Creek

Pollutant: Chlorpyrifos

Decision: Do Not List

Weight of Evidence: 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.

Two lines of evidence are available in the administrative record to assess this pollutant. None 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. None of the 18 samples exceeded the CDFG criteria 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.

SWRCB Staff Recommendation: After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed in the Water Quality Limited Segments category of the section 303(d) list because standards are being met in the water body.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: The narrative pesticide objectives state, in part:
- 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,
- Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies, and
- Pesticide concentrations shall not exceed the lowest levels technically

	and economically achievable. The Basin Plans narrative water quality objective for toxicity states that 'all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.'
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 14 ng/L 4-day average and 25 ng/L 1-hour average.
Data Used to Assess Water Quality:	Samples were collected beneath the water surface as near as possible to the center of the stream when water levels were low or when access was only possible from the bank. Otherwise, three to four grab samples were collected as one integrated grab sample. In 2001, 6 samples were taken at 3 sampling sites; all samples were non-detects (Spector et al., 2004).
Spatial Representation:	In 2001, Elk Grove Creek was monitored by the Regional Board at two sites - at Waterman Road and at Emerald Vista Drive.
Temporal Representation:	Storm events were sampled during the orchard dormant spray season months of January and February 2001 and 2002, and January through April 2003, to determine pesticide concentrations in rain and creeks during and after the orchard dormant spray season.
Data Quality Assessment:	During each monitoring season, additional samples were collected for quality assurance/quality control (QA/QC) purposes. Four types of quality assurance samples were collected to confirm the integrity of analytical results reported in this three-year monitoring study. The QA/QC samples included sample duplicates, equipment blanks, matrix spikes, and matrix spike duplicates. The procedures used for collecting the QA/QC samples are based on the San Joaquin River TMDL Quality Assurance Project Plan. During this 2001-2003 study, approximately 15-25 percent of the samples collected were either equipment blanks, sample duplicates, or matrix spikes and matrix spike duplicates.

Region 5

Water Segment:	Salt Slough (upstream from confluence with San Joaquin River)
Pollutant:	Selenium
Decision:	Do Not List
Weight of Evidence:	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. Two lines of evidence are available in the administrative record to assess this pollutant. There is a TMDL in place to address this water body pollutant combination, however not enough 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. Twenty-four of 616 water samples exceed the 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.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed in the Water Quality Limited Segments category of the section 303(d) list because a water quality standards are being met.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Central Valley RWQCB Basin Plan Fourth Edition 1998 - Table III-1 Trace Element Water Quality Objectives - Total Selenium - Salt Slough and constructed and re-constructed water supply channels in the Grassland watershed listed in Appendix 40 - 0.020 mg/L maximum concentration, 0.002 mg/L maximum monthly mean concentration.
Data Used to Assess Water Quality:	Eleven of 499 samples exceed the maximum concentration criteria. Thirteen of 117 exceed the maximum monthly mean concentration

	(Central Valley RWQCB 5, 2006).
Spatial Representation:	Samples collected at site MER531 (Highway 165 Lander Avenue).
Temporal Representation:	Samples collected from 10/6/1995 to 6/30/2005.

Original Fact Sheets

Fact Sheets Not Changed
from September 2005 Version

Region 5

Water Segment:	Almanor Lake
Pollutant:	Temperature, water
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under sections 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.2 the site has a few exceedances of temperature guidelines. Also, there is no evidence that human activities are modifying the temperature regime so as to adversely impact cold water species. Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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 water temperature guideline used complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Three of 5 annual maximum temperature values exceeded the water temperature guideline and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the Annual Maximum (instantaneous maximum observed during the summer) upper threshold criterion for steelhead trout as 21.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the Annual Maximum of 21.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	Lake Almanor was sampled at 2 stations (LA1-B and LA1-S) for 2000-2002. Each station had a set of 4 daily maximum temperature values, one for each month (June to September) for each year. Only 2000 and 2002 data was used for station LA1-B. Based on these sets of values, the annual maximum temperature for each year was determined for each station. There were a total of 5 annual maximum temperatures. Three of these values exceeded the 21.0°C steelhead criteria (PG&E, 2003C; PG&E, 2003A). Two samples out of 6 samples collected exceeded the temperature guideline for steelhead (PG&E, Rock Creek-Cresta FERC Project No. 1962, 2003; PG&E, Project FERC No. 2105, 2004). These samples were exceeded in July and August for the site at Lake Almanor at Canyon Dam near the surface.
Spatial Representation:	The two sample sites represent the area of the Lake that drains in the North Fork Feather River. The two sample sites were at Lake Almanor at Canyon Dam near the surface and near the bottom of the water body.
Temporal Representation:	Samples were collected during the summer months (June, July, August, and September) of 2000-2002.
QA/QC Equivalent:	Rock Creek--Cresta Project Water Temperature Monitoring Plan.

Line of Evidence	Testimonial Evidence
Beneficial Use	CO - Cold Freshwater Habitat
Information Used to Assess Water Quality:	Information received from RWQCB staff (PG&E, Rock Creek-Cresta FERC Project No. 1962, 2003; PG&E, Project FERC No. 2105, 2004). The existence of reservoirs results in an inherent temperature regime. Reservoirs take on their own individual temperature regimes, which

	includes seasonal development of warm and cold water layers. This has nothing to do with human induced impacts. Specifically for Lake Almanor, there is no evidence that human activities are modifying the temperature regime so as to adversely impact cold water species.
Non-Numeric Objective:	Basin Plan: ...Achievement of of the [water quality] objectives depends on applying them to controllable water quality factors. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of waters of the state...and that may be reasonably controlled.

Region 5

Water Segment:	American River, Lower (Nimbus Dam to confluence with Sacramento River)
Pollutant:	Diazinon
Decision:	Do Not List
Weight of Evidence:	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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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.

Evaluation Guideline:	Diazinon - CDFG Hazard Assessment Criteria - 0.10 µg/L 4-day average and 0.16 µg/L 1-hour average (Siepman & Finlayson, 2000; Finlayson, 2004).
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).
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.

Region 5

Water Segment:	Bear River (Amador Co, Lower Bear River Reservoir to Mokelumne River, N Fork)
Pollutant:	Oxygen, Dissolved
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under sections 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. Sixteen lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.2, numeric water quality objectives for dissolved oxygen are not exceeded and the pollutant is not likely to cause or contribute to the exceedance. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination the toxic 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. Four of 80 samples exceeded the Basin Plan water quality objective for dissolved oxygen, and these do not exceed the allowable frequency listed in Table 3.2 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD) - From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).

Data Used to Assess Water Quality:	One out of 5 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Bear River above Upper Bear River Res., below its confluence with Tragedy Creek. Latitude (38° 34.40 N) ; Longitude (120° 12.56W).
Temporal Representation:	Samples taken monthly from 3/27/2002 to 7/17/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 3 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Unnamed tributary entering midway up the west shore of Upper Bear River Reservoir. Latitude (38° 33.90 N); Longitude (120° 13.23 W).
Temporal Representation:	Samples taken monthly from 4/23/2002 to 6/11/2002.
Environmental Conditions:	No sample was taken in July 2002 due to the tributary being 'DRY'.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 1 sample had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Unnamed tributary on the upper west shore of Lower Bear River Reservoir (due to snowmelt). Latitude (38° 33.23 N); Longitude (120° 13.30 W).
Temporal Representation:	Sample taken 3/27/2002
Environmental Conditions:	Sample could not be taken on 4/23/2002 due to tributary being 'DRY'.

Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 1 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Unnamed tributary on the upper west shore of Lower Bear River Reservoir (due to snowmelt). Latitude (38° 33.21 N); Longitude (120° 13.32 W).
Temporal Representation:	Sample taken 3/27/2002.
Environmental Conditions:	No sample could be taken 4/23/2002 due to the tributary being 'DRY'.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Two out of 5 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Upper Bear River Reservoir outflow to Lower Bear River Reservoir. Latitude (38° 33.44 N); Longitude (120° 12.89 W).
Temporal Representation:	Samples taken monthly from 3/27/2002 to 7/17/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional

	Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 4 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Little Bear River on the northwest shore of Lower Bear River Reservoir. Latitude (38° 33.57 N); Longitude (120° 14.86 W).
Temporal Representation:	Samples taken monthly from 3/27/2002 to 6/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 7 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Leakage flow from the right abutment of the Lower Bear River Res. Dam collected at the weir. Latitude (38° 32.30 N); Longitude (120° 15.48 W).
Temporal Representation:	Samples taken monthly from 6/11/2002 to 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	One out of 7 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Leakage flow from the right abutment of the Lower Bear River Res. Dam collected below the weir, below the spillway confluence. Latitude (38° 32.23 N); Longitude (120° 15.44 W).
Temporal Representation:	Samples taken monthly from 5/15/2002 to 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 7 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Outflow from the instream flow release pipe below Lower Bear River Res. upstream of station BR1. Latitude (38° 32.21 N); Longitude (120° 15.40 W).
Temporal Representation:	Samples taken monthly from 5/15/2002 to 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 7 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Leakage flow from left abutment below Lower Bear River Res. Dam collected at the weir. Latitude (38° 32.26 N); Longitude (120° 15.41 W).
Temporal Representation:	Samples taken monthly from 6/11/2002 to 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boar's Water Quality Control Plan (Basin Plan).

Data Used to Assess Water Quality:	Zero out of 7 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Leakage flow from left abutment below Lower Bear River Res. Dam collected below the weir. Latitude (38° 32.23 N); Longitude (120° 15.42W).
Temporal Representation:	Samples taken monthly from 6/11/2002 to 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 1 sample had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Spill over Lower Bear River Res. during one sampling event only. Latitude (38° 32.26 N); Longitude (120° 15.44 W).
Temporal Representation:	Samples taken on 6/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 5 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Bear River above gaging station. Latitude (38° 29.604N); Longitude (120° 17.304 W).
Temporal Representation:	Samples taken monthly from 8/29/2002 to 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan)
Data Used to Assess Water Quality:	None of the 5 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Bear River above Confluence with Rattlesnake Creek Latitude (38° 31.145 N) Longitude (120° 16.008 W)
Temporal Representation:	Samples taken monthly 8/29/2002 to 12/11/2002
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 5 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Bear River below Confluence with Rattlesnake Creek. Latitude (38° 31.035 N); Longitude (120° 16.105 W).
Temporal Representation:	Samples taken monthly from 8/29/2002 to 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 10 samples had a DO concentration below 7.0 mg/L (PG&E, 2003).
Spatial Representation:	Bear River below Lower Bear River Reservoir. Latitude (38º 32.14 N); Longitude (120º 15.48W).

Temporal Representation:	Samples taken monthly from 3/27/2002 to 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment:	Bear River (Amador Co, Lower Bear River Reservoir to Mokelumne River, N Fork)
Pollutant:	pH
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under sections 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. One line of evidence are available in the administrative record to assess this pollutant. Based on section 3.2, numeric water quality objectives for pH are exceeded and the pollutant is likely to cause or contribute to the exceedance. 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 pollutant exceeds the water quality objective in the Basin Plan. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Nine of 77 samples exceeded the Basin Plan pH water quality objective, and these exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	"pH is not to be depressed below 6.5"- From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Nine out of 77 samples had a pH below 6.5. [Historical Water Quality Results for Analytical Laboratory Measurements

	PG&E Company Mokelumne River Project (FERC 137)] (PG&E, 2003).
Spatial Representation:	Bear River below Lower Bear River Reservoir.
Temporal Representation:	Samples taken between 2000 and 2003.
Data Quality Assessment:	Well documented QA/QC including report on Certified Analytical Reports and chain-of-custody documentation.

