

## Improving Aquatic Plant Management in the California Sacramento-San Joaquin Delta

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Management of aquatic weeds in complex watersheds and river systems present many challenges to assessment, planning and implementation of management practices for floating and submerged aquatic invasive plants. The Delta Region Areawide Aquatic Weed Project (DRAAWP), a USDA sponsored area-wide project, is working to enhance planning, decision-making and operational efficiency in the California Sacramento-San Joaquin Delta. Satellite and airborne remote sensing are used map (area coverage and biomass), direct operations, and assess management impacts on plant communities. Archived satellite records going are used to review results from previous climate and management events and aide in developing long-term strategies. Modeling at local and watershed scales provides insight into land-use effects on water quality. Plant growth models informed by remote sensing are being applied spatially across the Delta to balance location and type of aquatic plant, growth response to altered environments, phenology, environmental regulations, and economics in selection of management practices. Initial utilization of remote sensing tools developed for mapping of aquatic invasive weeds improved operational efficiency by focusing limited chemical use to strategic areas with high plant-control impact and incorporating mechanical harvesting when chemical use is restricted. These assessment methods provide a comprehensive and quantitative view of aquatic invasive plants communities in the California Delta, both spatial and temporal, informed by ecological understanding with the objective of improving management and assessment effectiveness.

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