

DISSOLVED OXYGEN DEPRESSION IN SAN JOAQUIN RIVER

PROBLEM:

- **Low DO (below state standard, as low as 2.5 mg/L) occurs in 10 mile reach of San Joaquin River near Stockton each year from June to November.**
- **Ecological Impacts: May be barrier to upstream migration of fall-run Chinook salmon. Can also stress, kill, and/or block migration of other fishes. Can stress and/or kill benthic invertebrate assemblages.**
- **Sources of Problem: Effluent from City of Stockton WWTP. Stockton Turning Basin (oxygen depletion due to stratification and accumulation of oxygen depleting substances). Oxygen depleting substances from upstream algal blooms. Stormwater runoff may be a potential contributing source. Problem exacerbated in summer and early fall due to low river flows (reduced circulation, flushing and mixing) and higher water temperatures.**

SCIENTIFIC/TECHNICAL INFORMATION NEEDS:

- **Determine relative contributions of various sources of oxygen depleting substances and oxygen depleted water.**
- **Evaluate mechanisms that produce oxygen depletion and oxygen depleting substances, including importance of channel depression in Turning Basin.**
- **Determine water circulation and vertical mixing patterns.**
- **Provide information for refining models.**
- **Evaluate effectiveness of current management strategies.**
- **Test and evaluate new management strategies**