Region 5

Water Segment:	Bear River, Lower (below Camp Far West Reservoir)
Pollutant:	Mercury
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under sections 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 are available in the administrative record to assess this pollutant. Based on section 3.1 the site does not exceed the water quailty criterion. 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. None of the 30 samples exceeded the CTR freshwater acute or chronic values 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	California Toxics Rule: 50 ng/L.
Data Used to Assess Water Quality:	None of the 49 filtered samples exceeded the CTR criterion. Data are provided based on several recent and ongoing U.S. Geological Survey (USGS) projects. In some cases the data are preliminary and are therefore subject to change. Publication of the data by the USGS in most

	cases is expected by December 2005 (USGS, 2004a).
Spatial Representation:	All samples were taken from one station near Wheatland.
Temporal Representation:	Samples were taken from 6/23/99 to 7/1/03; with a few breaks, samples were taken primarily on a monthly basis.
Data Quality Assessment:	Data from USGS reports are considered of adequate quality per section 6.1.4 of the Policy.

Region 5

Water Segment: Big Chico Creek (Bidwell Park)

Pollutant: Diazinon

Decision: Do Not List

Weight of Evidence: 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. None of the samples exceed the water quality objective for pesticides.

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. None of the 9 samples exceeded the CDFG criteria 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.

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

Lines of Evidence:

Line of Evidence Pollutant-Water

Beneficial Use CO - Cold Freshwater Habitat

Non-Numeric Objective: 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. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the

	Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CDFG Hazard Assessment Criteria 0.10 µg/L 4-day average and 0.16 µg/L 1-hour average (Siepman & Finlayson, 2000; Finlayson, 2004).
Data Used to Assess Water Quality:	Data was analyzed using GC/ECD/TSD. Samples collected at the mouth were also analyzed using EPA 8141A; all data points were non-detect. None of the concentrations from the 9 samples from this site exceeded the CDFG criteria (Dileanis, 2003).
Spatial Representation:	Samples were collected on Big Chico Creek at Chico and near the mouth.
Temporal Representation:	Nine samples were collected at both locations during February.

Region 5

Water Segment: Butt Valley Reservoir

Pollutant: Temperature, water

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under sections 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status.

Two lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.2 the site has a few exceedances of temperature guidelines. Also, there is no evidence that human activities are modifying the temperature regime so as to adversely impact cold water species.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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 water temperature guideline used complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. Three of 3 annual maximum temperature values exceeded the water temperature guideline of 21.0 degrees Celcius, and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat, MI - Fish Migration, SP - Fish Spawning

Matrix: Water

Water Quality Objective/ Water Quality Criterion: At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water

	temperature. To the extent of any conflict with the above, the more stringent objective applies. In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the Annual Maximum (instantaneous maximum observed during the summer) upper threshold criterion for steelhead trout as 21.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the Annual Maximum of 21.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	Butt Valley Reservoir was sampled at 3 stations: BV1, BV2-S, BV2-B. Each station had a set of 4 daily maximum temperature values, one for each month (June to September) for 2002. Based on this set of values the annual maximum temperature was determined for 2002. Three of the 3 total annual maximum temperatures for 2002 exceeded the 21.0°C steelhead criteria (PG&E, 2003c).
Spatial Representation:	Samples were taken at three stations: BV1 (Butt Valley Powerhouse), BV2-S (Butt Valley Res. at Caribou Intake near the surface), BV2-B (Butt Valley Res. at Caribou Intake near the bottom).
Temporal Representation:	Samples were collected during the summer months (June, July, August, and September) of 2002.
QA/QC Equivalent:	Rock Creek--Cresta Project Water Temperature Monitoring Plan.

Line of Evidence	Testimonial Evidence
Beneficial Use	CO - Cold Freshwater Habitat, MI - Fish Migration, SP - Fish Spawning
Information Used to Assess Water Quality:	Information received from RWQCB staff. The existence of reservoirs results in an inherent temperature regime. Reservoirs take on their own individual temperature regimes, which includes seasonal development of warm and cold water layers. This has nothing to do with human induced impacts. Specifically for Butt Reservoir, there is no evidence that human activities are modifying the temperature regime so as to adversely impact cold water species.
Non-Numeric Objective:	Basin Plan: ...Achievement of of the [water quality] objectives depends on applying them to controllable water quality factors. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of waters of the state...and that may be reasonably controlled.

Region 5

Water Segment: Butte Creek (Butte County)

Pollutant: Diazinon

Decision: Do Not List

Weight of Evidence: 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. None 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. None of the 45 samples exceeded the CDFG Hazard Assessment Criteria 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.

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

Lines of Evidence:

Line of Evidence Pollutant-Water

Beneficial Use CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat

Non-Numeric Objective: 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. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the

	Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 0.10 µg/L 4-day average and 0.16 µg/L 1-hour average (Siepman & Finlayson, 2000; Finlayson, 2004).
Data Used to Assess Water Quality:	None of the concentrations from the 45 samples from this site exceeded the CDFG criteria. Data was analyzed using ELISA and GC/ECD/TSD. Some of the data was questionable due to a possible bias (higher diazinon conc) from the ELISA method and as such could not be used in this assessment (Dileanis, 2003a; Dileanis, 2002).
Spatial Representation:	Samples were taken on Butte Creek at Gridley Road.
Temporal Representation:	Samples were taken late January/early February 2000-01.

Region 5

Water Segment:	Butte Creek (Butte County)
Pollutant:	Temperature, water
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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. The data provided is insufficient to determine if standards are being met or exceeded against the water quality criteria and with the confidence and power required by the Listing Policy. 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. The data provided is insufficient to determine if standards are being met or exceeded against the water quality criteria and with the confidence and power required by the Listing Policy. Based on the data provided, the 7-day mean, 7-day maximum, annual maximum and maximum weekly average temperatures (MWAT) cannot be determined so as to compare to the water quality criteria as outlined in Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB 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 for the pollutant are met or exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California including any revisions. There are also temperature objectives for the Delta in the State Water Board's May 1991 Water Quality Control Plan for salinity. At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature. To the extent of any conflict with the above, the more stringent objective applies. In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the 7-day Mean (maximum value of the 7-day moving average of the daily mean temperature) upper threshold criterion for steelhead trout as 17.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the 7-day average of 17.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	Thermal recording data loggers were deployed in pools at the fives sites within the SRCS holding and spawning reach of Butte Creek. They were set for 1-hour interval readings and recorded average daily temperatures which ranged as high as 22.9 degrees Celsius on July 23, at the Cable Bridge location. The measurements were recorded from June 1st to October 31st, 2003 at all 5 sites. Only the number of sampling days equal to or exceeding 15.0°C, 17.5°C and 20.0°C were given for each site. The total number of samples was not specified (Ward et al. 2003).
Spatial Representation:	Daily temperature readings were recorded at 5 sites on Butte Creek - Quartz Bowl Pool, Chimney Rock, Pool 4, Centerville Estates, and Cable Bridge.
Temporal Representation:	Daily temperatures were recorded from June to October 2003 (6/01/03-10/31/03).
Environmental Conditions:	Temperatures in Butte Creek above Centerville Powerhouse averaged 3.1 degree celsius warmer (7/1 to 9/15) than LCDD (average flow of 46.3 cfs). Temperatures at Lower Centerville Canal averaged 0.6 degree celsius warmer (7/1 to 9/15) than LCDD (average flow of 108 cfs).

Stream flows at LCDD were at spill levels through July 6, 2003. Temperature changes were evaluated for the period June 15 through July 6, 2003. During this period the delta-T in the bypass reach of Butte Creek (between LCDD and Butte Creek above the Centerville Powerhouse) was +1.5 degrees celsius with flow in the creek exceeding 200cfs. In comparison, the delta-T through Lower Centerville Canal (between LCDD and the Centerville Powerhouse Headworks) was +0.9 degrees celsius with an average flow of 77 cfs.

Region 5

Water Segment:	Carson Creek (from WWTP to Deer Creek)
Pollutant:	Aldrin
Decision:	Do Not List
Weight of Evidence:	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. One of the samples exceed the pesticide 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 samples exceeded the CTR Human Health criterion 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality 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. Pesticide concentrations shall not exceed the lowest levels

	technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CTR Human Health.
Data Used to Assess Water Quality:	One out of 4 samples exceed the CTR Human Health standard (CVRWQCB, 2003a).
Spatial Representation:	One station was sampled.
Temporal Representation:	Samples were collected from March 2001 through Feb. 2002.
Data Quality Assessment:	The effluent and receiving water monitoring study was initiated in March 2001, consistent with the QAPP prepared by RBI (RBI 2001) and submitted to and reviewed by the RWQCB permitting staff.

Region 5

Water Segment:	Carson Creek (from WWTP to Deer Creek)
Pollutant:	Heptachlor epoxide
Decision:	Do Not List
Weight of Evidence:	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. One of the samples exceeded the pesticide 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 samples exceeded the CTR Human Health Freshwater criterion 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality 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. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CTR Human Health Freshwater criteria (0.00021 ppb).
Data Used to Assess Water Quality:	One out of 4 samples exceed the CTR Human Health Freshwater criteria (CVRWQCB, 2003a).
Spatial Representation:	Samples were collected at one station.
Temporal Representation:	Samples were collected from March 2001 through Feb. 2002.
Data Quality Assessment:	The effluent and receiving water monitoring study was initiated in March 2001, consistent with the QAPP prepared by RBI (RBI 2001) and submitted to and reviewed by the RWQCB permitting staff.

Region 5

Water Segment:	Carson Creek (from WWTP to Deer Creek)
Pollutant:	Iron
Decision:	Do Not List
Weight of Evidence:	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. One of the samples exceeded the chemical constituent 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 samples exceeded the DHS Secondary MCL (300 µg/L) 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations, which are incorporated by reference into this plan
Evaluation Guideline:	DHS Title 22 Secondary MCL Human Health criteria (0.3 mg/L).

Data Used to Assess Water Quality:	One out of 4 samples exceed the DHS MCL criteria (CVRWQCB, 2003a).
Spatial Representation:	One station was sampled.
Temporal Representation:	Samples were collected from March 2001 through Feb. 2002.
Data Quality Assessment:	The effluent and receiving water monitoring study was initiated in March 2001, consistent with the QAPP prepared by RBI (RBI 2001) and submitted to and reviewed by the RWQCB permitting staff.

Region 5

Water Segment:	Carson Creek (from WWTP to Deer Creek)
Pollutant:	PCB-1248
Decision:	Do Not List
Weight of Evidence:	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. One of the samples exceed the CTR Human Health criterion. 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 samples exceeded the DHS Title 22 Secondary MCL criteria (0.0005 mg/L)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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	CCR Title 22 Primary MCL criteria (.0005 mg/L).
Data Used to Assess Water Quality:	One out of 4 samples exceed the Primary MCL (CVRWQCB, 2003a).
Spatial Representation:	Samples were collected at one station.
Temporal Representation:	Samples were collected from March 2001 through Feb. 2002.

Data Quality Assessment:	The effluent and receiving water monitoring study was initiated in March 2001, consistent with the QAPP prepared by RBI (RBI 2001) and submitted to and reviewed by the RWQCB permitting staff.

