

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

RESOLUTION NO. R5-2006-0061

AMENDMENT TO THE WATER QUALITY CONTROL PLAN
FOR
THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS

FOR
THE CONTROL OF DIAZINON AND CHLORPYRIFOS RUNOFF INTO THE
SACRAMENTO-SAN JOAQUIN DELTA

WHEREAS, the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) finds that:

1. In 1975 the Central Valley Water Board adopted the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan), which has been amended occasionally.
2. The Basin Plan may be amended in accordance with the California Water Code Section 13240, et seq.
3. Water Code section 13241 authorizes the Central Valley Water Board to establish water quality objectives and Water Code section 13242 sets forth the requirements for a program for implementation for achieving water quality objectives.
4. Water Code section 13243 authorizes the Central Valley Water Board to specify certain conditions or areas where the discharges of certain types of waste will not be permitted.
5. The Sacramento-San Joaquin Delta Waterways have been identified under the federal Clean Water Act Section 303(d) as impaired due to elevated concentrations of diazinon and chlorpyrifos.
6. The Bay Protection Program Clean-up Plan for the Delta, which has been approved by the Central Valley Water Board and State Water Resources Control Board, includes requirements to develop a Basin Plan Amendment for diazinon and chlorpyrifos in the Delta.
7. The Central Valley Water Board recognizes that the Basin Plan does not include numeric water quality objectives for diazinon and chlorpyrifos, nor a plan to reduce diazinon and chlorpyrifos concentrations in the Delta Waterways; therefore, a Basin Plan Amendment is appropriate.

8. The proposed amendment modifies Basin Plan Chapter III (Water Quality Objectives) to establish site specific number objectives for diazinon and chlorpyrifos in the Delta Waterways.
9. The proposed amendment identifies the requirement to meet the additive formula already in Basin Plan Chapter IV (Implementation), for the additive toxicity of diazinon and chlorpyrifos.
10. The proposed amendment modifies Basin Plan Chapter IV (Implementation) to establish an implementation program to reduce pesticide runoff and diazinon and chlorpyrifos dischargers into the Delta Waterways, including the loading capacity and allocations requirements of a Total Maximum Daily Load (TMDL).
11. The proposed amendment modifies Basin Plan Chapter V (Surveillance and Monitoring) to include monitoring requirements to allow the Central Valley Water Board to assess progress in reducing diazinon and chlorpyrifos discharges and preventing toxicity from pesticide runoff.
12. The proposed amendment requires dischargers of diazinon and chlorpyrifos to develop and implement a plan to reduce diazinon and chlorpyrifos levels in the Delta Waterways.
13. The Central Valley Water Board recognizes that the Basin Plan does not specify which waterbodies or reaches are referred to in the Basin Plan's discussion of Delta Waterways.
14. The proposed amendment adds an appendix to the Basin Plan which identifies specific waterbodies and reaches of waterbodies within the legal boundary of the Delta as Delta Waterways to which the proposed water quality objectives, loading capacity and allocations will apply.
15. The Central Valley Water Board has considered the factors set forth in Water Code section 13241, including economic considerations, in developing this proposed amendment. The costs of implementing the proposed amendment are reasonable relative to the water quality benefits to be derived from implementing the proposed amendment, considering the size of the geographic area affected by the amendment, and that the estimated costs of compliance with this amendment duplicate to some extent the costs of complying with existing Basin Plan water quality objectives, the Irrigated Lands Conditional Waiver, and other pesticide use regulations from the Department of Pesticide Regulation.

