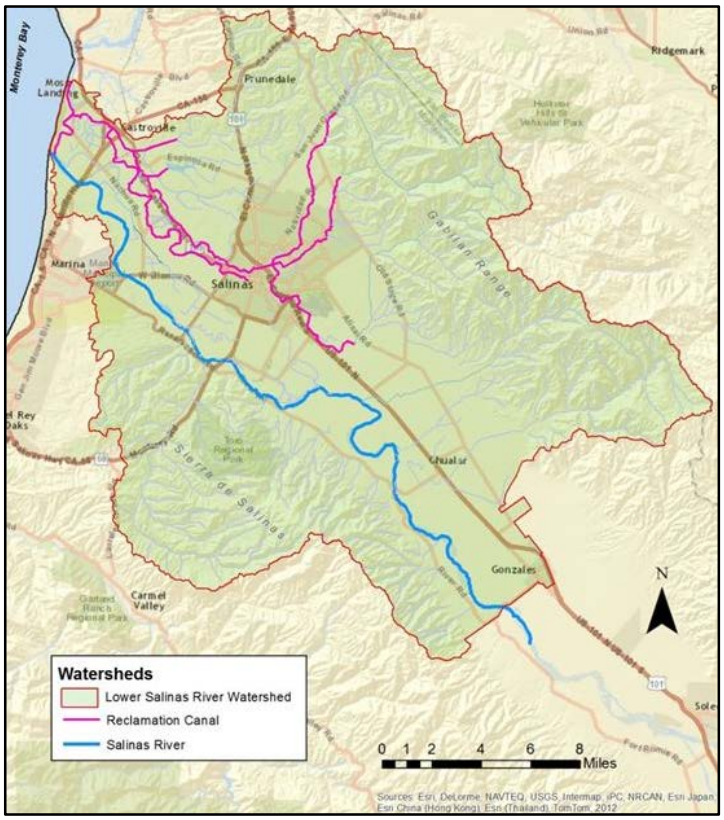
Total Maximum Daily Loads for Sediment Toxicity and Pyrethroid Pesticides in Sediment In the Lower Salinas River Watershed – Fact Sheet

Total Maximum Daily Loads (TMDL) for sediment toxicity and pyrethroid pesticides in sediment in the lower Salinas River watershed took effect on June 28, 2018.



The lower Salinas River watershed encompasses an approximately 405 square mile area in northern Monterey County. The watershed extends from the City of Gonzales north to Monterey Bay and the Pacific Ocean. There are two major drainages: the lower Salinas River and the Tembladero Slough/Reclamation Canal.

Surface water monitoring data in the lower Salinas River watershed shows widespread pyrethroid pesticide pollution and sediment toxicity to aquatic invertebrates. These problems exceed the water quality standards established by the Central Coast Water Board and the waterbodies were classified as impaired on the federal 2010 Clean Water Act section 303(d) List of impaired waters due to excessive sediment toxicity to aquatic invertebrates. The TMDLs are pollution levels established to meet surface water quality standards (numeric targets), which are set to protect and restore aquatic life and their habitats.

Municipal and agricultural use of pyrethroid pesticides are identified as sources of pollution and a primary cause of sediment toxicity in the watershed. The TMDLs are being implemented by the City of Salinas and County of Monterey through their municipal stormwater permits and by the owners and operators of irrigated agricultural lands through the Agricultural Order in the lower Salinas River watershed.

The TMDL includes the following waterbodies:
Tembladero Slough/Reclamation Canal and its tributaries Alisal Creek, Alisal Slough, Espinosa Slough, Gabilan Creek, Merritt Ditch, Natividad Creek, and Old Salinas River.
Lower Salinas River and its tributaries Blanco Drain, Chualar and Quail Creeks.

Photo of a lettuce field in the lower Salinas River watershed.

What is a Total Maximum Daily Load?

"Total Maximum Daily Load" (TMDL) is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. The term "TMDL" also refers to implementation plans adopted by the Central Coast Water Board to address pollution discharged to rivers and streams.

Photo of Salinas River near City of Salinas, at monitoring station 309DAV.

What is sediment toxicity?

Sediments are deposited soils transported by flowing water that become habitats for aquatic organisms in rivers, streams and lakes. Pollutants toxic to aquatic organisms that adhere to or are found in sediments, contribute to sediment toxicity. Sediment toxicity tests measure the ability of aquatic organisms to survive in aquatic habitats.

FACTS ABOUT PYRETHROIDS

- Widely used agricultural and household insecticides;
- Toxic to aquatic invertebrates in sediment;
- Bind strongly to sediment;
- Persist in the environment; and
- May occur in sediments at toxic levels for aquatic life for long periods of time.

What are the sources of pollution?

Pyrethroids are used in municipal and agricultural areas to control insect pests.
- Municipal sources include household and commercial applications of pyrethroids.
- Agricultural sources include applications of specific pyrethroid pesticides to common crops such as:

- Bifenthrin is applied to strawberry, artichoke;
- Cypermethrin is applied to lettuce, spinach, broccoli, and pea;
- Esfenvalerate is applied to artichoke, broccoli, lettuce; and
- Lambda-cyhalothrin is applied to lettuce crops.

TMDL Implementation

Here are the ways that the TMDLs are being implemented:

Municipalities

Municipalities implement the TMDLs through *stormwater permits.* This can be achieved by:

- Participating in statewide efforts coordinated with the Department of Pesticide Regulation (DPR);
- Monitoring water quality, implementing management measures to reduce pesticide and sediment discharges, and reporting on conditions; and
- Reducing stormwater discharges to receiving waters through volume-based structural control measures.

Agriculture

The Central Coast Water Board *Agricultural Order (R3-2017-0002)* implements the TMDL by requiring growers to identify and implement water quality best management practices to protect water quality and to achieve water quality standards. To achieve the TMDL goals, the Central Coast Water Board will conduct a review of monitoring and reporting data submitted as required by the *Agricultural Order* to assess progress made to reduce pollution to waterbodies. This can be achieved by:

- Implementing water quality best management practices to protect against erosion, discharge of sediment and pesticides into waterways;
- Assessing effectiveness of management practices to reduce sediment erosion and discharge to waterbodies and adapting practices, as necessary. (Refer to linked document below for a list of management practices); and
- Maintaining Annual Compliance Forms to monitor effectiveness of management practices, when applicable.

For guidance on implementing water quality best management practices, please contact a technical service provider in your area.

REFERENCES

1) Central Coast Water Board Website: https://www.waterboards.ca.gov/centralcoast/
2) TMDL Website: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/salinas/sed_tox/
3) Management Practices: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/salinas/sed_tox/tmdl_management_practices.pdf
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