Region 5

Water Segment:	Cherokee Canal
Pollutant:	Diazinon
Decision:	Do Not List
Weight of Evidence:	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. Nine samples were taken. Six, taken using the ELISA technique, could not be used because the data was considered to be of questionable quality. None of the usable measurements exceeded the diazinon guideline. Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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. None of 3 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies (see State Water Resources Control Board Resolution No. 68-16 and 40 C.F.R. Section 131.12). Pesticide concentrations shall not exceed the lowest

	levels technically and economically achievable. A trend in declining water quality has not been established per the Policy in section 3.1.10.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 0.16 µg/L (acute) (Siepman & Finlayson, 2000; Finlayson, 2004).
Data Used to Assess Water Quality:	Nine samples were taken. The 6 analyzed using the ELISA technique could not be used because the data was considered to be of questionable quality and should not be used unless verified by GCMS. None of 3 samples using the GC/ECD/TSD technique exceeded the guideline (Dileanis et al., 2002).
Spatial Representation:	All samples were collected at Cherokee Canal at Gridley Road.
Temporal Representation:	Samples were collected on 1/30/00, 1/31/00, 2/11/00, 2/12/00, 2/21/00, 2/22/00.
Data Quality Assessment:	Data from USGS reports are considered of adequate quality per section 6.1.4 of the Policy. ELISA data were not used because the results are biased.

Region 5

Water Segment: Colusa Basin Drain

Pollutant: Chlorpyrifos

Decision: Do Not List

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

Two lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.1, none of the samples exceeded the guideline.

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 CDFG hazard assessment criterion used complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. None of samples exceeded the CDFG Hazard Assessment Criterion.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Line of Evidence Pollutant-Water

Beneficial Use AG - Agricultural Supply, IN - Industrial Service Supply, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

Non-Numeric Objective: 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. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 14 ng/L 4-day average and 25 ng/L 1-hour average
Data Used to Assess Water Quality:	Data was obtained from the USGS NWISweb data and SRWP database. None of the concentrations from the samples from this site exceeded the CDFG criteria; the SRWP samples were non-detects (USGS, 2005; LWA, 2002b).
Spatial Representation:	Samples taken at Colusa Basin Drain at Road 99E near Knights Landing.
Temporal Representation:	Samples taken from 1996-2000.

Line of Evidence	Pollutant-Water
Beneficial Use	AG - Agricultural Supply, IN - Industrial Service Supply, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Information Used to Assess Water Quality:	Immediately after collection, sample bottles were placed on ice and delivered to CDFA Center for Analytical Chemistry in Sacramento. Samples were usually delivered on the same day and no later than 48 hours after collection.
Non-Numeric Objective:	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. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 14 ng/L 4-day average and 25 ng/L 1-hour average
Data Used to Assess Water Quality:	Isokinetic, depth integrated water samples were collected at 6-10 equally spaced points across the channel width with a USGS D-77 sampler using the equal-width-increment method (EWI). Depth integrated samples were collected in 3-L (liter) PTFE (polytetrafluoroethylene) bottles strapped to a weighted cage and lowered by line at three points across the width of the channel. Fourteen samples were taken; none of the samples exceeded the CDFG criteria (Calanchini, 2004).
Spatial Representation:	Seven sites were monitored in the Sacramento River Basin; samples

	were collected at the Colusa Basin Drain near Knights Landing. Sampling frequency for each storm event was one sample/day was taken for 7days.
Temporal Representation:	Two storm events were sampled for the 2004 TMDL project in the Sacramento River Basin. The first storm event (Storm 1) was the period 28 January to 6 February 2004. The second storm event (Storm 2) was the period 15-23 February, 2004. For storm 1 sampling was conducted from 28 January to 3 February. For storm 2 the sampling period began on 16 February and extended until 22 February.

Region 5

Water Segment: Deer Creek (Sacramento County)

Pollutant: Atrazine

Decision: Do Not List

Weight of Evidence: 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. One of the samples exceed the pesticide 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 2 samples exceeded the California DHS Primary MCL 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.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WI - Wildlife Habitat

Matrix: Water

Water Quality Objective/ Water Quality 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. Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15. Where more than one objective may be applicable, the most stringent objective applies.
Evaluation Guideline:	California DHS Primary MCL (1µg/L).
Data Used to Assess Water Quality:	All receiving water samples were grab samples. The sample collected on 5/21/02 measured 1.2 µg/L exceeding the Primary MCL of 1µg/L. A sample collected on 2/21/02 did not exceed the standard (CVRWQCB, 2003a).
Spatial Representation:	The Deer Creek Wastewater Treatment Plant is located in the Section 16, T9N, R9E, MDB&M, adjacent to Deer Creek, a tributary to the Cosumnes River. Receiving water samples were collected at the NPDES permit R1 monitoring location, which is located in Deer Creek at the gauging station upstream of the point of discharge at the first bridge crossing Deer Creek as part of the access road to the DCWWTP.
Temporal Representation:	Receiving water sampling was collected on 5/21/02 and 2/21/02.
Data Quality Assessment:	The QAPP demonstrates that all field-sampling procedures were conducted in a technically appropriate, efficient, and cost-effective manner, ultimately contributing to the project goals.

Region 5

Water Segment: Deer Creek (Sacramento County)

Pollutant: Manganese

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under sections 3.1. 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 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 for 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 12 samples exceeded the DHS Secondary MCL 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.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB 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 exceeded and a pollutant does not contribute to or cause the problem.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WI - Wildlife Habitat

Matrix: -N/A

Water Quality Objective/ Water Quality Criterion: Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California

	Code of Regulations, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect.
Evaluation Guideline:	California DHS Secondary MCL (50 µg/L).
Data Used to Assess Water Quality:	All receiving water samples were grab samples. Concentrations of manganese (expressed as total recoverable) ranged from 3.7 µg/L to 260 µg/L. The July 2002 sample had a concentration of 260 µg/L, which is greater than the DHS secondary MCL of 50 µg/L. The other 11 samples had concentrations of manganese less than the DHS secondary MCL. One sample out of 12 exceeded the DHS Secondary MCL (CVRWQCB, 2003a).
Spatial Representation:	The Deer Creek Wastewater Treatment Plant is located in the Section 16, T9N, R9E, MDB&M, adjacent to Deer Creek, a tributary to the Cosumnes River. Receiving water samples were collected at the NPDES permit R1 monitoring location, which is located in Deer Creek at the gauging station upstream of the point of discharge at the first bridge crossing Deer Creek as part of the access road to the DCWWTP.
Temporal Representation:	Receiving water sampling was conducted between February 2002 and February 2003.
Data Quality Assessment:	The QAPP demonstrates that all field-sampling procedures were conducted in a technically appropriate, efficient, and cost-effective manner, ultimately contributing to the project goals.

Region 5

Water Segment: Deer Creek (Sacramento County)

Pollutant: pH (high)

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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. 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 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. Two of 12 samples exceeded the pH water quality objective and this does not exceed the allowable frequency listed in Table 3.2 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.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WI - Wildlife Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: The pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses. In determining compliance with the water quality objective for pH, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Basin Plan Water Quality Objective for pH.

Data Used to Assess Water Quality:	All receiving water samples were grab samples. Samples collected in Apr. 02 and Jun 02 exceeded the WQO; both samples measured 8.7 std units; the other 10 samples did not exceed the standard (CVRWQCB, 2003a).
Spatial Representation:	The Deer Creek Wastewater Treatment Plant is located in the Section 16, T9N, R9E, MDB&M, adjacent to Deer Creek, a tributary to the Cosumnes River. Receiving water samples were collected at the NPDES permit R1 monitoring location, which is located in Deer Creek at the gauging station upstream of the point of discharge at the first bridge crossing Deer Creek as part of the access road to the DCWWTP.
Temporal Representation:	Receiving water sampling was conducted between February 2002 and February 2003.
Data Quality Assessment:	The QAPP demonstrates that all field-sampling procedures were conducted in a technically appropriate, efficient, and cost-effective manner, ultimately contributing to the project goals.

Region 5

Water Segment: Feather River, Middle Fork (above Cromberg)

Pollutant: Temperature, water

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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. The one sample exceeded the water quality objective. The sampling size is insufficient to determine if standards are being met or exceeded against the water quality objective and with the confidence and power required by the Listing Policy.

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 does not satisfy the data quantity requirements of section 6.1.5 of the Policy.
3. The one annual maximum temperature measurement exceeded the water quality criterion of 21.0°C for steelhead and this sampling size is insufficient to determine if standards are being met or exceeded against the water quality objective and with the confidence and power required by 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.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB 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 for the pollutant are not being met or exceeded.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: AG - Agricultural Supply, CO - Cold Freshwater Habitat, MU - Municipal & Domestic, PO - Hydroelectric Power Generation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, SP - Fish Spawning, WA - Warm Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion:	At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature. To the extent of any conflict with the above, the more stringent objective applies. In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the Annual Maximum (instantaneous maximum observed during the summer) upper threshold criterion for steelhead trout as 21.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the Annual Maximum of 21.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	Continuous temperature measurements were taken in 2002 at 1 station (MB1) along the middle fork of the Feather River. The station had a set of 4 daily maximum temperature values, one for each month (June to September) for 2002. Based on this set of values the annual maximum temperature was determined for 2002. One of the 1 annual maximum temperature for 2002 exceeded the 21.0°C steelhead criteria (PG&E, 2003c).
Spatial Representation:	One sample site; Middle Fork of Feather River at Milsap Bar (MB1).
Temporal Representation:	Samples were collected during the summer (June, July, August, and September) of 2002.
Data Quality Assessment:	Rock Creek--Cresta Project Water Temperature Monitoring Plan.

Region 5

Water Segment: Feather River, North Fork (below Lake Almanor)

Pollutant: Aluminum

Decision: Do Not List

Weight of Evidence: 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. No samples exceed the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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. None of 20 samples exceeded the CTR freshwater acute criterion 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.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat, MU - Municipal & Domestic

Matrix: Water

Water Quality Objective/ Water Quality Criterion: All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

CTR Freshwater acute criteria.

Evaluation Guideline: USEPA National Recommended Ambient Water Quality Criteria Freshwater Aquatic Life Protection CTR CMC (750 µg/L).

Data Used to Assess Water Quality:	None of 20 samples exceeded the criterion. The spoil sample data were not used in the assessment (PG&E, 2003).
Spatial Representation:	Samples were collected above the Poe Reservoir (Poe 1-a), NFFR at Pulga (Poe-2),above the Poe Powerhouse (Poe-3); spoil pile samples were collected at Poe-S1A, NFFR upstream of culvert inflow (Poe-S2), NFFR above Poe Powerhouse, approximately 0.5 miles downstream of culvert inflow (Poe S-3), Poe S-4, RL and MDL. 2001-02 spoil pile samples were collected at Poe-adit, Poe L-1, NFFR downstream of Adit No. 2 (Poe L2), Poe L3, Adit No. 2 leakage culvert at inflow to NFFR (Poe L4), Poe L-5, Poe L-6, Poe T-1. In 2003, samples were collected at Poe 1-a, Poe 2-a, Poe 3, Poe-5, Poe-7, Flea Valley Creek and Mill Creek.
Temporal Representation:	Samples were collected in March, Jun-Sept. and Dec. 99 and March 00; spoil pile samples were collected in April 00; Nov 01 and Jan 02. In 2003, samples were collected in March, May, Aug., and Oct.
Data Quality Assessment:	PG&E reports are considered of adequate quality per section 6.1.4 of the Policy.

