FloodSAFE CALIFORNIA

Levee Vegetation Management Strategy of the Central Valley Flood Protection Plan

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PUBLIC SAFETY ENVIRONMENTAL STEWARDSHIP ECONOMIC STABILITY

August 22, 2012.

Corps announces ineligibility of 17 levee systems for PL 84-99, levee rehabilitation assistance

Flood agency infighting puts us at risk

To secure Sacramento's future, there is no more important issue than flood control. Few cities in the United States face such a threat of catastrophic inundation. To prevent a Katrina in California's state capital, federal, state and local flood-control agencies must have a healthy working relationship. Thousands of lives depend upon it.

Over the last several months and years, that relationship has deteriorated. The reasons are complex, and it's unclear if any one agency is the bad guy. But if these bureaucratic conflicts continue, it will set back efforts to protect Sacramento and many other communities in the Central Valley.

We need a peace treaty among the bureaucrats, and it can't come soon enough.

One big flashpoint is the subject of vegetation on levees. Following the flooding of New Orleans, the U.S. Army Corps of Engineers started to more aggressively enforce its prohibition of trees and bushes on or near federal flood control levees. This was a bit of reversal for the Corps, particularly in California. Some of the trees and vegetation you now see along the American River Parkway, for instance, were planted by the Corps as mitigation for other projects.

Fearing that the Corps' stance will result in the clear-cutting of trees across many of the Central Valley's rivers and streams, conservation groups and state agencies have fought back.

Three groups – Friends of the River, the Center for Biological Diversity, and Defenders of

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Wildlife – filed suit against the Corps in 2011. This year, the California Department of Fish and Game filed its own lawsuit against the Corps and its vegetation policy.

Relations have deteriorated ever since. On Aug. 23, the Corps announced that 17 levee systems in Sacramento, Stockton and three other cities would no longer be eligible for levee rehabilitation help following a serious flood.

Why? According to the Corps, levees in these areas had unpermitted "encroachments" – such as staircases and fences built onto the levees – and California hadn't adequately come up with a plan to address the long-standing problem.

The announcement hit Sacramento like a brickbat. Local elected officials hadn't been notified, and residents of the Pocket and other affected neighborhoods were immediately alarmed. What did this mean? If their property abutted the levee, would they have to tear out their backyards? Following a flood, would Sacramento itself have to pay for rehabilitation of a federal flood control levee?

U.S. Rep. Doris Matsui was one of those frustrated by the Corps announcement. In her view, it unnecessarily alarmed local residents, hurt the Corps' standing with its partners in flood control and distracted everyone from the bigger challenge of upgrading the region's flood control system.

"The Corps does great things," Matsui told me. "But sometimes they get off track."

Corps officials say they had little choice but to make the announcement.

Inspections in 2010 showed unpermitted encroachments in the 17 levee systems, including stretches of the Pocket and Little Pocket. If not addressed, these encroachments could directly compromise the integrity of the levees, or prevent engineers from detecting and stopping seepage during a major flood.

"Those are the two main problems with encroachment," said Ryan Larson, the levee safety program manager for the Corps' Sacramento District. "That is why we take them so seriously."

Although the problems were documented in 2010, the Corps allowed them to continue under an agreement with the Central Valley Flood Protection Board.

That agreement expired in June, said Larson. The Corps had hoped the state would detail plans for getting levees in compliance through a report it finalized in July, the Central Valley Flood Protection Plan. But according to the Corps, that plan didn't demonstrate how the state would work to comply with federal levee standards.

All that is true, but some in the flood control community wonder if the Corps action may have been some form of retaliation against the state. When approved last month, the state's Central Valley Flood Protection Plan included a provision rejecting the Corps' policy on removing vegetation from levees. That further miffed Corps officials, already frustrated by the Department of Fish and Game's lawsuit.

I've written critically about the Corps in the past, but I also understand this agency's dilemma. Following the death and destruction of Katrina, the Corps was held legally responsible, and Congress raked agency leaders over the coals for not strictly enforcing levee standards in New Orleans.

