



THE CORPS' VEGETATION REMOVAL POLICY: JEOPARDIZING NATIONAL PUBLIC SAFETY

First, we want to acknowledge that the Corps is a critical partner with DWR and local flood protection providers in protecting public safety. We cannot accomplish our FloodSAFE vision of improving integrated flood management without their active support, and we are pleased to have strong working relationships with our colleagues at the Corps in their district and division offices. Unfortunately the new Corps vegetation policy is counterproductive. The Corps' new approach to managing vegetation impairs our collective ability to improve public safety by diverting significant funds from more important repairs and improvements, increases the likelihood of erosion in some areas, and already is delaying important and much needed repairs and improvements. Furthermore, if implemented as currently written, the new vegetation management policy would be devastating to the environment of the Central Valley, especially to salmon, steelhead and other species listed under the State and Federal Endangered Species Acts.

Key problems with the Corps' new vegetation management on levees proposal include:

- The Corps' has not demonstrated that their new policy of widespread, costly vegetation removal will provide any tangible benefits to public safety.
- The proposal fails to distinguish between legacy levees and new levees, and the Corps' long-term participation in the events that have led to current conditions on the levees.
- The extremely high costs of levee construction and mitigation required under the new proposal (estimated to be in the several billions of dollars) will divert limited resources from the remediation of well documented critical risk factors, with little or no improvement in public safety.
- Whereas overtopping, underseepage, through-seepage, erosion and other modes of failure are well-documented and understood in the Central Valley, DWR has not seen evidence that well-managed vegetation poses significant risks in the Central Valley. Existing vegetation that currently provides erosion protection and soil reinforcement would be eliminated, increasing the risk of water-side scour and slope failures.
- The proposed vegetation policy would have devastating environmental impacts.
- There is a legal necessity for the Corps to initiate preparation of an environmental impact statement under the National Environmental Policy Act and consultation under the Endangered Species Act (ESA), which it has not done. The Center for Biological Diversity has notified the Corps of its intention to litigate the ESA issues.
- The Corps' current approach unfairly shifts the burden of implementation of the new Corps policy, including environmental compliance, to State and local agencies.
- The proposed requirements in the vegetation variance process are so stringent and ambiguous that variances are unlikely to be issued except under rare, specialized, local circumstances.
- The Corps has no scientific information to support the position they are taking – the Corps should allow ongoing scientific research to inform its regulatory process before proceeding.

DWR's Proposed Solution. The Corps should cease implementation of its new policy and instead collaborate with DWR/DFG and other agencies on a practical regional variance process consistent with the *Central Valley Flood System Improvement Framework*, with the following key features:

- Provide a regional approach that addresses the unique setting and history of the Sacramento, San Joaquin, and Delta levee systems.

- Provide the opportunity to allow well-managed, woody vegetation on all levee slopes, as determined by the variance, and does not foreclose vegetation options on all but the lower 1/3 waterside of levees. (see Figure 1 below)
- Provide clear guidance on the level of detail needed for a variance, how that detail will be evaluated, and an appeal procedure should the Corps and the local sponsor not agree on the outcome of the process.
- Initiate consultation under the Endangered Species Act and complete a genuine NEPA analysis.



Figure 1

Sacramento River levees looking towards the City of West Sacramento in 1955, prior to acceptance of the Sacramento River Flood Control System by the State of California in 1958—note mature trees along both levees. In many cases, the Corps turned over levees to the State with mature trees in place. It is inappropriate in these instances to claim that the presence of trees indicates deferred maintenance.

INTERIM EVALUATION OF LEVEE PERFORMANCE DATA IN CALIFORNIA

April 7, 2010

Overview

The California Department of Water Resources (DWR) is conducting an unprecedented evaluation of 2,100 miles of levees comprising the Central Valley Flood Control System under the Urban and Non-Urban Levee Evaluations (ULE/NULE) Program. This study is roughly 70 percent complete. In addition, the recently completed DWR Delta Risk Assessment Study (DRMS) has also evaluated over 600 additional miles of levees in the Delta. Both of these programs included a comprehensive data collection process. Historic performance data was collected from numerous sources including federal, state and local agencies. Collected data included reports, interview records, reconnaissance study reports, past maintenance records, maps, as-built records and relevant newspaper records. This comprehensive data collection effort resulted in a large amount of data that was electronically scanned and catalogued in a levee evaluation database. The database currently consists of over 10,000 records. This data was evaluated to understand the statistical trends in levee performance data. The following paragraphs present an interim summary of these performance records.

Levee Performance Data

The historical information has been evaluated and significant events related to levee performance were grouped into categories including seepage, stability, erosion, overtopping and levee breach. The data gathered indicate that 966 records relate to seepage, 373 relate to slope instability and subsidence, 3,677 relate to erosion, 73 records relate to overtopping and 179 records relate to levee breach. Levee performance data from DRMS outside the ULE/NULE project area included detailed records of over 150 breaches that flooded numerous Delta Islands over the years.