16. The proposed amendment includes an estimate of the cost of the proposed implementation program to agriculture and identifies potential sources of financing, as required by Water Code section 13141.
17. Central Valley Water Board staff developed a draft staff report and draft Basin Plan Amendment for external scientific peer review in February 2006 in accordance with Health and Safety Code Section 57004 and the draft final staff report and amendment have been changed to conform to the recommendations of the peer reviewers or staff has provided an explanation of why no change was made.
18. The Central Valley Water Board finds that the scientific portions of the Basin Plan Amendment are based on sound scientific knowledge, methods, and practices in accordance with Health and Safety Code Section 57004.
19. The Central Valley Water Board finds that the proposed amendment is consistent with the State Water Resources Control Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and the proposed amendment is consistent with the federal Antidegradation Policy (40 CFR part 131.12). The proposed amendment requires actions to be taken to implement management practices to ensure compliance with water quality objectives. Such actions are of maximum benefit to the people of the state. Reduction of discharges of diazinon and chlorpyrifos to the Delta Waterways is necessary to protect beneficial uses of the Delta Waterways. The proposed amendment will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies because the amendment is intended to result in compliance with water quality objectives. The actions to be taken are not expected to cause other impacts on water quality.
20. The regulatory action proposed meets the "Necessity" standard of the Administrative Procedures Act, Government Code, section 11353, subdivision (b).
21. The basin planning process has been certified as "functionally equivalent" to the California Environmental Quality Act requirements for preparing environmental documents as specified in Title 23 California Code of Regulations (23 CCR) Section 3782 and is, therefore, exempt from those requirements (Public Resources Code, Section 21000 et seq.).
22. The Central Valley Water Board staff held a scoping meeting on January 19, 2005 and a public workshop on April 27, 2006 to receive comments on

- the draft amendment and to identify any significant issues that must be considered.
23. Central Valley Water Board staff has prepared a draft amendment and a staff report dated April 2006.
 24. Central Valley Water Board staff completed an environmental checklist that concluded that the proposed amendment results in no potential for adverse effect, either individually or cumulatively, on wildlife or the environment.
 25. Central Valley Water Board staff has circulated a Notice of Public Hearing, Notice of Filing, a written staff report, and environmental checklist, and a draft proposed amendment to interested individuals and public agencies, included persons having special expertise with regard to the environmental effects involved with the proposed amendment, for review and comment in accordance with state and federal environmental regulations (23 CCR Section 3775, 40 CFR 25, and 40 CFR 131).
 26. The Central Valley Water Board held a public hearing on June 23, 2006, for the purpose of receiving testimony on the draft Basin Plan amendment. Notice of the public hearing was sent to all interested persons and published in accordance with California Water Code, section 13244.
 27. A Basin Plan amendment must be approved by the State Water Board, Office of Administrative Law (OAL), and the United States Environmental Protection Agency (USEPA) before becoming effective.
 28. The Central Valley Water Board finds that the amendment to the Basin Plan was developed in accordance with California Water Code Section 13240, et seq.

THEREFORE BE IT RESOLVED:

1. Pursuant to Section 13240, et seq. of the California Water Code, the Central Valley Water Board, after considering the entire record, including oral testimony at the hearing, hereby approves the staff report and adopts the amendment to the Basin Plan as set forth in Attachment 1.
2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the State Water Board in accordance with the requirements of Section 13245 of the California Water Code.
3. The Central Valley Water Board requests that the State Water Board approve the Basin Plan amendment in accordance with the requirements

- of Sections 13245 and 13246 of the California Water Code and forward it to OAL and the USEPA.
4. If during its approval process the Central Valley Water Board staff, State Water Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Central Valley Water Board of any such changes.
 5. The Central Valley Water Board concurs with staff's conclusion that the proposed amendment will have no potential for adverse effects, either individually or cumulatively, on wildlife or the environment and the Executive Officer is authorized to sign a Certificate of Fee Exemption and following approval of the Basin Plan amendment by the OAL submit this Certificate in lieu of payment of the Department of Fish and Game filing fee to the Secretary for Resources.
 6. The environmental documents prepared by Central Valley Water Board staff pursuant to Public Resources Code Section 21080.5 are hereby certified and, following approval of the Basin Plan amendment by the OAL, the Executive Officer shall file a Notice of Decision with the State Clearinghouse.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Valley Region, on June 23, 2006.