Responding to Congress, the Corps is now enforcing those standards, even if they are overly rigid, outdated and in conflict with other laws and priorities.

The sad fact, unfortunately, is it wasn't levee vegetation or encroachments that caused the flooding of New Orleans. It was a poorly designed system.

The Corps has since redesigned that system – at a cost of $14 billion – to prevent storm surges from flowing into Lake Pontchartrain and overwhelming levees.

And guess what? The system worked pretty well last week in protecting New Orleans from Hurricane Isaac.

Here in Sacramento, we need to be similarly focused on the big picture, instead of getting bogged down in bureaucratic fights over levee trees and staircases. To do that, we need our flood agencies to start working as partners again – and remember who they work for.

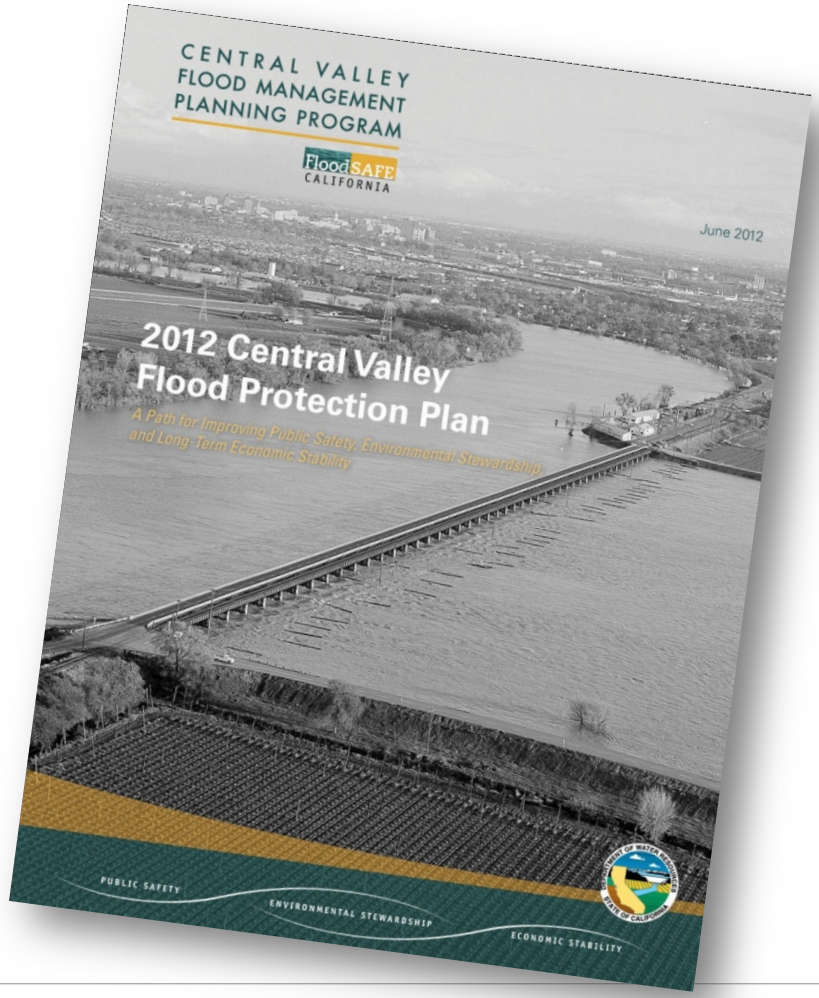
Timeline of Events

2007	2008	2009	2010	2011	2012
USACE releases "Draft Final White Paper - Treatment of Vegetation within Local Flood-Damage-Reduction Systems" 2007 Levee Vegetation Symposium held California Levee Roundtable established		*California's Central Valley Flood System Improvement Framework* (Framework) released ETL 1110-2-571 issued California Levee Vegetation Research Program (CLVRP) begins	Draft policy guidance letter (PGL) released: "Process for Requesting a Variance from Vegetation Standards for Levees and Floodwalls"	System-Wide Improvement Framework Policy (SWIF) proposed Draft Central Valley Flood Protection Plan (CVFPP) released	Updated PGL released DWR comments on PGL *Central Valley Flood Protection Plan* adopted Levee Vegetation Research Symposium 2012 held