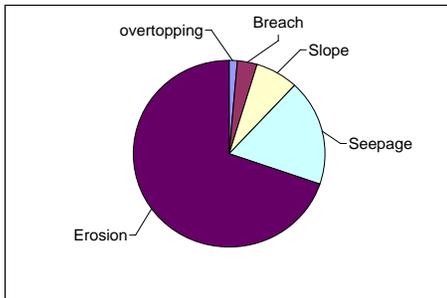


Figure 1. Levee performance records in the ULE/NULE study

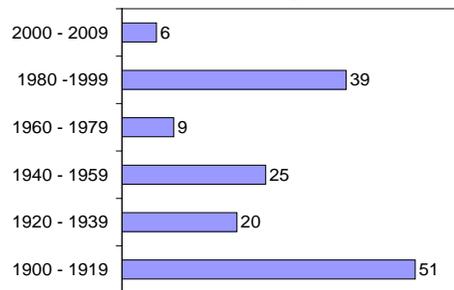


Figure 2. Breach records in the Delta and outside ULE/NULE study area

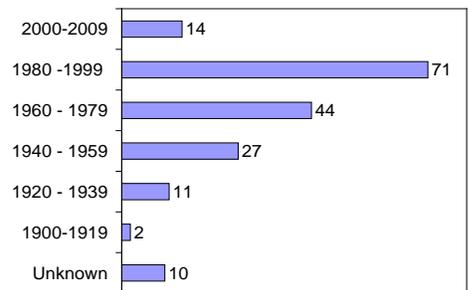


Figure 3. Breach records in the ULE/NULE study area

Many of these performance records contained additional data that discuss factors that may have caused the adverse performance. Also, over 350 miles of urban levees are being evaluated in more detail using geotechnical data obtained from field investigations. Based on the review of performance data, geotechnical analyses and literature, the primary factors that influence levee performance consisted of levee foundation characteristics, levee material, levee geometry, and hydraulic head. Additional external factors that influence levee performance consisted of animal burrows and the presence of utility penetrations.

Vegetation

Performance data was reviewed to understand the influence of vegetation on levee performance. Based on this review, vegetation did not appear to have played a role in any of the 179 records of levee breach in the Central Valley and 150 recorded breaches in the remaining Delta levees. Review of the collected data also suggests that the influence of vegetation on levee performance is of low importance: out of the 5,089 records of performance issues, 8 records could be associated with levee vegetation.

Background. For decades, the Department of Water Resources (DWR) and the Corps of Engineers (Corps) have managed the Central Valley levee system in a way that has allowed vegetation to remain on levees for habitat and other

purposes. However, in the past several years the Corps has initiated a significant policy change that, if implemented, would require most of this vegetation to be removed. The new Corps vegetation policy does little or nothing to reduce the known flood risks in the Central Valley, has the unintended consequence of actually increasing flood risks for the Central Valley and would be devastating to the environment of the Central Valley, especially to salmon, steelhead and other species listed under the State and Federal Endangered Species Acts. Key milestones in the timeline of this controversy include:

- ❖ 1955 – The Corps’ standard operations and maintenance manuals for the Sacramento and San Joaquin Rivers were revised to allow “brush and small trees” on the waterward slope of levees where desirable – these provisions remained in effect for the next five decades, during which no failures of project levees were attributed to the presence of vegetation.
- ❖ 1958 – California accepted responsibility from the Corps for the Sacramento River Flood Control System – substantial numbers of mature trees and other vegetation were present at that time.
- ❖ 1996 – The Water Resources Development Act (Section 202(g)) directed a review of the Corps’ vegetation management guidelines, which are required to “address regional variations in levee management and resource needs”
- ❖ 2000 - 2001 – USFWS and NOAA Fisheries proposed to adopt “jeopardy opinions” if the Corps failed to provide for additional vegetation on levees. The Corps softened its approach to levee design and construction in order to avoid those jeopardy opinions.
- ❖ 2005 – Multiple levee failures occurred in Louisiana during Hurricanes Katrina and Rita.
- ❖ 2006 -- The Sacramento River Bank Protection Interagency Working Group established a collaborative process among DWR, USFWS, NOAA Fisheries, the Corps, and others. Subsequent levee repairs have included substantial amounts of vegetation for habitat purposes.
- ❖ 2007 – The Corps signaled through a “White Paper,” and through other communications, that it intended to require substantial vegetation removal, ostensibly in response to the Katrina disaster (despite the fact that the Interagency Performance Taskforce determined that the Katrina flooding was caused by engineering design and construction failures - not vegetation).
- ❖ 2007 – The “California Levees Roundtable” (a collaborative process including the Corps), was established, ultimately leading in 2009 to the *California Central Valley Flood System Improvement Framework* committing the Corps to ongoing collaboration.
- ❖ 2009 – The Corps in ETL 1110-2-571 (ETL) adopted stringent vegetation guidelines applicable nationwide (including California), significantly expanding the requirements for vegetation removal.
- ❖ 2010 – The Corps proposed new restrictions to its vegetation variance process (VVP) that would employ a piece-meal approach and sharply restrict the vegetation on levees and create substantial new burdens for maintaining agencies. Together, the ETL and VVP would require:
 - Removal of vegetation without any potential for a variance on the upper third of the river-side slope, the crown, and the land-side slope of all Central Valley levees. In the absence of a variance, removal of all vegetation over 2” in diameter on the remainder of the system would be required.
 - A cumbersome and expensive, site-by-site variance process, with no option for a regional, system-wide solution.