PAMELA C. CREEDON
Executive Officer

Attachments: Attachment 1: Amendment to Basin Plan for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta

RESOLUTION NO. R5-2006-0061
ATTACHMENT 1

AMENDMENTS TO THE WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS FOR THE CONTROL OF DIAZINON AND CHLORPYRIFOS RUNOFF INTO THE SACRAMENTO-SAN JOAQUIN DELTA

Additions to the Basin Plan are shown as underlined text, and text removals are shown in strikeout below. Minor, non-substantive corrections to the Basin Plan Amendment language made by the Central Valley Water Board’s Executive Officer on 12 March 2007 and 12 April 2007 are indicated by double underline and ~~double-strikeout~~.

ADDITIONS TO CHAPTER III, WATER QUALITY OBJECTIVES

Add the following text to table III-2A:

TABLE III-2A
SPECIFIC PESTICIDE OBJECTIVES

PESTICIDE	MAXIMUM CONCENTRATION AND AVERAGING PERIOD	APPLICABLE WATER BODIES
Chlorpyrifos	0.025 µg/L ; 1-hour average (acute) 0.015 µg/L ; 4-day average (chronic) Not to be exceeded more than once in a three year period.	San Joaquin River from Mendota Dam to Vernalis (Reaches include Mendota Dam to Sack Dam (70), Sack Dam to Mouth of Merced River (71), Mouth of Merced River to Vernalis (83)) <u>Delta Waterways listed in Appendix</u> ⇒ [insert appendix number here]
Diazinon	0.16 µg/L ; 1-hour average (acute) 0.10 µg/L ; 4-day average (chronic) Not to be exceeded more than once in a three year period.	San Joaquin River from Mendota Dam to Vernalis (Reaches include Mendota Dam to Sack Dam (70), Sack Dam to Mouth of Merced River (71), Mouth of Merced River to Vernalis (83)) <u>Delta Waterways listed in Appendix</u> ⇒ [insert appendix number here]

ADDITIONS TO CHAPTER IV, IMPLEMENTATION

To the “Regional Water Board Prohibitions” section, after 8. Control of Diazinon and Chlorpyrifos Runoff into the San Joaquin River, add:

9. Control of Diazinon and Chlorpyrifos Runoff into Delta Waterways (as identified in Appendix -[insert appendix number here]).

Beginning December 1, 2011, the direct or indirect discharge of diazinon or chlorpyrifos into Delta Waterways is prohibited during the dormant season (1 December through 1 March) if any exceedance of the chlorpyrifos or diazinon water quality objectives, or diazinon and chlorpyrifos loading capacity occurred during the previous dormant season.

Beginning March 2, 2012, the direct or indirect discharge of diazinon or chlorpyrifos into Delta Waterways is prohibited during the irrigation season (2 March through 30 November) if any exceedance of the chlorpyrifos or diazinon water quality objectives, or diazinon and chlorpyrifos loading capacity occurred during the previous irrigation season.

These prohibitions do not apply if the discharge of diazinon or chlorpyrifos is subject to a waiver of waste discharge requirements implementing the diazinon and chlorpyrifos water quality objectives and load allocations for diazinon and chlorpyrifos for the Delta Waterways, or governed by individual or general waste discharge requirements.

These prohibitions apply only to dischargers causing or contributing to the exceedance of the water quality objective or loading capacity.

These prohibitions do not apply to direct or indirect discharges to the Sacramento or San Joaquin Rivers upstream of the legal boundary of the Delta (as defined in Section 12220 of the California Water Code).

To the Pesticide Discharges from Nonpoint Sources Add

Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta Waterways (as identified in Appendix -[insert appendix number here])

1. The pesticide runoff control program shall:
 - a. Ensure compliance with water quality objectives applicable to diazinon and chlorpyrifos in the Sacramento-San Joaquin Delta Waterways through the implementation of management practices.
 - b. Ensure that measures that are implemented to reduce discharges of diazinon and chlorpyrifos do not lead to an increase in the discharge of other pesticides to levels that cause or contribute to violations of applicable water quality objectives and Regional Water Board plans and policies, and
 - c. Ensure that discharges of pesticides to surface waters are controlled so that pesticide concentrations are at the lowest levels that are technically and economically achievable.

