

LOOKOUT SLOUGH, CALIFORNIA

Restoring tidal wetlands and providing long-lasting erosion protection



Industry: Water
Sub-industry: Flood mitigation
Location: Solano County, California
Product: **PROPEX® Armormax®**

Overview

The Department of Water Resources (DWR) manages California's water resources, systems, and infrastructure. One of the significant challenges DWR faced was restoring the natural tidal wetlands in the Sacramento–San Joaquin Delta. This would create diverse tidal and intertidal habitats for native fish and wildlife, including snakes, turtles, hawks, and special-status aquatic species. Solmax was chosen to improve flood management and provide long-lasting protection in the northwestern portion of the Delta. Upon completion, 3,600 ac (1,457 ha) of natural tidal wetlands will be restored.

Solution

The project involved rebuilding three U.S. Army Corps of Engineers (USACE) setback levees, and **PROPEX Armormax** was chosen over rock to armor the 2.5-mile (4.02 m) Cache Hass levees. Due to wildlife and flood restraints, the project spanned three construction seasons. Design engineers used standard methods from coastal engineering planning and design, consistent with approaches recommended by the Central Valley Flood Protection Board and the USACE.

The PROPEX Armormax solution effectively limited erosion, while also maintaining the standard methods from coastal engineering planning and design.

CASE STUDY

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The project consisted of three levee segments. Due to the potential wave overtopping for the third levee segment, it was recommended that 80,000 yd² (66,890 m²) of **PROPEX Armormax** be used to limit erosion, support the complex ecosystem, and comply with performance objectives. **PROPEX Armormax** utilizes both High Performance Turf Reinforcement Mats (HPTRMs) and Engineered Earth Anchors™ (EEA) to lock soil in place and protect against hydraulic stresses, providing dynamic erosion control and slope stabilization solutions.

Performance

The project was a major success, achieving the restoration of 3,600 ac (1,457 ha) of natural tidal wetlands. The project also improved flood management in the northwestern portion of the Delta. The **PROPEX Armormax** solution effectively limited erosion, while also maintaining the standard methods from



coastal engineering planning and design. Overall, the project was a significant success for DWR, achieving its goal of restoring natural tidal wetlands, creating beneficial habitats for native fish and wildlife, and improving flood management in the Delta.



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