

Climate Resilient Monterey Bay



ADAPTING MARSHES AND TRANSPORTATION CORRIDORS TO SEA LEVEL RISE IN ELKHORN SLOUGH TO IMPROVE PUBLIC SAFETY AND TIDAL HABITAT

SUMMARY

This project represents the first major climate-resilience investment for the Elkhorn Slough National Estuarine Research Reserve (ESNERR) in the Kirby–North Marsh complex, the northeastern portion of Elkhorn Slough. It is focused on protecting public access and critical transportation corridors from sea-level rise using Natural and Nature-Based Features (NNBF) while designing and beginning implementation of a climate-ready salt marsh system. The work simultaneously increases protection for local communities, strengthens critical infrastructure resilience, and creates a model that other coastal regions facing similar challenges can follow.

PROJECT OBJECTIVES

The project is advancing three core objectives. First, it is protecting public access and essential transportation infrastructure, specifically the Union Pacific Railroad line through ensuring tidal water is not being held back by the Railroad and Elkhorn Road, through the creation of a resilient marsh buffer using NNBF. Second, it is restoring climate-ready salt marsh and marsh-transition habitats that can persist under accelerating sea-level rise while reducing hypoxia and acidification risks. Third, it is developing integrated planning, design, and permitting for the larger Kirby–North Marsh complex so that future restoration and infrastructure protection can proceed with a unified, climate-adaptive approach that balances ecological and community benefits.

PROJECT ACTIVITIES

Work is currently underway across three major components. First, a 1.5-acre living shoreline is being installed along the degraded shoreline trail used heavily by local communities, and the trail is being elevated by at least one meter to remain functional under future sea-level rise. Second, invasive species are being removed and native transition-zone vegetation is being re-established across 35 acres to allow marsh migration, reduce wildfire and tree-fall risk, and restore habitat connectivity for endangered species such as the Santa Cruz long-toed salamander. This includes regrading small levees to reestablish tidal connectivity and restoring wetland corridors. Third, the team is conducting alternatives analysis, stakeholder visioning, scientific evaluation of ecological tradeoffs, and development of 60% design and permitting documents for the 200+ acre Kirby–North Marsh complex, ensuring coordinated protection of both habitat and transportation infrastructure from climate-driven impacts.

ADAPTATION STRATEGY

Flood Risk Reduction



PARTNERS



Elkhorn Slough
Foundation



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