2. Dischargers must consider whether any proposed alternative to the use of diazinon or chlorpyrifos has the potential to degrade ground or surface water. If the alternative has the potential to degrade groundwater, alternative pest control methods must be considered. If the alternative has the potential to degrade surface water, control measures must be implemented to ensure that applicable water quality objectives and Regional Water Board plans and policies are not violated, including State Water Resources Control Board Resolution 68-16.
3. Compliance with applicable water quality objectives, load allocations, and waste load allocations for diazinon and chlorpyrifos in the Delta Waterways is required by December 1, 2011.

The water quality objectives and allocations will be implemented through one or a combination of the following: the adoption of one or more waivers of waste discharge requirements, and general or individual waste discharge requirements. To the extent not already in place, the Regional Water Board expects to adopt or revise the appropriate waiver(s) or waste discharge requirements by December 31, 2009.

4. The Regional Water Board intends to review the diazinon and chlorpyrifos allocations and the implementation provisions in the Basin Plan at least once every five years, beginning no later than December 31, 2010.
5. Regional Water Board staff will meet at least annually with staff from the Department of Pesticide Regulation and representatives from the California Agricultural Commissioners and Sealers Association to review pesticide use and instream pesticide concentrations during the dormant spray and irrigation application seasons and to consider the effectiveness of management measures in meeting water quality objectives and load allocations.
6. The waste load allocations (WLA) for all NPDES-permitted dischargers, load allocations (LA) for nonpoint source discharges, and the loading capacity (LC) of each of the Sacramento-San Joaquin Delta Waterways defined in Appendix -[insert appendix number here] shall not exceed the sum (S) of one (1) as defined below.

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where

C_D = diazinon concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.

C_C = chlorpyrifos concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.

WQO_D = acute or chronic diazinon water quality objective in µg/L.

WQO_C = acute or chronic chlorpyrifos water quality objective in µg/L.

Available samples collected within the applicable averaging period for the water quality objective will be used to determine compliance with the allocations and loading capacity. For purposes of calculating the sum (S) above, analytical results that are reported as “non-detectable” concentrations are considered to be zero.

7. The established waste load and load allocations for diazinon and chlorpyrifos, and the water quality objectives for chlorpyrifos and diazinon in the Delta Waterways represent a maximum allowable level. The Regional Water Board shall require any additional reductions in diazinon and chlorpyrifos levels necessary to account for additional additive or synergistic toxicity effects or to protect beneficial uses in tributary waters.
8. Pursuant to CWC Section 13267, the Executive Officer will require dischargers to submit a management plan that describes the actions that the discharger will take to reduce diazinon and chlorpyrifos discharges and meet the applicable allocations by the required compliance date. The management plan may include actions required by State and Federal pesticide regulations. The Executive Officer will require the discharger to document the relationship between the actions to be taken and the expected reductions in diazinon and chlorpyrifos discharges. The Executive Officer will allow individual dischargers or a discharger group or coalition to submit management plans. The management plan must comply with the provisions of any applicable waiver of waste discharge requirements or waste discharge requirements. The Executive Officer may require revisions to the management plan if compliance with applicable allocations is not attained or the management plan is not reasonably likely to attain compliance.
9. If the loading capacity in one or more Delta Waterways is not being met by the compliance date, direct or indirect dischargers to the those waterways whose discharge exceeds their load allocation will be required to revise their management plans and implement an improved complement of management measures to meet the loading capacity.
10. Any waiver of waste discharge requirements or waste discharge requirements that govern the control of pesticide runoff that is discharged directly or indirectly into the Delta Waterways must be consistent with the policies and actions described in paragraphs 1 – 9.
11. In determining compliance with the waste load allocations, the Regional Water Board will consider any data or information submitted by the discharger regarding diazinon and chlorpyrifos inputs from sources outside of the jurisdiction of the permitted discharger, including any diazinon and chlorpyrifos present in precipitation and other available relevant information; and any applicable provisions in the discharger’s NPDES permit requiring the discharger to reduce the discharge of pollutants to the maximum extent possible.

12. The above provisions for control of diazinon and chlorpyrifos discharges to the Delta Waterways do not apply to dischargers to the Sacramento and San Joaquin Rivers upstream of the Delta.