2005: Hurricane Katrina

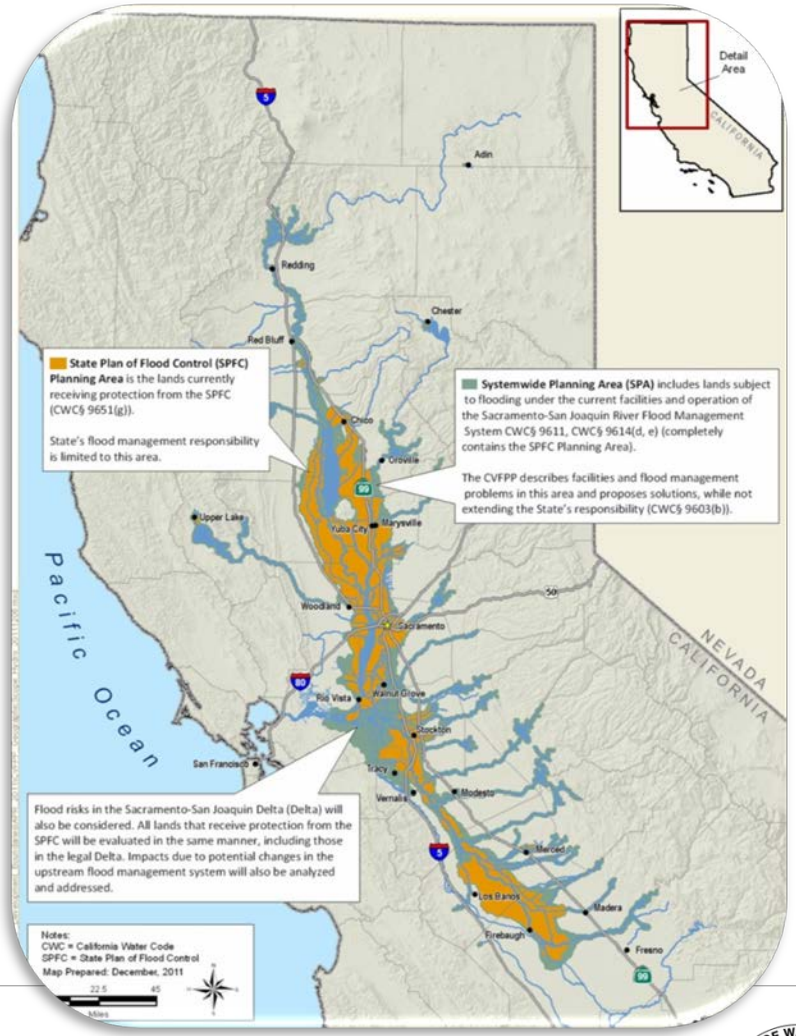
Central Valley Flood Protection Plan

The 2012 Central Valley Flood Protection Plan (CVFPP) reflects the State's systemwide investment approach for flood management improvements in the Central Valley



Central Valley Flood Protection Plan

- Focus on lands protected by facilities of the State Plan of Flood Control
- Prepared in coordination with other integrated water management efforts
- Systemwide perspective
- Recognizes State's 3 fundamental interests



CVFPP Conservation Framework

CENTRAL VALLEY FLOOD MANAGEMENT PLANNING PROGRAM

FloodSAFE CALIFORNIA

Public Draft

2012 Central Valley Flood Protection Plan

Attachment 2: Conservation Framework

December 2011

STATE OF CALIFORNIA
THE NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

CVFPO/FRSRO/DFM Review Draft

Central Valley Flood Protection Plan:
Levee Vegetation Management Strategy

State of California (State) law, enacted through the Central Valley Flood Protection Act of 2008 and codified in Sections 9600 through 9625 of the California Water Code, requires the California Department of Water Resources (DWR) to prepare the Central Valley Flood Protection Plan (CVFPP). The CVFPP proposes a State Systemwide Investment Approach for sustainable, integrated flood management in areas currently protected by facilities of the State Plan of Flood Control. The CVFPP represents a foundational planning component of DWR's statewide FloodSAFE California initiative.

