Water Quality Report Card		Low Dissolved Oxygen in Suisun Marsh		
Regional Water Board:	**San Francisco Bay, Region 2**	**STATUS**	☑ **Conditions Improving** ☐ Data Inconclusive ☐ Improvement Needed ☐ Targets Achieved/Water Body Delisted	
Beneficial Uses Affected:	EST, MIGR, RARE, SPWN			
Implemented Through:	401 Water Quality Certification	**Pollutant Type:**	☐ Point Source ☑ Nonpoint Source ☐Legacy	
Effective Date:	April 11, 2018	**Pollutant Source:**	Actions at managed wetlands	
Attainment Date:	Ongoing			

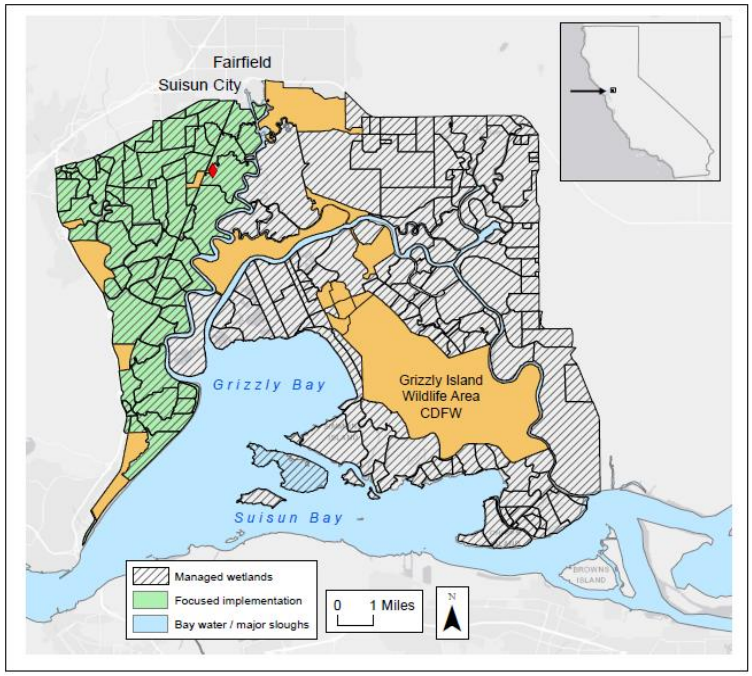
Water Quality Improvement Strategy

Suisun Marsh encompasses over 100,000 acres of tidal marshes, diked managed marshes, small and large tidal sloughs, and natural uplands which support resident and migratory shorebirds and waterfowl, and provide habitats for threatened and endangered species. Low dissolved oxygen (DO) events, resulting from environmental conditions and management actions in some managed wetlands, adversely impact the aquatic life beneficial uses in Suisun Marsh. These problems are particularly evident in the slow-flowing, low-mixing, back-end sloughs in the western portion of the marsh. In fall, these sloughs experience dramatic decreases in DO due to high organic carbon load discharges from managed wetlands, leading to low DO and even anaerobic conditions in the surface water. A TMDL for dissolved oxygen, including site-specific objectives, was adopted by the San Francisco Bay Water Board in April 2018 to prevent low DO in marsh sloughs and protect sensitive aquatic life beneficial uses. Vegetation and water management Best Management Practices (BMPs) are required under the 401 Water Quality certification and implemented at managed wetlands to control DO conditions. The BMPs include actions such as staggering discharges from managed wetlands, clearing internal ditches to improve circulation, and mechanically removing broadleaf vegetation to reduce the amount of organic matter available for decomposition.

TMDL Targets Equal Water Quality Objectives

Waterbody/Timeframe	Dissolved Oxygen Objectives
Suisun Marsh - All sloughs and channels / year-round	Acute ≥ 3.8 mg/L (minimum)
	Chronic ≥ 5.0 mg/L (minimum)

Suisun Marsh



Water Quality Outcomes

- *Testing and deployment of BMPs conducted prior to development of the TMDL shows improvement in DO concentrations in the western portion of the marsh (green area on the map).*
- *Magnitude and length of low DO events is diminishing, and the TMDL targets are almost met in recent years.*
- *Continual implementation of BMPs is necessary to achieve the TMDL targets, and to ensure that the conditions in marsh sloughs support aquatic life beneficial uses.*

Dissolved Oxygen Concentrations in Fall over Two Years