To the “Estimated Costs of Agricultural Water Quality Control Programs and Potential Sources of Financing” section, add:

Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta Waterways

The total estimated costs for management practices to meet the diazinon and chlorpyrifos objectives for the Delta Waterways range from \$5.9 to \$12.7 million. The estimated costs for discharger compliance monitoring, planning and evaluation range from \$600,000 ~~\$500,000~~ to \$1.8 million. The estimated total annual costs range from ~~\$6.5~~ ~~\$6.4~~ to \$14.4 million (2005 dollars).

Potential funding sources include:

1. Those identified in the San Joaquin River Subsurface Agricultural Drainage Control Program and the Pesticide Control Program.

ADDITIONS TO CHAPTER 5, SURVEILLANCE AND MONITORING

Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta Waterways

The Regional Water Board requires a focused monitoring effort of pesticide runoff from orchards and fields discharging to the Sacramento-San Joaquin Delta Waterways (as identified in Appendix ~~-[insert appendix number here]~~).

The monitoring and reporting program for any waste discharge requirements or waiver of waste discharge requirements that addresses pesticide runoff into the Delta Waterways must be designed to collect the information necessary to:

1. Determine compliance with established water quality objectives and loading capacity, applicable to diazinon and chlorpyrifos in the Delta Waterways.
2. Determine compliance with the load allocations applicable to discharges of diazinon and chlorpyrifos into the Delta Waterways.
3. Determine the degree of implementation of management practices to reduce off-site movement of diazinon and chlorpyrifos.
4. Determine the effectiveness of management practices and strategies to reduce off-site migration of diazinon and chlorpyrifos.

5. Determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts.
6. Determine whether the discharge causes or contributes to a toxicity impairment due to additive or synergistic effects of multiple pollutants.
7. Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable.

Dischargers are responsible for providing the necessary information. The information may come from the dischargers' monitoring efforts; monitoring programs conducted by State or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices.

With Regional Water Board Executive Officer approval, monitoring can be performed in a subset of the Delta Waterways listed in Appendix -[insert appendix number here], and the tributaries of those waterways, to determine compliance with the water quality objectives, loading capacity and load allocations.

ADDITIONS TO APPENDICES

Add a new Appendix titled "Sacramento-San Joaquin Delta Waterways" containing the text and figures below (Since the entire appendix would be added the text is not underlined).

Appendix X[insert appendix number here] Sacramento-San Joaquin Delta Waterways

This Appendix lists the Sacramento-San Joaquin Delta Waterways (Delta Waterways)(1) to which the site-specific diazinon and chlorpyrifos water quality objectives and implementation and monitoring provisions apply. The following are distinct, readily identifiable waterbodies within the boundaries of the "Legal" Delta that are hydrologically connected by surface water flows (not including pumping) to the Sacramento and/or San Joaquin rivers. Figures 1 and 2 show the locations of the Delta Waterways.

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|-----|---------------|-----|-----------------------|
| 1. | Alamo Creek | 11. | Brushy Creek |
| 2. | Babel Slough | 12. | Burns Cutoff |
| 3. | Barker Slough | 13. | Cabin Slough |
| 4. | Bear Creek | 14. | Cache Slough |
| 5. | Bear Slough | 15. | Calaveras River |
| 6. | Beaver Slough | 16. | Calhoun Cut |
| 7. | Big Break | 17. | Clifton Court Forebay |
| 8. | Bishop Cut | 18. | Columbia Cut |
| 9. | Black Slough | 19. | Connection Slough |
| 10. | Broad Slough | 20. | Cosumnes River |