In 2009, the California Levees Roundtable signed the **California's Central Valley Flood System Improvement Framework** (Levees Framework Agreement). This Framework included interim criteria for managing vegetation on levees for visibility and accessibility with the expectation that a comprehensive strategy would be developed and included in the 2012 CVFPP. Sections of the Levee Vegetation Management Strategy are presented in Chapters 1, 3, and 4 of the CVFPP. The full Levee Vegetation Management Strategy is included in the Conservation Framework, Attachment 2 to the CVFPP.

CVFPP Levee Vegetation Management Vision: Through management actions set forth in the CVFPP and the associated Conservation Framework, the State will implement a flexible and adaptive integrated vegetation management strategy that meets public safety goals, protects and enhances sensitive habitats within the Central Valley, and recognized limited funding.

Implementation of the State's approach to levee vegetation management will be adaptive and responsive to:

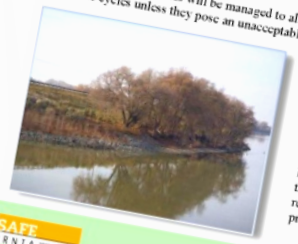
- The results of ongoing and future research, and
- Knowledge gained from levee performance during high water events.

While determining appropriate usage of limited resources, DWR believes it is appropriate to characterize woody vegetation as only a "potential risk factor". Properly trimmed and spaced levee vegetation poses a low threat to levee integrity as compared to other risk factors and is considered in a balanced recognition of its role to the ecosystem and to the levee's integrity.

Adaptive Levee Vegetation Management

New levees will be constructed and managed for compatibility with the US Army Corps of Engineers ETL.

Levees with "legacy" trees will be managed to allow the existing large trees and woody vegetation to live out their normal life cycles unless they pose an unacceptable threat, while maintaining visibility for inspection and access for maintenance and floodfight. This strategy allows for the retention of lower waterside vegetation below the vegetation management zone.



Lower Waterside Slope

Waterside vegetation acts to stabilize the bank and provide erosion protection as well as provides habitat for sensitive species. In order to sustain this critical habitat, the CVFPP levee management strategy retains waterside vegetation (below the vegetation management zone). Vegetation would be removed (in coordination with resource agencies) only when it presents an unacceptable threat.

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Levee Vegetation Research Symposium