Region 5

Water Segment: Feather River, North Fork (below Lake Almanor)

Pollutant: Cadmium

Decision: Do Not List

Weight of Evidence: 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. One of the samples exceeded 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 sample exceeded the water quality 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.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

	CTR Freshwater CCC criteria.
Data Used to Assess Water Quality:	Exceedance of standard occurred and were collected at Poe-S1 (PG&E, 2003a).
Spatial Representation:	Samples were collected above the Poe Reservoir (Poe 1-a), NFFR at Pulga (Poe-2),above the Poe Powerhouse (Poe-3); spoil pile samples were collected at Poe-S1A, NFFR upstream of culvert inflow (Poe-S2), NFFR above Poe Powerhouse, approximately 0.5 miles downstream of culvert inflow (Poe S-3), Poe S-4, RL and MDL. 2001-02 spoil pile samples were collected at Poe-adit, Poe L-1, NFFR downstream of Adit No. 2 (Poe L2), Poe L3, Adit No. 2 leakage culvert at inflow to NFFR (Poe L4), Poe L-5, Poe L-6, Poe T-1. In 2003, samples were collected at Poe 1-a, Poe 2-a, Poe 3, Poe-5, Poe-7, Flea Valley Creek and Mill Creek
Temporal Representation:	Samples were collected in March, Jun-Sept. and Dec. 99 and March 00; spoil pile samples were collected in April 00; Nov 01 and Jan 02. In 2003, samples were collected in March, May, Aug., and Oct.
Data Quality Assessment:	Data from PG&E reports are considered of adequate quality per section 6.1.4 of the Policy.

Region 5

Water Segment:	Feather River, North Fork (below Lake Almanor)
Pollutant:	Copper
Decision:	Do Not List
Weight of Evidence:	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. Ten measurements exceeded the water quality objective but the minimum number of exceedances were low enough that the pollutant/waterbody combination did not require listing. 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. Ten of 124 samples exceeded the CTR freshwater criteria 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant,

	animal, or aquatic life. CTR Freshwater Criteria.
Data Used to Assess Water Quality:	Exceedance of standard occurred and the were collected at Poe-S2, Poe S-3, Poe S-4, Poe S-1A, Poe S-1B, Poe L-1, Poe L-2, Poe L-3, Poe L-5, Poe L-6 (PG&E, 2003).
Spatial Representation:	Samples were collected above the Poe Reservoir (Poe 1-a), NFFR at Pulga (Poe-2), above the Poe Powerhouse (Poe-3); spoil pile samples were collected at Poe-S1A, NFFR upstream of culvert inflow (Poe-S2), NFFR above Poe Powerhouse, approximately 0.5 miles downstream of culvert inflow (Poe S-3), Poe S-4, RL and MDL. 2001-02 spoil pile samples were collected at Poe-adit, Poe L-1, NFFR downstream of Adit No. 2 (Poe L2), Poe L3, Adit No. 2 leakage culvert at inflow to NFFR (Poe L4), Poe L-5, Poe L-6, Poe T-1. In 2003, samples were collected at Poe 1-a, Poe 2-a, Poe 3, Poe-5, Poe-7, Flea Valley Creek and Mill Creek
Temporal Representation:	Samples were collected in March, Jun-Sept. and Dec. 99 and March 00; spoil pile samples were collected in April 00; Nov 01 and Jan 02. In 2003, samples were collected in March, May, Aug., and Oct.
Data Quality Assessment:	Data from PG&E reports are considered of adequate quality per section 6.1.4 of the Policy.

Region 5

Water Segment: Feather River, North Fork (below Lake Almanor)

Pollutant: Iron

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under sections 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status.

Three lines of evidence are available in the administrative record to assess this pollutant. A few of the samples exceeded 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. Six of 124 samples exceeded the water quality objective and this does not exceed the allowable frequency listed in Table 3.2 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.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

Data Used to Assess Water Quality:	Exceedance of standard occurred and were collected at Poe-1A March and Sept, Poe 3, Poe S-1A, Poe L-2, Poe L4 (PG&E, 2003a).
Spatial Representation:	Samples were collected above the Poe Reservoir (Poe 1-a), NFFR at Pulga (Poe-2),above the Poe Powerhouse (Poe-3); spoil pile samples were collected at Poe-S1A, NFFR upstream of culvert inflow (Poe-S2), NFFR above Poe Powerhouse, approximately 0.5 miles downstream of culvert inflow (Poe S-3), Poe S-4, RL and MDL. 2001-02 spoil pile samples were collected at Poe-adit, Poe L-1, NFFR downstream of Adit No. 2 (Poe L2), Poe L3, Adit No. 2 leakage culvert at inflow to NFFR (Poe L4), Poe L-5, Poe L-6, Poe T-1. In 2003, samples were collected at Poe 1-a, Poe 2-a, Poe 3, Poe-5, Poe-7, Flea Valley Creek and Mill Creek.
Temporal Representation:	Samples were collected in March, Jun-Sept. and Dec. 99 and March 00; spoil pile samples were collected in April 00; Nov 01 and Jan 02. In 2003, samples were collected in March, May, Aug., and Oct.
Data Quality Assessment:	Data from PG&E reports are considered of adequate quality per section 6.1.4 of the Policy.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Data Used to Assess Water Quality:	Two samples collected at Poe 1A and 1 at Poe 3 exceeded the standard (PG&E, 2003a).
Spatial Representation:	Samples were collected at 3 sites on the NFFR, Poe 1A, Poe 2A and Poe 3.
Temporal Representation:	Sample dates 3/, 6/, 7/, 8/, 9/, 12/99 and 3/00.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

Data Used to Assess Water Quality:	Two samples collected at Poe 1A and 1 at Poe 3 exceeded the standard (PG&E, 2003a).
Spatial Representation:	Samples were collected at 3 sites on the NFFR, Poe 1A, Poe 2A and Poe 3.
Temporal Representation:	Sample dates 3/, 6/, 7/, 8/, 9/, 12/99 and 3/00.

Region 5

Water Segment:	Feather River, North Fork (below Lake Almanor)
Pollutant:	Manganese
Decision:	Do Not List
Weight of Evidence:	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. None of the measurements exceeded 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. None of 40 samples exceeded the water quality 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	MCL of 50 µg/L used.
Data Used to Assess Water Quality:	None of 40 sampels exceeded the MCL. The spoil pile samples were not used (PG&E, 2003).
Spatial Representation:	Samples were collected above the Poe Reservoir (Poe 1-a), NFFR at Pulga (Poe-2),above the Poe Powerhouse (Poe-3); spoil pile samples were collected at Poe-S1A, NFFR upstream of culvert inflow (Poe-S2),

	NFFR above Poe Powerhouse, approximately 0.5 miles downstream of culvert inflow (Poe S-3), Poe S-4, RL and MDL. 2001-02 spoil pile samples were collected at Poe-adit, Poe L-1, NFFR downstream of Adit No. 2 (Poe L2), Poe L3, Adit No. 2 leakage culvert at inflow to NFFR (Poe L4), Poe L-5, Poe L-6, Poe T-1. In 2003, samples were collected at Poe 1-a, Poe 2-a, Poe 3, Poe-5, Poe-7, Flea Valley Creek and Mill Creek
Temporal Representation:	Samples were collected in March, Jun-Sept. and Dec. 99 and March 00; spoil pile samples were collected in April 00; Nov 01 and Jan 02. In 2003, samples were collected in March, May, Aug., and Oct.
Data Quality Assessment:	Data from PG&E reports are considered of adequate quality per section 6.1.4 of the Policy.

Region 5

Water Segment:	Feather River, North Fork (below Lake Almanor)
Pollutant:	Polychlorinated biphenyls
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.5 of the Listing Policy. Under section 3.5 a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess this pollutant. None of the measurements exceed the tissue guideline. 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. None of the samples exceeded the OEHHA screening value for protection of humans eating fish 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Tissue
Beneficial Use:	CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat
Matrix:	Tissue
Evaluation Guideline:	The OEHHA screening value for protection of humans eating fish is 20 ppb for PCBs (Brodberg & Pollock, 1999).
Data Used to Assess Water Quality:	Three Sacramento suckers, 1 rainbow trout, 1 brown trout, 2 smallmouth bass, and several crayfish were collected from Belden Forebay (upstream of dredge disposal pile). Belden total PCB values in suckers ranged from 11.00-14.6 ppb (average = 12.9 ppb). The trout values were 2.6 ppb (rainbow) and 9.7 (brown). The bass PCB values were 5.70 and 14.90 ppb. The crayfish value was 0.80 ppb. Four Sacramento suckers, 4 rainbow trout, and several crayfish were collected from the North Fork of the Feather River (below the dredge disposal pile). Downstream total PCB values in suckers ranged from 2.30-7.30 ppb (average = 5.2 ppb). The trout values ranged from 5.10-6.70 ppb (average = 5.6 ppb). The crayfish value was 0.20 ppb (PG&E, 2002).
Spatial Representation:	Seven upstream fish samples and 8 downstream fish samples. Crayfish were collected in both areas.
Temporal Representation:	Upstream samples were collected August 14, 2001. Downstream samples were collected August 15, 2001.
Data Quality Assessment:	QA/QC information included in report. Appears to follow standard laboratory requirements.

Numeric Line of Evidence	Pollutant-Tissue
Beneficial Use:	CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat
Matrix:	Tissue
Evaluation Guideline:	The OEHHA screening value for protection of humans eating fish is 20 ppb for PCBs (Brodberg & Pollock, 1999).
Data Used to Assess Water Quality:	Six Sacramento suckers, 1 rainbow trout, 2 Sacramento pikeminnow, and 9 smallmouth bass were collected upstream (of Poe Powerhouse). Upstream PCB values in suckers ranged from 6.35-10.7 ppb (average = 7.37 ppb). PCB values in bass ranged from 1.31-1.94 ppb (average = 1.69 ppb). Upstream trout and pikeminnow values were unavailable. Six Sacramento suckers, 2 rainbow trout, 8 Sacramento pikeminnow, 9 smallmouth bass, and 9 spotted bass were collected downstream (of Poe Powerhouse) (PG&E, 2003a).

	Downstream PCB values in suckers ranged from 0.65-10.0 ppb (average = 3.68 ppb). PCB values in smallmouth bass ranged from 1.05-2.67 ppb (average = 1.86 ppb). PCB values in spotted bass ranged from 4.10-4.77 ppb (average = 4.44 ppb). Downstream trout and pikeminnow values were unavailable.
Spatial Representation:	Eighteen upstream (of Poe Powerhouse) and 10 downstream fish tissue samples taken.
Temporal Representation:	Upstream data collected 11/21/2002 and 6/16/2003 as part of overall Poe Project (Poe Reservoir and Big Bend Dam reservoir below Poe Powerhouse). This data covers both winter (wet) and summer (dry) periods. Downstream data collected 12/4/2002, 12/5/2002, and 6/19/2003.
Environmental Conditions:	Data from both relatively low and relatively high flow periods are included.

Region 5

Water Segment: Feather River, North Fork (below Lake Almanor)

Pollutant: Silver

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for listing under sections 2.1, 3.5, and 3.10 of the Listing Policy. Under section 3.5 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. Based on section 3.5 pollutant levels are evident in tissue concentrations and it cannot be determined if the pollutant is likely to cause or contribute to a toxic effect.

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. A pollutant specific evaluation guideline is not available that complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Tissue

Beneficial Use: AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

Matrix: Tissue

Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Data Used to Assess Water Quality:	Three Sacramento suckers, 1 rainbow trout, 1 brown trout, 2 smallmouth bass, and several crayfish were collected from Belden Forebay (upstream of dredge disposal pile). Belden silver values in suckers ranged from 0.005-0.006 ppm. The trout values were 0.014 ppm (rainbow) and 0.010 ppm (brown). The bass PCB values were 0.004 and 0.002 ppm. The crayfish value was 0.023 ppm. No data were available from the North Fork of the Feather River (below the dredge disposal pile) (PG&E, 2002).
Spatial Representation:	Seven upstream fish samples.
Temporal Representation:	Upstream samples were collected August 14, 2001.
Environmental Conditions:	Unknown. Probably relatively low flows.
Data Quality Assessment:	QA/QC information included in report. Appears to follow standard laboratory requirements.