- | | | | |
|-----|--|------|--|
| 21. | Crocker Cut | 62. | Little Connection Slough |
| 22. | Dead Dog Slough | 63. | Little Franks Tract |
| 23. | Dead Horse Cut | 64. | Little Mandeville Cut |
| 24. | Deer Creek
(Tributary to Marsh Creek) | 65. | Little Potato Slough |
| 25. | Delta Cross Channel | 66. | Little Venice Island |
| 26. | Disappointment Slough | 67. | Livermore Yacht Club |
| 27. | Discovery Bay | 68. | Lookout Slough |
| 28. | Donlon Island | 69. | Lost Slough |
| 29. | Doughty Cut | 70. | Main Canal
(Duck Slough tributary) |
| 30. | Dry Creek
(Marsh Creek tributary) | 71. | Main Canal
(Italian Slough tributary) |
| 31. | Dry Creek
(Mokelumne River tributary) | 72. | Marsh Creek |
| 32. | Duck Slough | 73. | Mayberry Cut |
| 33. | Dutch Slough | 74. | Mayberry Slough |
| 34. | Elk Slough | 75. | Middle River |
| 35. | Elkhorn Slough | 76. | Mildred Island |
| 36. | Emerson Slough | 77. | Miner Slough |
| 37. | Empire Cut | 78. | Mokelumne River |
| 38. | Fabian and Bell Canal | 79. | Mormon Slough |
| 39. | False River | 80. | Morrison Creek |
| 40. | Fisherman's Cut | 81. | Mosher Slough |
| 41. | Fivemile creek | 82. | Mountain House Creek |
| 42. | Fivemile Slough | 83. | North Canal |
| 43. | Fourteenmile Slough | 84. | North Fork Mokelumne River |
| 44. | Franks Tract | 85. | North Victoria Canal |
| 45. | French Camp Slough | 86. | Old River |
| 46. | Georgiana Slough | 87. | Paradise Cut |
| 47. | Grant Line Canal | 88. | Piper Slough |
| 48. | Grizzly Slough | 89. | Pixley Slough |
| 49. | Haas Slough | 90. | Potato Slough |
| 50. | Hastings Cut | 91. | Prospect Slough |
| 51. | Hog Slough | 92. | Red Bridge Slough |
| 52. | Holland Cut | 93. | Rhode Island |
| 53. | Honker Cut | 94. | Rock Slough |
| 54. | Horseshoe Bend | 95. | Sacramento Deep Water
Channel |
| 55. | Indian Slough | 96. | Sacramento River |
| 56. | Italian Slough | 97. | Salmon Slough |
| 57. | Jackson Slough | 98. | San Joaquin River |
| 58. | Kellogg Creek | 99. | Sand Creek |
| 59. | Latham Slough | 100. | Sand Mound Slough |
| 60. | Liberty Cut | 101. | Santa Fe Cut |
| 61. | Lindsey Slough | 102. | Sevenmile Slough |
| | | 103. | Shag Slough |