August 28-30, 2012
Sacramento, CA

U.S. & International Speakers

Brig. Gen. John McMahon (Retired), Moderator

Uwe Kleber-Lerchbaumer, Bavaria Environment Agency

Michelle Shriro, UC Berkeley PhD Candidate

Dr. Juliana Birkhoff, RESOLVE

Panel Discussions

Jonathon Simm, HR Wallingford, International Levee Handbook

Dr. Gerald Bawden, USGS

Research Discussions

Tree root architecture

Tree root interactions with cutoff walls

Seepage and stability related to roots

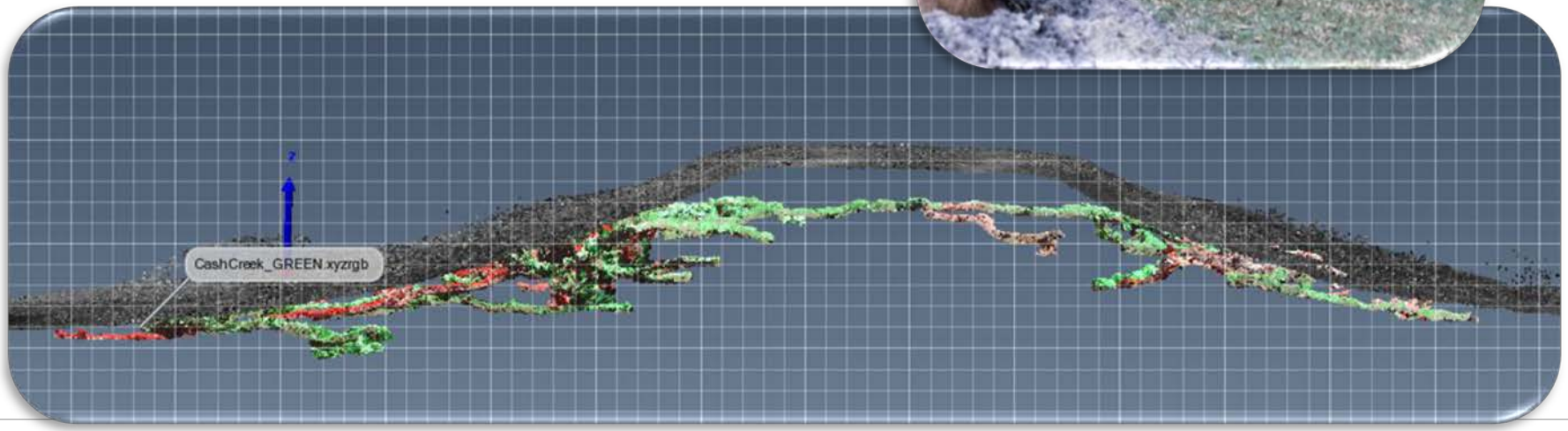
Tree windthrow

Burrowing mammal habitat associations/grouting efficacy

Levee failure forensics

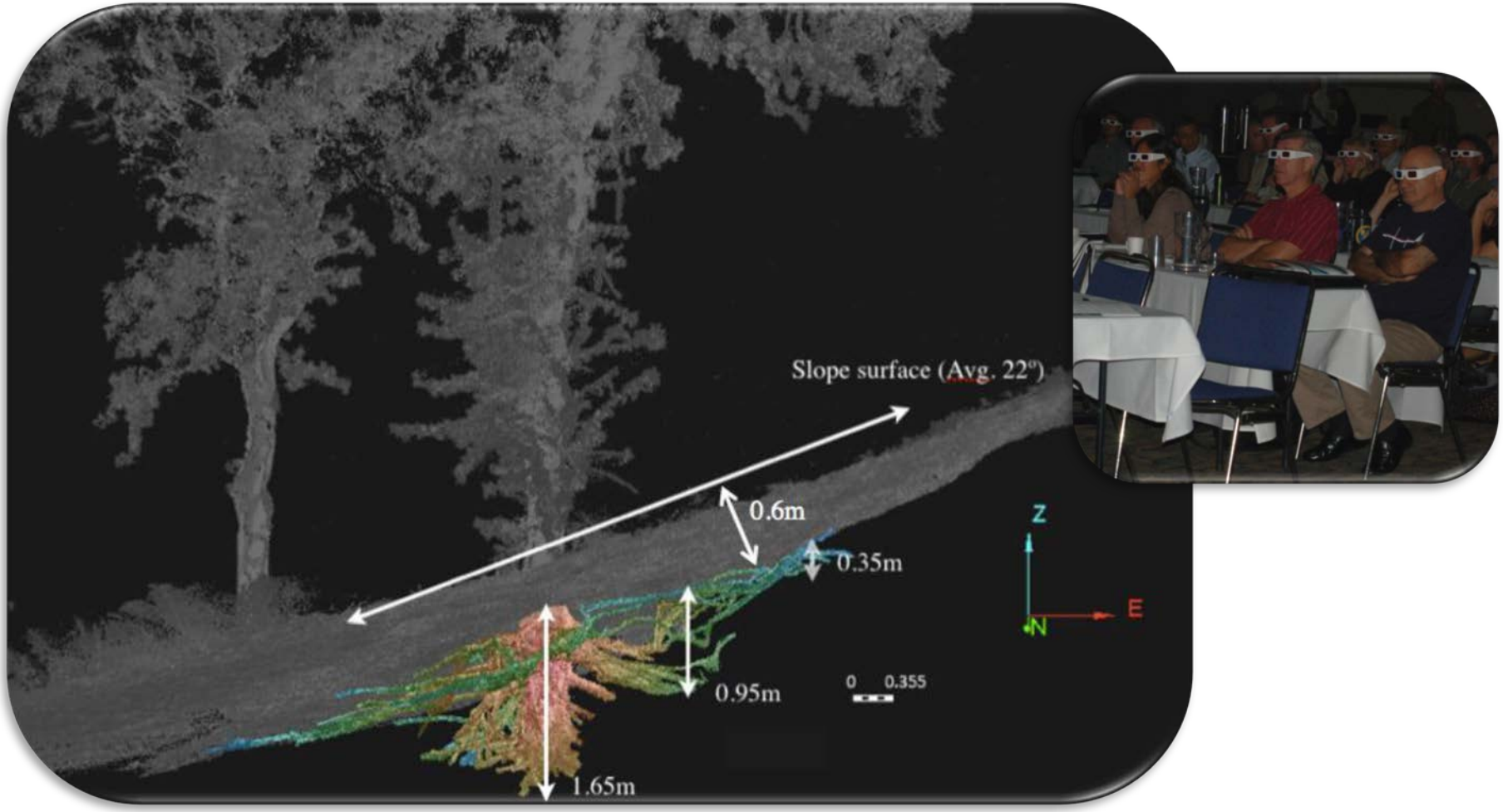
Symposium take away points

- Vegetation poses a relatively low risk to levee stability.
- Develop regionally and locally relevant science and expertise.
- Presence of trees tended to reduce number of burrows