Region 5

Water Segment:	Feather River, North Fork (below Lake Almanor)
Pollutant:	Specific Conductance
Decision:	Do Not List
Weight of Evidence:	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. A small portion 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 124 samples exceeded the water quality 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Shall not exceed 150 micromhos/cm (90 percentile) in well-mixed waters of the Feather River (Basin Plan).
Data Used to Assess Water Quality:	Three exceedances of the standard occurred and were collected at Poe-T1, Flea Valley Creek in Aug and Oct (PG&E, 2003a).

Spatial Representation:	Samples were collected above the Poe Reservoir (Poe 1-a), NFFR at Pulga (Poe-2),above the Poe Powerhouse (Poe-3); spoil pile samples were collected at Poe-S1A, NFFR upstream of culvert inflow (Poe-S2), NFFR above Poe Powerhouse, approximately 0.5 miles downstream of culvert inflow (Poe S-3), Poe S-4, RL and MDL. 2001-02 spoil pile samples were collected at Poe-adit, Poe L-1, NFFR downstream of Adit No. 2 (Poe L2), Poe L3, Adit No. 2 leakage culvert at inflow to NFFR (Poe L4), Poe L-5, Poe L-6, Poe T-1. In 2003, samples were collected at Poe 1-a, Poe 2-a, Poe 3, Poe-5, Poe-7, Flea Valley Creek and Mill Creek.
Temporal Representation:	Samples were collected in March, Jun-Sept. and Dec. 99 and March 00; spoil pile samples were collected in April 00; Nov 01 and Jan 02. In 2003, samples were collected in March, May, Aug., and Oct.
Data Quality Assessment:	Data from PG&E reports are considered of adequate quality per section 6.1.4 of the Policy.

Region 5

Water Segment: Feather River, North Fork (below Lake Almanor)

Pollutant: Turbidity

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under sections 3.1 of the Listing Policy. Under section 3.1, a minimum of one line of evidence is needed to assess listing status.

One line of evidence are available in the administrative record to assess this pollutant. Based on section 3.1 the site has exceeded the secondary MCL on a few occasions.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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. Five of 41 samples exceeded the secondary MCL and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: AG - Agricultural Supply, CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, NA - Navigation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, RA - Rare & Endangered Species, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits: Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU. Where natural turbidity is

	between 5 and 50 NTUs, increases shall not exceed 20 percent. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected (Basin Plan)
Evaluation Guideline:	Ca. Dept. of Health Services (DHS) Drinking water standards Secondary MCL.
Data Used to Assess Water Quality:	Five of 41 samples exceeded the MCL. The spoil pile data were not used because this location is not a part of the water body (PG&E, 2002).
Spatial Representation:	Eleven sites were sampled.
Temporal Representation:	Samples were collected in 1999, 2000, and 2003.

Region 5

Water Segment: Flea Valley Creek

Pollutant: Temperature, water

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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. None 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. None of the 3 annual maximum samples exceeded the 21.0°C steelhead annual maximum temperature water quality objective and this does not exceed the allowable frequency listed in Table 3.2 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.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses."

Evaluation Guideline: The guideline used was from Sullivan et al (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range

	of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the Annual Maximum (instantaneous maximum observed during the summer) upper threshold criterion for steelhead trout as 21.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the Annual Maximum of 21.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	Temperature measurements were taken over the span of 3 years (1999, 2000 and 2003) from June to September at a monitoring station along Flea Valley Creek. Temperature monitoring was continuous using a digital thermograph. Based on the data provided, the monitoring station did not exceed the 21.0°C annual maximum criterion for steelhead during the sampling period from 1999 to 2003. For each year monitored, there were 4 hourly maximum temperature values, one for each month (June to September). Based on each set of values the annual maximum temperature for each year was determined. The total number of annual maximum values is 3. Of this total, none of the annual maximum temperature values exceeded the 21.0°C criteria (PG&E, 2003a).
Spatial Representation:	There was 1 sampling station on Flea Valley Creek, which is part of the watershed for the North Fork of the Feather River.
Temporal Representation:	Samples were taken during 1999, 2000 and 2003 from either June to September. For each station, temperature monitoring was continuous.
Data Quality Assessment:	High Quality - automatic data loggers, several years/water year types. Quality assurance well documented.

Region 5

Water Segment: Fresno River (Above Hensley Reservoir to confl w Nelder Creek and Lewis Fork)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 a single line of evidence is necessary to assess listing status.

Two lines of evidence are available in the administrative record to assess this pollutant. Three studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Line of Evidence	Population/Community Degradation
Beneficial Use	WA - Warm Freshwater Habitat

Non-Numeric Objective:	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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	California roach are almost completely gone from the upper San Joaquin, Fresno, and Chowchilla river systems in central California, apparently from predation from green sunfish. Green sunfish invade small intermittent streams favoured by both species, where they can eliminate the roach when the two become trapped together in isolated ponds during summer (Moyle, P.B. 1976).

Region 5

Water Segment: Fresno River (below Hensley Reservoir)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. One line of evidence is available in the administrative record to assess this pollutant. Three studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Line of Evidence	Population/Community Degradation
Beneficial Use	WA - Warm Freshwater Habitat

Non-Numeric Objective:	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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	California roach are almost completely gone from the upper San Joaquin, Fresno, and Chowchilla river systems in central California, apparently from predation from green sunfish. Green sunfish invade small intermittent streams favoured by both species, where they can eliminate the roach when the two become trapped together in isolated ponds during summer (Moyle, P.B. 1976).

Region 5

Water Segment:	Greenhorn Creek (Nevada Co)
Pollutant:	Aluminum
Decision:	Do Not List
Weight of Evidence:	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. A insufficient number of samples exceed the chemical constituents water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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. One of 10 samples exceeded the Drinking Water Secondary MCL criterion 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The chemical constituent objectives in Table III-1 apply to the water bodies specified. Metal objectives in the table are dissolved concentrations. At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22

	of the California Code of Regulations, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 4449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449.
Evaluation Guideline:	Drinking Water Secondary MCL (0.2 mg/L).
Data Used to Assess Water Quality:	One of 10 samples exceeded the Secondary MCL (USGS, 2004c).
Spatial Representation:	Samples were collected along Greenhorn Creek.
Temporal Representation:	Samples were collected in1999, 2000, and 2001.
Data Quality Assessment:	Data from USGS reports are considered of adequate quality per section 6.1.4 of the Policy.

Region 5

Water Segment: Greenhorn Creek (Nevada Co)

Pollutant: Chloride

Decision: Do Not List

Weight of Evidence: 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. None 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. None of the 43 samples exceeded the Drinking Water Secondary MCL for chloride (250 units) and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
3. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: AG - Agricultural Supply, CO - Cold Freshwater Habitat, MI - Fish Migration, MU - Municipal & Domestic, PO - Hydroelectric Power Generation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, SP - Fish Spawning, WI - Wildlife Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: 250 mg/L (ppm) Secondary MCL for Chloride (CCR, Title 22)

Data Used to Assess Water Quality: None of the 43 samples collected exceeded the secondary MCL for chloride (USGS, 2004c).

Spatial Representation:	Samples were collected from 22 sites.
Temporal Representation:	Samples were collected from March 1999 - December 2001.
Data Quality Assessment:	USGS National Field Manual for the Collection of Water-Quality Data.
QA/QC Equivalent:	Quality control samples were taken.

Region 5

Water Segment: Greenhorn Creek (Nevada Co)

Pollutant: Methylmercury

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for listing under section 3.5 of the Listing Policy. Under section 3.5 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. None of the samples exceeded the USEPA tissue criterion.

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. A methyl mercury water quality guideline is available that complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. None of 67 samples exceeded the criterion.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Tissue
Beneficial Use:	CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat
Matrix:	Tissue
Evaluation Guideline:	There is no applicable numerical guideline available to assess methylmercury in amphibian tissue.
Data Used to Assess Water Quality:	Sixty-eight frog tissue samples were collected from various sites in the Greenhorn Creek. However, there is no applicable guideline to determine mercury exceedance in the tissue samples (USGS, 2004c).
Spatial Representation:	Samples were collected from 17 sites in the creek.

Temporal Representation:	Samples were collected in late summer - early fall (8/12/99 - 10/16/01).
QA/QC Equivalent:	USGS Methods Manual

Region 5

Water Segment: Greenhorn Creek (Nevada Co)

Pollutant: Sulfates

Decision: Do Not List

Weight of Evidence: 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. None 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. None of 43 samples exceeded the Secondary MCL for Sulfate (CCR, Title 22) 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.

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

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	AG - Agricultural Supply, CO - Cold Freshwater Habitat, MU - Municipal & Domestic, PO - Hydroelectric Power Generation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	250 mg/L (ppm) Secondary MCL for Sulfate (CCR, Title 22)
Data Used to Assess Water Quality:	None of 43 samples exceeded the secondary MCL for sulfate (USGS, 2004c).

Spatial Representation:	Samples were collected from 22 sites.
Temporal Representation:	Sample were collected from March 1999 through December 2001.
Data Quality Assessment:	USGS National Field Manual for the Collection of Water-Quality Data.
QA/QC Equivalent:	Quality control samples were presented with the data.

Region 5

Water Segment: Kaweah River, East Fork (Confl w Kaweah River to Confl w Horse Creek)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kaweah River, Lower (includes St Johns River)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kaweah River, Marble Fork (Confl w Kaweah River Middle Fork to Marble Falls)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kaweah River, Middle Fork (Confl w Kaweah River East Fork to Dome Creek)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kaweah River, South Fork (Confl w Kaweah River to Fork Drive)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kaweah River, Upper (from North Fork to Lake Kaweah)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kings River, Main Fork

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kings River, Middle Fork (Confl w Main Fork to confl w Silver Creek)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kings River, South Fork (Confl w Main Fork to confl w Grizzly Creek)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Kings River, Upper North Fork

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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) Three studies were conducted, two in 1969-1971 and one in 1986.
2) Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3) Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4) The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5) Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6) It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7) Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment:	Lindo Channel
Pollutant:	Diazinon
Decision:	Do Not List
Weight of Evidence:	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. One sample exceeded the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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. One of 2 samples exceeded the diazinon 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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.
Evaluation Guideline:	CDFG Hazard Assessment Criterion is 0.16 µg/L (Siepman & Finlayson, 2000; Finlayson, 2004).
Data Used to Assess Water Quality:	Two samples were collected using GC/ECD/TSD technology. One exceeded the guideline (Dileanis, 2003a).

Spatial Representation:	Samples were collected at Lindo Creek at Chico.
Temporal Representation:	Samples were collected on two consecutive days in Feb 2001.
Data Quality Assessment:	Data from USGS reports are considered of adequate quality per section 6.1.4 of the Policy.