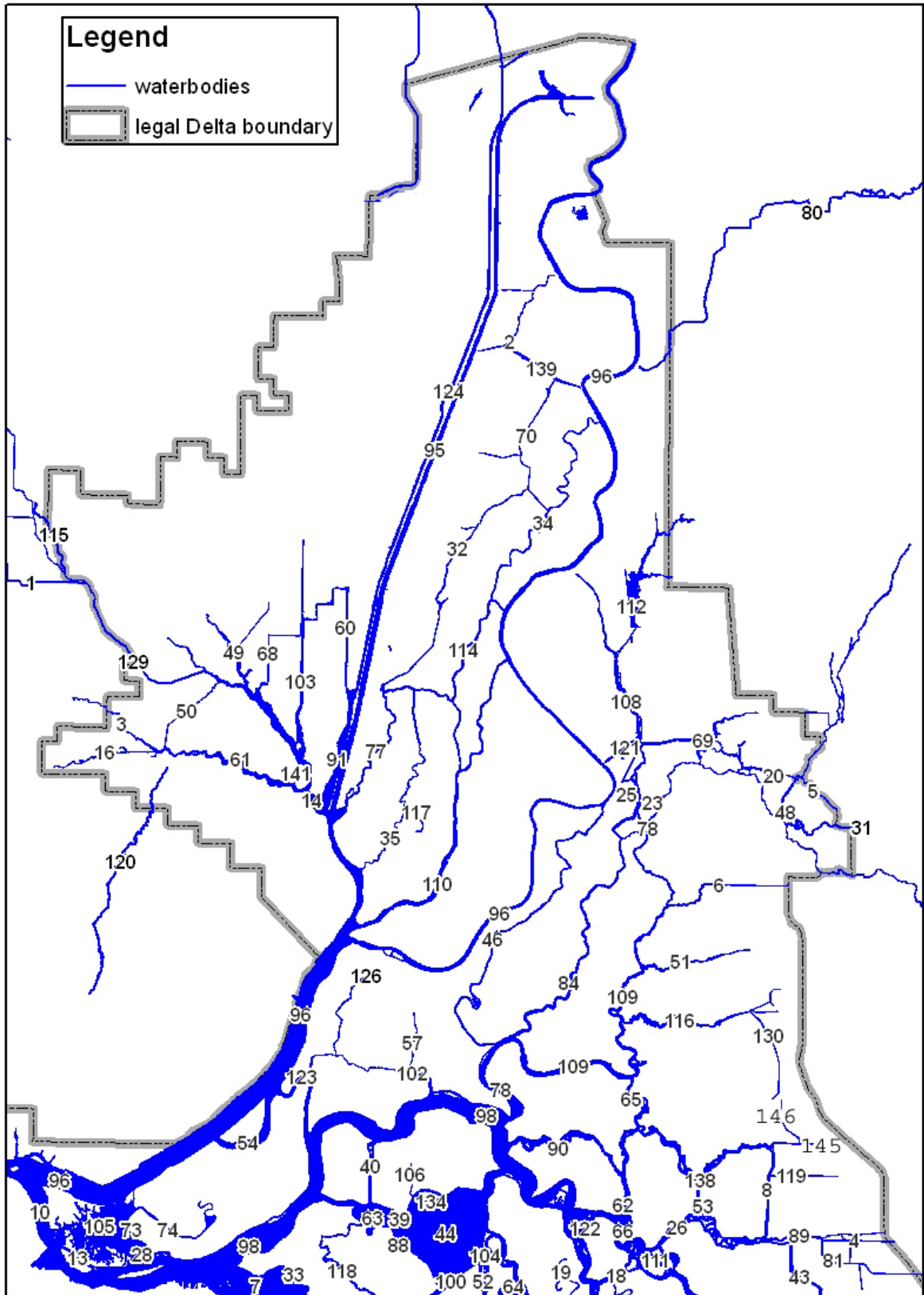
- 104. Sheep Slough
- 105. Sherman Lake
- 106. Short Slough
- 107. Smith Canal
- 108. Snodgrass Slough
- 109. South Fork Mokelumne River
- 110. Steamboat Slough
- 111. Stockton Deep Water Channel
- 112. Stone Lakes
- 113. Sugar Cut
- 114. Sutter Slough
- 115. Sweany Creek
- 116. Sycamore Slough
- 117. Taylor Slough
(Elkhorn Slough tributary)
- 118. Taylor Slough
(near Franks Tract)
- 119. Telephone Cut
- 120. The Big Ditch
- 121. The Meadows Slough
- 122. Three River Reach
- 123. Threemile Slough
- 124. Toe Drain
- 125. Tom Paine Slough
- 126. Tomato Slough
- 127. Trapper Slough
- 128. Turner Cut
- 129. Ulatis Creek
- 130. Upland Canal
(Sycamore Slough Tributary)
- 131. Victoria Canal
- 132. Walker Slough
- 133. Walthall Slough
- 134. Washington Cut
- 135. Werner Dredger Cut
- 136. West Canal
- 137. Whiskey Slough
- 138. White Slough
- 139. Winchester Lake
- 140. Woodward Canal
- 141. Wright Cut
- 142. Yosemite Lake
- 143. Yolo Bypass (not labeled)(2)
- 144. Deuel Drain

