

## Module SV-1

# Basic Levee Protection

## Physical and Structural Features

### Flood Protection and Levee Stabilization

Activities	Benefits
<ul style="list-style-type: none"> <li>• Provide a <b>basic level of protection and stabilization</b> of Delta levees through levee maintenance and stabilization actions</li> </ul>	<ul style="list-style-type: none"> <li>• Manages vulnerability of Delta land use and infrastructure</li> <li>• Manages vulnerability of Delta water supply to salinity intrusion</li> <li>• Manages vulnerability of Delta ecosystem functions</li> <li>• Provides opportunities for habitat restoration</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Maintain flood conveyance capacity</b> of Delta channels through channel maintenance actions or in conjunction with levee stabilization</li> </ul>	<ul style="list-style-type: none"> <li>• Manages vulnerability of Delta functions</li> <li>• Maintains flood conveyance</li> <li>• Provides opportunities for habitat restoration</li> </ul>
Considerations	
<ul style="list-style-type: none"> <li>• Provide flood protection equivalent to Army Corps of Engineers PL 99 standard for these islands:                             <ul style="list-style-type: none"> <li>Critical western islands with important regional infrastructure (e.g., Highway 160) such as Sherman Island</li> <li>Islands with both valuable habitat and important regional infrastructure (e.g., I-5) such as New Hope Tract</li> </ul> </li> <li>• Upgrade all other Delta levees to meet at least the Hazard Mitigation Plan (HMP) standards.</li> <li>• Integrate protection and stabilization of levees with Delta habitat restoration activities.</li> <li>• Provide stable funding mechanism for ongoing levee and habitat monitoring, maintenance, and management.</li> </ul>	

## Institutional and Policy Features

### Management of System Vulnerability

Activities	Benefits
<ul style="list-style-type: none"> <li>• Establish and fund an <b>emergency levee management plan</b> to respond to levee failures</li> </ul>	<ul style="list-style-type: none"> <li>• Provides resources to protect Delta functions through proactive and preventative measures</li> </ul>
<ul style="list-style-type: none"> <li>• Establish <b>landside buffer zones</b> adjacent to levees on islands with deep peat soils</li> </ul>	<ul style="list-style-type: none"> <li>• Provides increase in stability of Delta levees and reliability of Delta functions by reducing subsidence adjacent to levees</li> <li>• Buffer could be used to provide habitat benefit</li> </ul>
Considerations	
<ul style="list-style-type: none"> <li>• Determine extent and cost effectiveness of levee management programs and buffer zones.</li> <li>• Buffer strip approximately 75 to 100 yards wide.</li> </ul>	

## **Preliminary Assessment**

### ***Benefits***

**Ecosystem Quality —**

**Water Supply —**

**Water Quality —**

**System Vulnerability —** This module manages the vulnerability of Delta functions to catastrophic loss. Improvement of levees around critical western islands protects the island land uses and Delta water supply from salinity intrusion due to island failure. Setback levees, stabilizing berms, and landside buffer zones increase levee stability, and reduce flood danger to provide for continued protection of existing Delta functions as an integrated resource system. These efforts also provide opportunities for integrating habitat restoration activities.

### ***Constraints and Concerns***

Delta islands provided basic levels of protection remain vulnerable to failure such as the Summer 1994 inundation of Little Mandeville Island.