Region 5

Water Segment:	Lower Bear River Reservoir
Pollutant:	Oxygen, Dissolved
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. Three lines of evidence are available in the administrative record to assess this pollutant. A few 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 numeric water quality objective for dissolved oxygen was not exceeded. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Three of 22 samples exceeded the Basin Plan dissolved oxygen water quality objective (below 7.0 mg/L), and these do not exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Two out of 8 samples at this location had a DO concentration below 7.0 mg/L (PG&E, 2003b).
Spatial Representation:	Lower Bear River Reservoir sample collected near the dam from the epilimnion (Top). Latitude (38° 32.365 N); Longitude (120° 15.162 W).
Temporal Representation:	Samples taken monthly* from 4/12/2002 to 12/11/2002. *(No sample taken 11/13/2002 due to snow storm).
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 6 samples at this location had a DO concentration below 7.0 mg/L (PG&E, 2003b).
Spatial Representation:	Lower Bear River Reservoir sample collected near the dam from the epilimnion (Middle). Latitude (38° 32.365 N); Longitude (120° 15.162 W).
Temporal Representation:	Samples taken monthly from 5/16/2002 to 10/23/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional

	Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	One out of 8 samples at this location had a DO concentration below 7.0 mg/L (PG&E, 2003b).
Spatial Representation:	Lower Bear River Reservoir sample collected near the dam from the hypolimnion (Bottom). Latitude (38° 32.365 N); Longitude (120° 15.162 W).
Temporal Representation:	Samples taken monthly* from 4/23/2002 to 12/11/2002. *(No sample taken on 11/13/02 due to snow storm).
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment: Lower Bear River Reservoir

Pollutant: pH

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under sections 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status.

One line of evidence are available in the administrative record to assess this pollutant. Based on section 3.2 the site does not meet the Basin Plan water quality objective for pH in a few instances.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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. Three of 13 samples exceeded the Basin Plan water quality objective for pH, and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	"pH is not to be depressed below 6.5"- From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	pH was measured at the top, middle, and bottom of the Lower Bear Reservoir. 3 (of 13) average pH measurements were below the Basin Plan pH criterion (6.5) (PG&E, 2003b).
Spatial Representation:	Lower Bear River Reservoir sample collected near the dam from the

	epilimnion (Top). Latitude (38° 32.365 N); Longitude (120° 15.162 W).
Temporal Representation:	Samples taken monthly* from 4/12/2002 to 12/11/2002. *(No sample taken 11/13/2002 due to snow storm).
Data Quality Assessment:	Well documented QA/QC including report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment: Merced River, Lower (McSwain Reservoir to San Joaquin River)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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. Three studies were conducted, two in 1969-1971 and one in 1986.
2. Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3. Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4. The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5. Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6. It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Merced River, Upper

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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. Three studies were conducted, two in 1969-1971 and one in 1986.
2. Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3. Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4. The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5. Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6. It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Mill Creek (Butte County)

Pollutant: Temperature, water

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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. None 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. None of the 3 annual maximum values exceeded the 21.0°C steelhead annual maximum temperature water quality objective and this does not exceed the allowable frequency listed in Table 3.2 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.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses."

Evaluation Guideline: The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range

	of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the Annual Maximum (instantaneous maximum observed during the summer) upper threshold criterion for steelhead trout as 21.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the Annual Maximum of 21.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	Temperature measurements were taken over the span of 3 years (1999, 2000 and 2003) from June to September at a monitoring station along Mill Creek. Temperature monitoring was continuous using a digital thermograph. Based on the data provided, the monitoring station did not exceed the 21.0°C annual maximum criterion for steelhead during the sampling period from 1999 to 2003. For each year monitored, there were 4 hourly maximum temperature values, one for each month (June to September). Based on each set of values the annual maximum temperature for each year was determined. There were a total of 3 annual maximum values. Of this total, none of the annual maximum temperature values exceeded the 21.0°C criteria (PG&E, 2003a).
Spatial Representation:	There was 1 sampling station on Mill Creek in Butte County, which is part of the watershed for the North Fork of the Feather River.
Temporal Representation:	Samples were taken during 1999, 2000 and 2003 from either June to September. For each station, temperature monitoring was continuous.
Data Quality Assessment:	High Quality - automatic data loggers, several years/water year types. Quality assurance well documented.

Region 5

Water Segment: Mokelumne River, North Fork

Pollutant: Fecal Coliform

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.3 of the Listing Policy. Under section 3.3 a single line of evidence is necessary to assess listing status.

Four lines of evidence are available in the administrative record to assess this pollutant. None of the measurements exceed the water quality standards.

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. None of the 59 samples exceeded the bacteria water quality objective and this does not exceed the allowable frequency listed in Table 3.2 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.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat, R1 - Water Contact Recreation

Matrix: Water

Water Quality Objective/ Water Quality Criterion: In waters designated for contact recreation (REC 1), the fecal coliform concentration based on a minimum of not less than 5 samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than 10 percent of the total number of samples during any 30-day period exceed 400/100 ml - (Central Valley RWQCBs Water Quality Control Plan [Basin Plan]).

Data Used to Assess Water Quality:	Zero out of 15 samples at this location exceeded the standard for fecal coliform. Historical Water Quality Results for Analytical Laboratory Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A2] (PG&E, 2003b).
Spatial Representation:	Location: NFMR below Electra Diversion Dam (NFMR5*). Rationale: Defines water quality in the NFMR at the head of the reach between Electra Diversion Dam and Electra Powerhouse, and is representative of water quality in the reach between Tiger Creek Afterbay Dam and Electra Diversion Dam.
Temporal Representation:	Samples taken between 7/26/2000 and 5/14/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, R1 - Water Contact Recreation
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	In waters designated for contact recreation (REC 1), the fecal coliform concentration based on a minimum of not less than 5 samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than 10 percent of the total number of samples during any 30-day period exceed 400/100 ml - (Central Valley RWQCBs Water Quality Control Plan [Basin Plan]).
Data Used to Assess Water Quality:	Zero out of 15 samples at this location exceeded the standard for fecal coliform. Historical Water Quality Results for Analytical Laboratory Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A2] (PG&E, 2003ab).
Spatial Representation:	Location: Mokelumne River above Electra Powerhouse (MR1*). Rationale: Defines water quality in the Mokelumne River at the end of the reach between Electra Diversion Dam and Electra Powerhouse.
Temporal Representation:	Sample taken between 7/26/2000 and 5/14/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, R1 - Water Contact Recreation
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	In waters designated for contact recreation (REC 1), the fecal coliform concentration based on a minimum of not less than 5 samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor

	shall more than 10 percent of the total number of samples during any 30-day period exceed 400/100 ml - (Central Valley RWQCBs Water Quality Control Plan [Basin Plan]).
Data Used to Assess Water Quality:	Zero out of 14 samples at this location exceeded the standard for fecal coliform. Historical Water Quality Results for Analytical Laboratory Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A2] (PG&E, 2003b).
Spatial Representation:	Location: NFMR below Salt Springs Reservoir Dam (NFMR2*). Rationale: Defines water quality in the NFMR at the head of the reach between Salt Springs Reservoir Dam and Tiger Creek Afterbay.
Temporal Representation:	Samples taken between 7/26/2000 and 5/14/2002 (none more than 2 months apart).
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, R1 - Water Contact Recreation
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	In waters designated for contact recreation (REC 1), the fecal coliform concentration based on a minimum of not less than 5 samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than 10 percent of the total number of samples during any 30-day period exceed 400/100 ml - (Central Valley RWQCBs Water Quality Control Plan [Basin Plan]).
Data Used to Assess Water Quality:	Zero out of 15 samples at this location exceeded the standard for fecal coliform. Historical Water Quality Results for Analytical Laboratory Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A2] (PG&E, 2003b).
Spatial Representation:	Location: NFMR above Tiger Creek Afterbay at Licensee gage M-38 (NMFR3*). Rationale: Defines water quality in the NFMR at the end of the reach between Salt Springs Reservoir Dam and Tiger Creek Afterbay.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment:	Mokelumne River, North Fork
Pollutant:	Oxygen, Dissolved
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. One sample exceeds 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 88 samples exceeded the dissolved oxygen water quality objective and this does not exceed the allowable frequency listed in Table 3.2 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 21 samples at this location had a DO concentration below 7.0 mg/L. Year 2003 and Historical Water Quality Results for In Situ Measurements

	PG& E Company Mokelumne River Project (FERC 137) [Table A1] (PG&E, 2003b).
Spatial Representation:	Location: NFMR below Salt Springs Reservoir Dam (NFMR2*). Rationale: Defines water quality in the NFMR at the head of the reach between Salt Springs Reservoir Dam and Tiger Creek Afterbay.
Temporal Representation:	Samples taken between 7/26/2000 and 9/10/2003 (none more than 2 months apart).
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	One out of 22 samples at this location had a DO concentration below 7.0 mg/L. Year 2003 and Historical Water Quality Results for In Situ Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A1] (PG&E, 2003b).
Spatial Representation:	Location: NFMR above Tiger Creek Afterbay at Licensee gage M-38 (NMFR3*). Rationale: Defines water quality in the NFMR at the end of the reach between Salt Springs Reservoir Dam and Tiger Creek Afterbay
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD). From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 21 samples at this location had a DO concentration below 7.0 mg/L. Year 2003 and Historical Water Quality Results for In Situ Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A1] (PG&E, 2003b).
Spatial Representation:	Location: NFMR below Electra Diversion Dam (NFMR5*).

	Rationale: Defines water quality in the NFMR at the head of the reach between Electra Diversion Dam and Electra Powerhouse, and is representative of water quality in the reach between Tiger Creek Afterbay Dam and Electra Diversion Dam.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 24 samples at this location had a DO concentration below 7.0 mg/L. Year 2003 and Historical Water Quality Results for In Situ Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A1] (PG&E, 2003b).
Spatial Representation:	Location: Mokelumne River above Electra Powerhouse (MR1*). Rationale: Defines water quality in the Mokelumne River at the end of the reach between Electra Diversion Dam and Electra Powerhouse.
Temporal Representation:	Sample taken between 7/26/2000 and 9/11/2003.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment:	Mokelumne River, North Fork
Pollutant:	Temperature, water
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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 12 values exceeded the water quality criterion. 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 12 annual maximum values were in exceedance of the 21.0°C steelhead annual maximum criterion and this does not exceed the allowable frequency listed in Table 3.2 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. - Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes

	reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the Annual Maximum (instantaneous maximum observed during the summer) upper threshold criterion for steelhead trout as 21.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the Annual Maximum of 21.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	Temperature measurements were taken at 3 monitoring stations (NFMR2, NFMR3, and NFMR5) along the North Fork of the Mokelumne River. For each station there were a total of 4 annual maximum temperature values. There was a value for each sampling year, 2000 to 2003. Based on this data, cumulatively for all 3 stations, there were a total of 12 annual maximum measurements of which 3 were in exceedance of the 21.0°C steelhead criteria (PG&E, 2003b).
Spatial Representation:	The three sampling stations (NFMR2, NFMR3, and NFMR5) were located on the North Fork of the Mokelumne River. Specific locations were below Salt Springs Reservoir Dam, above Tiger Creek Afterbay at Licensee gage M-38, and below Electra Diversion Dam.
Temporal Representation:	Temperature measurements were taken during years 2000 to 2003.
Data Quality Assessment:	QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment: Mokelumne River, North Fork

Pollutant: Total Nitrogen as N

Decision: Do Not List

Weight of Evidence: 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.

Four lines of evidence are available in the administrative record to assess this pollutant. None of the measurements exceed the MCL.

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 MCL standard for Total Nitrate as N used complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. None of the 59 samples exceeded the MCL, and these do not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat, MU - Municipal & Domestic

Matrix: Water

Water Quality Objective/ Water Quality Criterion: Ten mg/L (MCLs/Title 22 Table 6444-A Primary).

Data Used to Assess Water Quality: Zero out of 15 samples at this location exceed the standard for Total Nitrate as N.