- 145. Dredger Cut
- 146. Highline Canal

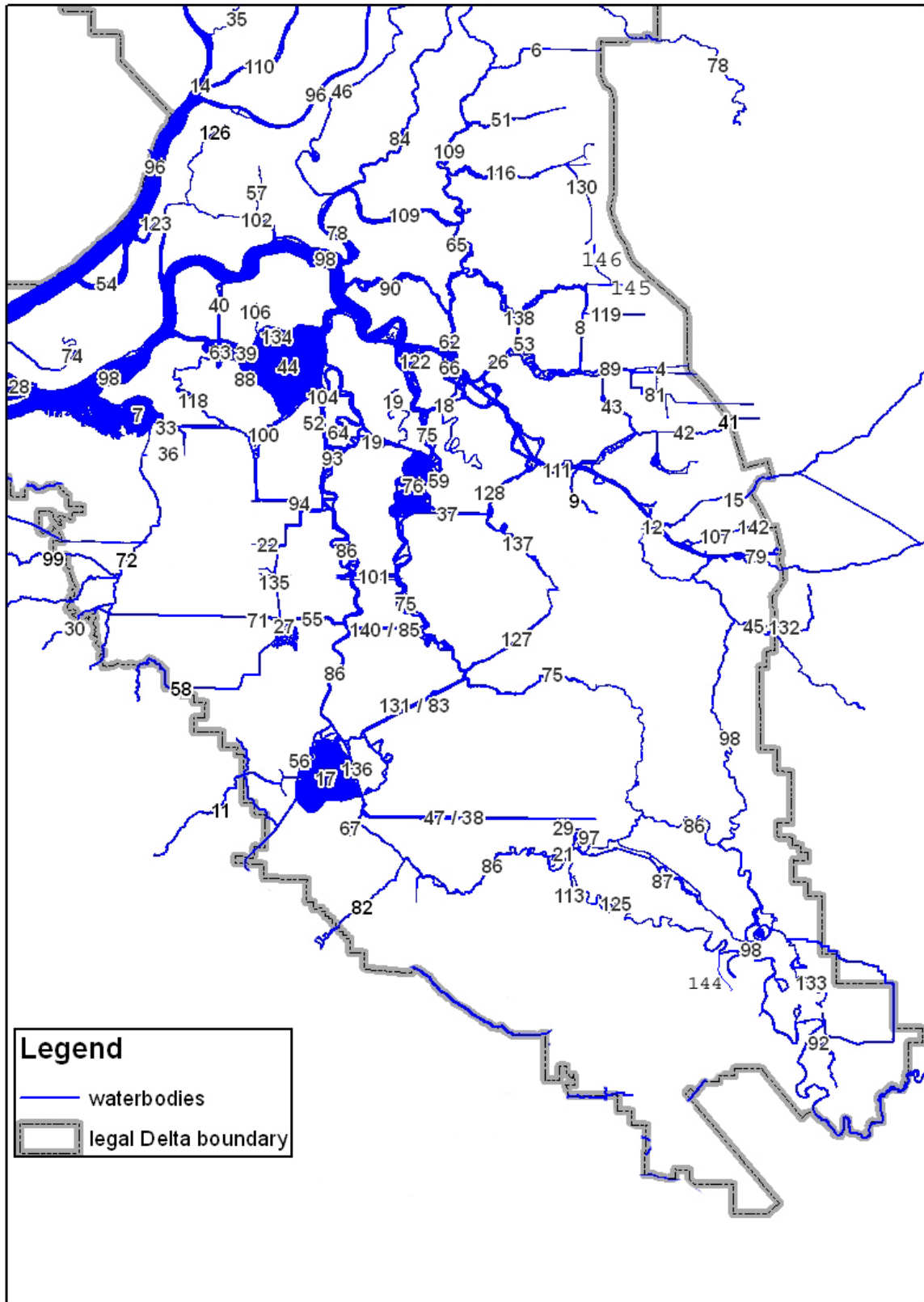
Footnotes:

(1) The Delta Waterways include only those reaches that are located within the "Legal" Delta, as defined in Section 12220 of the California Water Code.

(2) When flooded, the entire Yolo Bypass is a Delta Waterway. When the Yolo Bypass is not flooded, the Toe Drain is the only Delta Waterway within the Yolo Bypass.



Appendix ~~X~~[insert appendix number here] Figure 1. Delta Waterways, Northern Panel



Appendix ~~X~~[insert appendix number here] Figure 2. Delta Waterways, Southern Panel