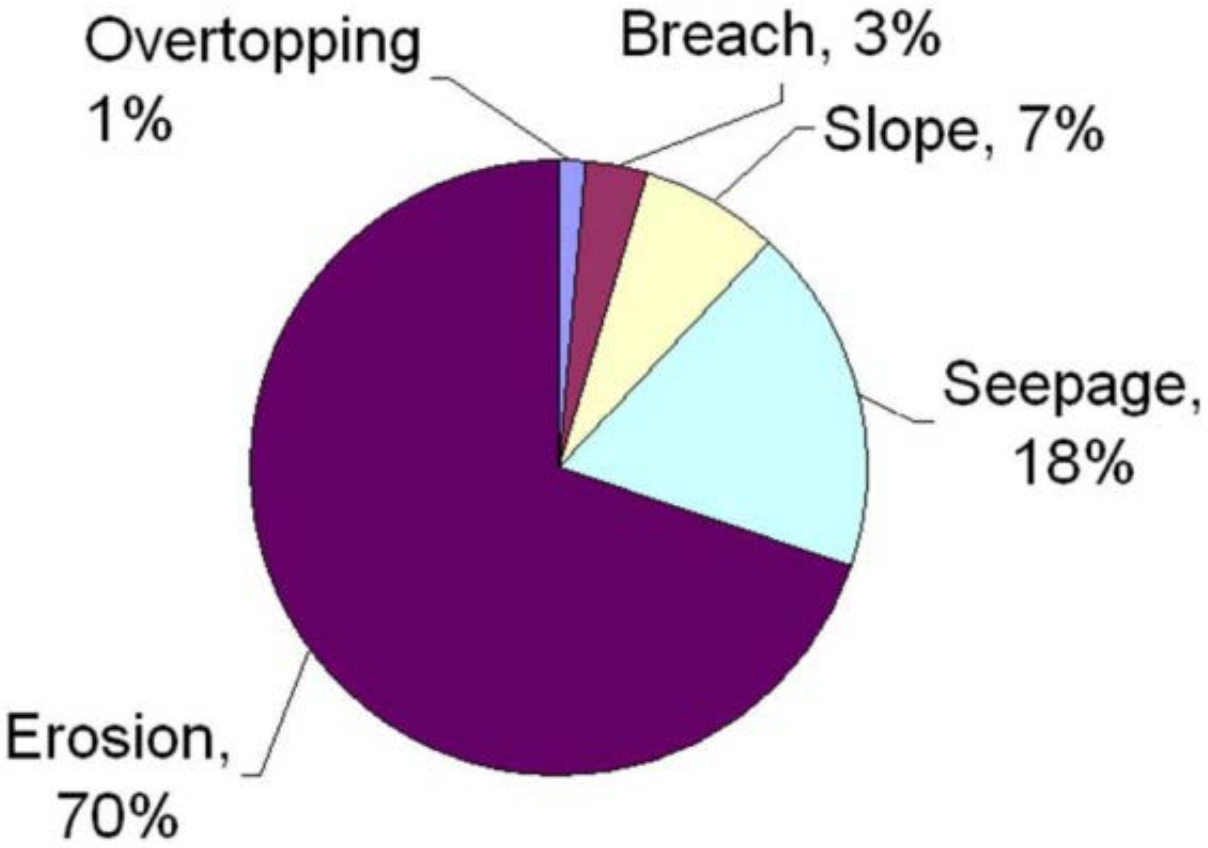
Waterside **Landside**

Symposium take away points



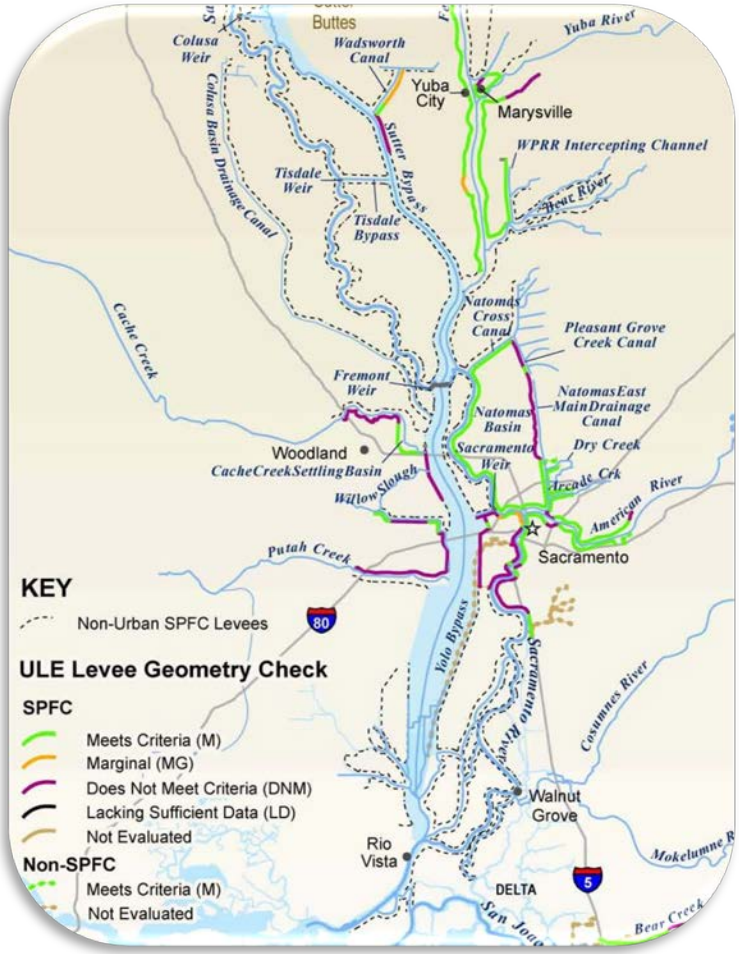
- California research effort is transformational and unique

Symposium take away points



Note: No failures attributed to levee vegetation

Roles & Responsibilities



Systemwide stewards

Maintaining agency/First responder

DWR's Roles & Responsibilities

Routine maintenance

Scientific research

Evaluations and inspections

Path Forward

The CVFPP will guide the discussion for improving maintenance and operations activities by addressing high risk issues first.

"The most important first."