Historical Water Quality Results for Analytical Laboratory Measurements

	PG& E Company Mokelumne River Project (FERC 137) [Table A2] (PG&E, 2003b).
Spatial Representation:	Location: NFMR below Electra Diversion Dam (NFMR5*).
	Rationale: Defines water quality in the NFMR at the head of the reach between Electra Diversion Dam and Electra Powerhouse, and is representative of water quality in the reach between Tiger Creek Afterbay Dam and Electra Diversion Dam.
Temporal Representation:	Samples taken between 3/14/2001 and 5/14/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Ten mg/L (MCLs/Title 22 Table 6444-A Primary).
Data Used to Assess Water Quality:	Zero out of 15 samples at this location exceed the standard for Total Nitrate as N.
	Historical Water Quality Results for Analytical Laboratory Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A2] (PG&E, 2003b).
Spatial Representation:	Location: Mokelumne River above Electra Powerhouse (MR1*).
	Rationale: Defines water quality in the Mokelumne River at the end of the reach between Electra Diversion Dam and Electra Powerhouse.
Temporal Representation:	Sample taken between 3/14/2001 and 5/14/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Ten mg/L (MCLs/Title 22 Table 6444-A Primary).
Data Used to Assess Water Quality:	Zero out of 14 samples at this location exceed the standard for Total Nitrate as N.
	Historical Water Quality Results for Analytical Laboratory Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A2] (PG&E, 2003b).

Spatial Representation:	Location: NFMR below Salt Springs Reservoir Dam (NFMR2*). Rationale: Defines water quality in the NFMR at the head of the reach between Salt Springs Reservoir Dam and Tiger Creek Afterbay
Temporal Representation:	Samples taken between 3/14/2001 and 5/14/2002 (none more than 2 months apart).
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Ten mg/L (MCLs/Title 22 Table 6444-A Primary).
Data Used to Assess Water Quality:	Zero out of 15 samples at this location exceed the standard for Total Nitrate as N. Historical Water Quality Results for Analytical Laboratory Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A2] (PG&E, 2003b).
Spatial Representation:	Location: NFMR above Tiger Creek Afterbay at Licensee gage M-38 (NMFR3*). Rationale: Defines water quality in the NFMR at the end of the reach between Salt Springs Reservoir Dam and Tiger Creek Afterbay.
Temporal Representation:	Samples collected between 3/14/2001 and 5/14/2001.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment: Mokelumne River, North Fork

Pollutant: pH

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status.

Four lines of evidence are available in the administrative record to assess this pollutant. None 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. None of the 24 samples exceeded the pH water quality objective and this does not exceed the allowable frequency listed in Table 3.2 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.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: "pH is not to be depressed below 6.5"- From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).

Data Used to Assess Water Quality: Zero out of 24 samples at this location had a pH below 6.5.

Year 2003 and Historical Water Quality Results for In Situ Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A1] (PG&E, 2003b).

Spatial Representation:	Location: Mokelumne River above Electra Powerhouse. Rationale: Defines water quality in the Mokelumne River at the end of the reach between Electra Diversion Dam and Electra Powerhouse.
Temporal Representation:	Samples taken between 7/26/200 and 9/11/2003.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	"pH is not to be depressed below 6.5"- From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 21 samples had a pH below 6.5. Year 2003 and Historical Water Quality Results for In Situ Measurements PG& E Company Mokelumne River Project (FERC 137) [Table A1] (PG&E, 2003b).
Spatial Representation:	Location: NFMR below Salt Springs Reservoir Dam. Rationale: Defines water quality in the NFMR at the head of the reach between Salt Springs Reservoir Dam and Tiger Creek Afterbay.
Temporal Representation:	Samples taken between 7/26/2000 and 9/10/2003 (none more than 2 months apart).
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	"pH is not to be depressed below 6.5"- From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 22 samples at this location had a pH below 6.5. Year 2003 and Historical Water Quality Results for In Situ Measurements PG& E Companys Mokelumne River Project (FERC 137) [Table A1] (PG&E, 2003b).
Spatial Representation:	Location: NFMR above Tiger Creek Afterbay at Licensee gage M-38. Rationale: Defines water quality in the NFMR at the end of the reach between Salt Springs Reservoir Dam and Tiger Creek Afterbay.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	"pH is not to be depressed below 6.5"- From the Central Valley Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	Zero out of 21 samples at this location had a pH below 6.5. Year 2003 and Historical Water Quality Results for In Situ Measurements PG& E Company Mokelumne River Project (FERC 137)[Table A1] (PG&E, 2003b).
Spatial Representation:	Location: NFMR below Electra Diversion Dam. Rationale: Defines water quality in the NFMR at the head of the reach between Electra Diversion Dam and Electra Powerhouse, and is representative of water quality in the reach between Tiger Creek Afterbay Dam and Electra Diversion Dam.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment: Mokelumne River, Upper

Pollutant: Temperature, water

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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. All four samples exceed the water quality criterion.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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 does not satisfy the data quantity requirements of section 6.1.5 of the Policy.
3. Out of all four annual maximum values, all four were in exceedance of the 21.0°C steelhead annual maximum criterion. However the number of samples is in sufficient to determine if the water quality objective is being met or exceeded. More data is needed to determine if the water quality objective is exceeded.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB 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 being met or exceeded.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. - Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).

Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the Annual Maximum (instantaneous maximum observed during the summer) upper threshold criterion for steelhead trout as 21.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the Annual Maximum of 21.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	Temperature measurements were taken at 1 monitoring station (MR1) along the Mokelumne River. For this station there were a total of 4 annual maximum temperature values, one for each sampling year, 2000 to 2003. Based on this data, there were a total of 4 annual maximum measurements of which all 4 were in exceedance of the 21.0°C steelhead criteria (PG&E, 2003b).
Spatial Representation:	The monitoring station (MR1) was located along the Mokelumne River just upstream of the Electra Powerhouse and downstream of the Ponderosa Bridge.
Temporal Representation:	Temperature measurements were taken during years 2000 to 2003.
Data Quality Assessment:	QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment:	Mormon Slough (from Stockton Diverting Canal to Bellota Weir--Calaveras River)
Pollutant:	Methyl Tertiary-Butyl Ether (MTBE)
Decision:	Do Not List
Weight of Evidence:	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. One sample 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. One of 2 samples exceeded the Primary MCLs Title 22 Table 6444-A 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Primary MCLs Title 22 Table 6444-A
Evaluation Guideline:	Primary MCL - 0.013 ppm
Data Used to Assess Water Quality:	Two samples were collected; 1 sample exceeded the Primary MCL Objective (Calaveras River Baseline Water Quality Sampling Project, 2004)

Spatial Representation:	Samples were taken at the following site: L-CAL-1.
Temporal Representation:	Samples were collected on 5/29/03 and 9/1/03.
Data Quality Assessment:	Data is supported by a Quality Assurance Project Plan (QAPP) pursuant to the requirements of 40 CFR 31.45 and are acceptable for use in developing the section 303(d) list.

Region 5

Water Segment:	Oroville, Lake
Pollutant:	Aluminum
Decision:	Do Not List
Weight of Evidence:	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. A small portion 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. Thirty-nine of 651samples exceeded the chemical constituent water quality 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, IN - Industrial Service Supply, MU - Municipal & Domestic, PO - Hydroelectric Power Generation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	-N/A
Water Quality Objective/ Water Quality Criterion:	0.2 ppm secondary MCL (CCR, Title 22).
Data Used to Assess Water Quality:	Thirty-nine out of 651 samples exceeded the MCL criteria.

Region 5

Water Segment:	Rattlesnake Creek (at confluence w Mokelumne River, N Fork)
Pollutant:	Copper
Decision:	Do Not List
Weight of Evidence:	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. None 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. None of 4 samples exceeded the hardness based criteria from USEPA (CTR) for freshwater acute (CMC) and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy. 3. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Hardness based criteria from USEPA (CTR) for freshwater acute (CMC).
Data Used to Assess Water Quality:	Zero out of 4 samples exceeded the standard for copper at this location (PG&E, 2003b).
Spatial Representation:	Rattlesnake Creek at the Mouth. Latitude (38° 31.089 N);

	Longitude (120° 16.087 W).
Temporal Representation:	Samples taken between 8/29/2002 and 12/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment: Sacramento River (Red Bluff to Knights Landing)

Pollutant: Chlorpyrifos

Decision: Do Not List

Weight of Evidence: 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. None of the measurements exceed the water quality guideline.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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 CDFG criteria used complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. None of the 36 samples obtained from 1998, 1999 and 2000 from this site exceeded the CDFG criteria.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB 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 exceeded.

Lines of Evidence:

Line of Evidence Pollutant-Water

Beneficial Use CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat

Non-Numeric Objective: 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. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the

	Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 14 ng/L 4-day average and 25 ng/L 1-hour average.
Data Used to Assess Water Quality:	Data was obtained from the USGS NWISweb data, a 1998, 1999 and 2000 California Department of Pesticide Regulation SWDB study, SRWP 1998-2000 database. None of 36 samples exceeded the CDFG criteria. Some of the concentrations were cited as less than values and as such could not be used in this assessment (USGS, 2005; LWA, 2002b).
Spatial Representation:	Samples were taken from the following locations on the Sacramento River: Colusa, Hamilton, the Colusa Drain and Bryte.
Temporal Representation:	Samples were taken from 1996 - 2001.

Region 5

Water Segment:	Sacramento River (Red Bluff to Knights Landing)
Pollutant:	Diazinon
Decision:	Do Not List
Weight of Evidence:	Two lines of evidence are available in the administrative record to assess this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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 CDFG criteria used complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Six of 179 samples exceeded the CDFG criteria and these do not exceed the allowable frequency listed in Table 3.1 of the Listing Policy. Additionally, when the chronic criteria could be applied, 2 out of 20 data set averages (4-day) exceeded the chronic criteria. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15. Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies (see State Water Resources Control Board Resolution No. 68-16 and 40 C.F.R. Section 131.12). Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. A trend in declining water quality has not been established per the Policy in section 3.1.10.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 0.16 µg/L 1-hour average (Siepman & Finlayson, 2000; Finlayson, 2004).
Data Used to Assess Water Quality:	None of the 13 samples exceeded the CDFG criteria (Spector et al., 2004).
Spatial Representation:	All samples were taken at the Sacramento River at Colusa
Temporal Representation:	Two storm events were sampled for the 2004 TMDL project in the Sacramento River Basin. For storm 1 sampling was conducted from 28 January to 3 February. For storm 2 the sampling period began on 16 February and extended until 21 February.
Data Quality Assessment:	Data from CDFA are considered of adequate quality.

Line of Evidence	Pollutant-Water
Beneficial Use	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Non-Numeric Objective:	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. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.

Evaluation Guideline:	CDFG Hazard Assessment Criteria - 0.16 µg/L 1-hour average (acute), 0.10 µg/L 4-day average (chronic) (Siepman & Finlayson, 2000; Finlayson, 2004).
Data Used to Assess Water Quality:	There were 181 samples total but 15 were considered to be of "questionable" quality and therefore were not used for this assessment. Of the remaining 166 samples, 6 exceeded the acute criteria. When the chronic criteria could be applied, 2 out of 20 data set averages (4-day) exceeded the chronic criteria (Dileanis et al., 2002; Dileanis, 2003a; Dileanis, 2003b; Holmes et al., 2000; LWA, 2002b).
Spatial Representation:	Samples were taken from the following locations on the Sacramento River: at Bend Ferry Rd Bridge, Butte City, Colusa, Hamilton City, Vina and the Colusa Drain.
Temporal Representation:	Samples were taken from 1994 - 2001.

Region 5

Water Segment: Sacramento River (Knights Landing to the Delta)

Pollutant: Chlorpyrifos

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under sections 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 are available in the administrative record to assess this pollutant. None of the measurements exceed the chlorpyrifos guideline.

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 CDFG criteria used complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. None of 193 samples exceeded the guideline and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality 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.

Evaluation Guideline: CDFG Hazard Assessment Criteria - 14 ng/L 4-day average and 25 ng/L 1-hour average.

Data Used to Assess Water Quality:	Data was obtained from the USGS NWISweb data, CMP database, two 1998, a 1999 and a 2000 California Department of Pesticide Regulation SWDB study, SRWP 1998-2000 database. None of the 193 samples from this site exceeded the CDFG guideline. Some of the concentrations were cited as less than values and as such could not be used in this assessment (USGS, 2005; LWA, 2002a; LWA, 2002b; Nordmark, 1998; Nordmark, 1999; Nordmark, 2000).
Spatial Representation:	Samples were taken at the following locations on the Sacramento River: Alamar, Freeport, Bryte, and Sacramento.
Temporal Representation:	Samples were taken from 1996 - 2002. Two samples were included from 1994 and one sample from 1995.
Data Quality Assessment:	Data from USGS reports are considered of adequate quality per section 6.1.4 of the Policy. Data from the Sacramento Coordinated Monitoring Program (CMP) Database and the Sacramento River Watershed Program (SRWP) Waters Quality Database (Larry Walker Associates, April 2002) are considered adequate.

Region 5

Water Segment: Sacramento Slough

Pollutant: Chlorpyrifos

Decision: Do Not List

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

One lines of evidence are available in the administrative record to assess this pollutant. None of the measurements exceeded the guideline.

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 CDFG criteria used complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. None of the 17 samples exceeded the CDFG criteria, and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies (see State Water Resources Control Board Resolution No. 68-16 and 40 CFR section 131.12).

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. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 14 ng/L 4-day average and 25 ng/L 1-hour average.
Data Used to Assess Water Quality:	Seven sites were monitored in the Sacramento River Basin (samples here were recorded from Sacramento Slough). Sampling frequency for each storm event was one sample/day was taken for 7 days. Isokinetic, depth integrated water samples were collected at 6-10 equally spaced points across the channel width with a USGS D-77 sampler using the equal-width-increment method (EWI). Samples were collected from a boat at Sacramento Slough. Seventeen samples were taken; none exceeded the CDFG criteria (USGS, 2005; LWA, 2002b).
Spatial Representation:	On 2 and 3 February 2004, a single grab sample was collected from the bank. On 4 February and 20 February samples collected were representative of an integrated grab sample. On 18, 21 and 23 February grab samples were collected from the bank at nearby Reclamation Slough - a tributary of Sacramento Slough.
Temporal Representation:	Two storm events were sampled for the 2004 TMDL project in the Sacramento River Basin. The first storm event (Storm 1) was the period 28 January to 6 February 2004. The second storm event (Storm 2) was the period 15-23 February, 2004. For storm 1 sampling was conducted from 28 January to 3 February at most sites, and as late as 6 February at the Tower Bridge at Sacramento site. For storm 2 the sampling period began on 16 February and extended until 22 February.
Data Quality Assessment:	Sample quality control was measured through collection of sequential duplicates (n=8), blanks (n=5) and matrix spikes (n=5) (Table 3). The relative percent difference (RPD) between environmental and duplicate sample concentrations of chlorpyrifos ranged from 0-104%. The RPD's between environmental and duplicate sample concentrations of diazinon ranged from 0-40%.

Region 5

Water Segment: San Joaquin River (Millerton Lake to Mammoth Pool)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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. Three studies were conducted, two in 1969-1971 and one in 1986.
2. Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3. Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4. The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5. Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6. It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Stanislaus River, Upper (New Melones Res to Tulloch Res)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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. Three studies were conducted, two in 1969-1971 and one in 1986.
2. Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3. Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4. The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5. Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6. It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment:	Stony Creek
Pollutant:	Diazinon
Decision:	Do Not List
Weight of Evidence:	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. None 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.Two samples were taken; one was non-detect. None of the concentrations from the samples from this site exceeded the CDFG criteria 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Line of Evidence	Pollutant-Water
Beneficial Use	CO - Cold Freshwater Habitat
Non-Numeric Objective:	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. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the

	Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 0.10 µg/L 4-day average and 0.16 µg/L 1-hour average. CDFG Hazard Assessment Criteria - 0.10 µg/L 4-day average and 0.16 µg/L 1-hour average (Siepman & Finlayson, 2000; Finlayson, 2004).
Data Used to Assess Water Quality:	Two samples were taken; one measurement was non-detect. Data was analyzed using GC/ECD/TSD. None of the concentrations from the samples from this site exceeded the CDFG criteria (Dileanis, 2003a).
Spatial Representation:	Samples were taken at Stony Creek near the mouth.
Temporal Representation:	Samples were taken in February 2001, on two consecutive days.

Region 5

Water Segment:	Sugar Pine Creek (tributary to Lower Bear River Reservoir)
Pollutant:	Oxygen, Dissolved
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 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. A single sample exceeds the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is insufficient 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. Only one of 4 samples exceeded the Basin Plan water quality objective for dissolved oxygen. More data is needed to determine if the water quality objective is exceeded. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Dissolved Oxygen (DO) concentrations shall not be reduced below 7.0 mg/L (for waters designated as COLD)-From the Central Valley Regional Water Quality Control Boards Water Quality Control Plan (Basin Plan).
Data Used to Assess Water Quality:	One out of 4 samples had a DO concentration below 7.0 mg/L (PG&E, 2003b).
Spatial Representation:	Small tributary flow from snowmelt near Sugar Pine creek, northwest

	shore of Lower Bear River Reservoir. Latitude (38° 33.21 N); Longitude (120° 14.36 W).
Temporal Representation:	Samples taken from 4/23/2002 to 6/11/2002.
Data Quality Assessment:	Well documented QA/QC including 174 page report on Certified Analytical Reports and Chain-of-Custody Documentation.

Region 5

Water Segment: Tule River, Lower

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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. Data from a 1969-71 study was compared to previous data from 1898, 1934, and 1940-41. The comparison showed that as non-native species increased over time, the number of native species decreased.

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. This study was conducted from 1969-1971 at 167 locations.
2. Baseline data was from studies conducted in 1898, 1934, and 1940-1941.
3. Data was compared over time to show presence or not of non-native and native fish species.
4. In a 1898 survey: 9 native species were collected, 0 non-native species were collected; in a 1934 survey: 10 native species were collected and 4 non-native species were collected; in a 1940-1941 survey: 13 native species were collected and 8 non-native species were collected; and in a 1969-71 survey (this study): 6 native species were collected and 7 non-native species were collected. As the number of non-native fish species increased, the number of native fish species decreased over time.
5. It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
6. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Tule River, Upper (includes North,South, and Middle Forks)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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. Three studies were conducted, two in 1969-1971 and one in 1986.
2. Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3. Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4. The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5. Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6. It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment:	Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River)
Pollutant:	Chlorpyrifos
Decision:	Do Not List
Weight of Evidence:	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. One sample exceeds 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 14 samples exceeded the CDFG criteria 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.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	AG - Agricultural Supply, CO - Cold Freshwater Habitat, MU - Municipal & Domestic, PO - Hydroelectric Power Generation, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies (see State Water Resources Control Board Resolution No. 68-16 and 40 CFR section 131.12). 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. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Evaluation Guideline:	CDFG Hazard Assessment Criteria - 14 ng/L 4-day average and 25 ng/L 1-hour average.
Data Used to Assess Water Quality:	One sample exceeded the CDFG chronic and acute criteria (Starner et al., 2003).
Spatial Representation:	Samples were collected at Tuolumne River at Shiloh.
Temporal Representation:	Sampling began on July 2, 2002, and continued throughout the summer until September 30, 2002. Each site was sampled once per week.
Environmental Conditions:	At each sampling event, temperature, dissolved oxygen (DO), pH, and electrical conductivity (EC) were measured in situ at each sampling site. DO, EC and temperature were measured. The pH at the Tuolumne River site ranged from 6.96 to 8.4. Measured water temperature ranged from a low of 19.3 to a high of 26.7 ºC. DO and EC had ranges of 6.44 to 10.0 mg/L and 165 to 285 µS/cm, respectively.
Data Quality Assessment:	Quality Control (QC) for the chemical analysis portion of this study was conducted in accordance with Standard Operating Procedure QAQC001.00 (Segawa, 1995).

Region 5

Water Segment: Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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. Three studies were conducted, two in 1969-1971 and one in 1986.
2. Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3. Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4. The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5. Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6. It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.

Region 5

Water Segment: Tuolumne River, Upper (Don Pedro Res to Hetch Hetchy Reservoir)

Pollutant: Exotic Species

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.10 of the Listing Policy. Under section 3.10 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 studies, two in 1969-1971 and one in 1986 were used for this assessment, which showed an overall increase of native and non-native species over time.

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. Three studies were conducted, two in 1969-1971 and one in 1986.
2. Baseline data was taken from the 1969-1971 studies. All three studies sampled the same geographic area, with similar sampling sizes.
3. Rank abundance, Pearson product moment correlations, and principal components analysis were the statistical analyses employed during these studies.
4. The comparison showed a net increase of native and non-native species observed at all sampling sites. The data was based on the percentage of sites the species were collected at for each study.
5. Some native species were collected at more sites in 1986 than in 1969-71. Some non-native species were collected at more sites than in 1969-71. Eight native species increased in the watersheds they were observed from 1969-71 to 1986, while 5 native species decreased. Nine non-native species increased over time from 1969-71 to 1986, while 7 non-native species decreased.
6. It cannot be determined if the trend in water quality is expected to meet water standards by the next listing cycle.
7. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

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

Lines of Evidence:

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality 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. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. Taken from Region 5 Basin Plan, Page III-8.00, Water Quality Objectives.
Data Used to Assess Water Quality:	Two previous studies (conducted in 1969-71) (Moyle and Nichols, 1973; Moyle and Nichols, 1974) were used as baseline comparisons to a study conducted in 1986 (Brown and Moyle, 1993). Species percent collection data were the same for each baseline study at the sampling sites. The baseline studies and this study sampled the same geographic area, with similar sampling sizes. The baseline data was compared to the data collected in 1986. The comparison showed an overall net increase of native species observed at all sampling sites, as well as a net increase in non-native species. The data was based on the percentage of sites the species were collected at for each study. Overall, some native species were collected at more sites in 1986 (an increase in percent) than in the 1969-71 studies (Brown and Moyle, 1993). Some non-native species were collected at more sites (an increase in percent) than in the 1969-71 studies. Eight native species increased in the watersheds they were observed (collected at more sites over time) from 1969-71 to 1986, while 5 native species decreased (collected at less sites over time). Nine non-native species increased over time (collected at more sites over time) from 1969-71 to 1986, while 7 non-native species decreased (collected at less sites over time).
Spatial Representation:	Stanislaus, Tuolumne, Merced, Chowchilla, Fresno, San Joaquin, Kings, Kaweah, and Tule Rivers, between 90 and 1100 meters elevation.
Temporal Representation:	Baseline studies: 37 samples taken during the summer and autumn of 1969, 1970 and 1971 and 130 samples were taken from 7/27-9/4/1970. Another survey was conducted from Sept. 1985 to Sept. 1986 at 186 sites. Only 156 sites were used from this study for statistical analyses, (Brown and Moyle, 1993).
Environmental Conditions:	Changes in relative diversity and abundance of native species may also be driven by habitat alteration, flow changes, or hydromodification.
Data Quality Assessment:	Peer Reviewed Journal Articles.