

Dam Safety California and the Nation



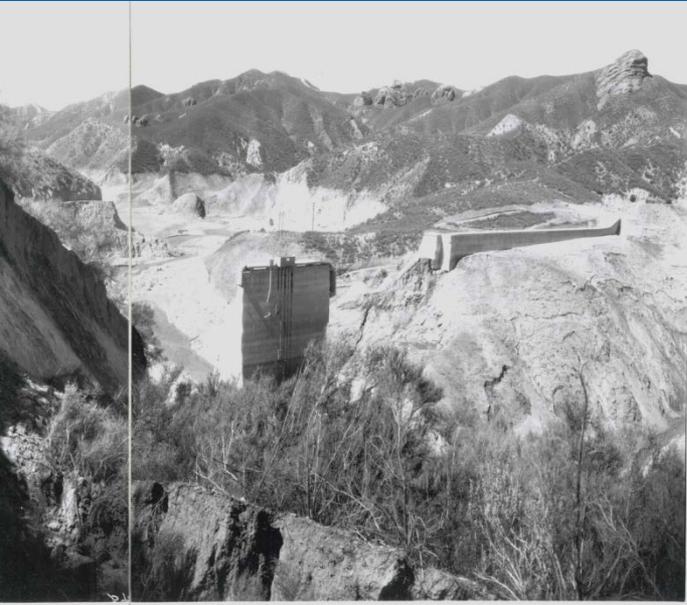
California Water Commission

September 19, 2012

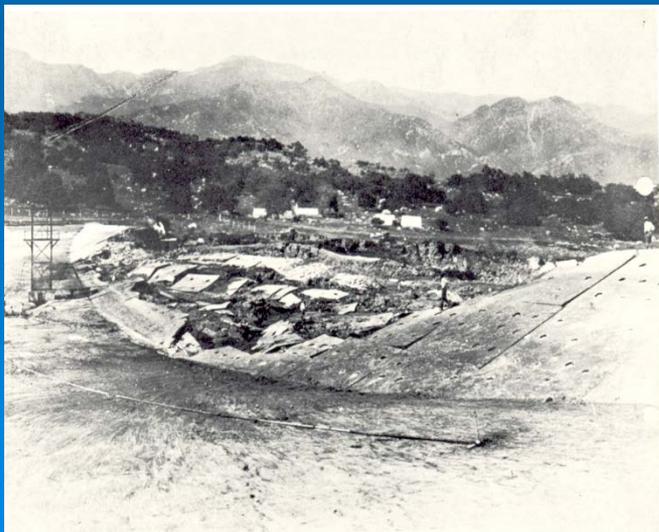
By

David Gutierrez, Chief
Division of Safety of Dams

Historic California Dam Failures



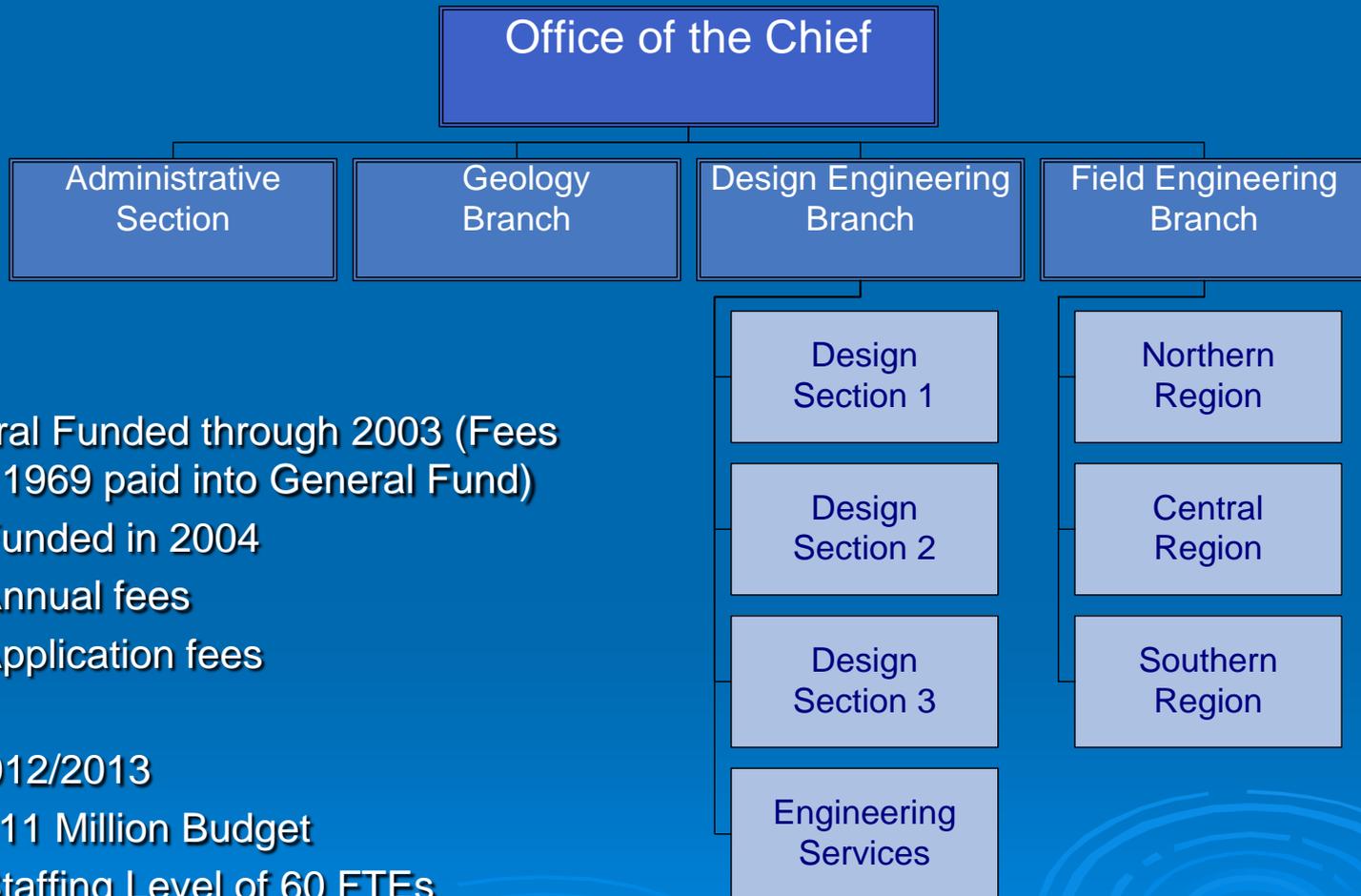
- Lower Otay: 1916– 30 deaths
- Sweetwater: 1916 – 8 deaths
- Sheffield: 1925
- St. Francis: 1929 – 400 deaths
- Baldwin Hills: 1965 – 5 deaths



Statutes and Mission

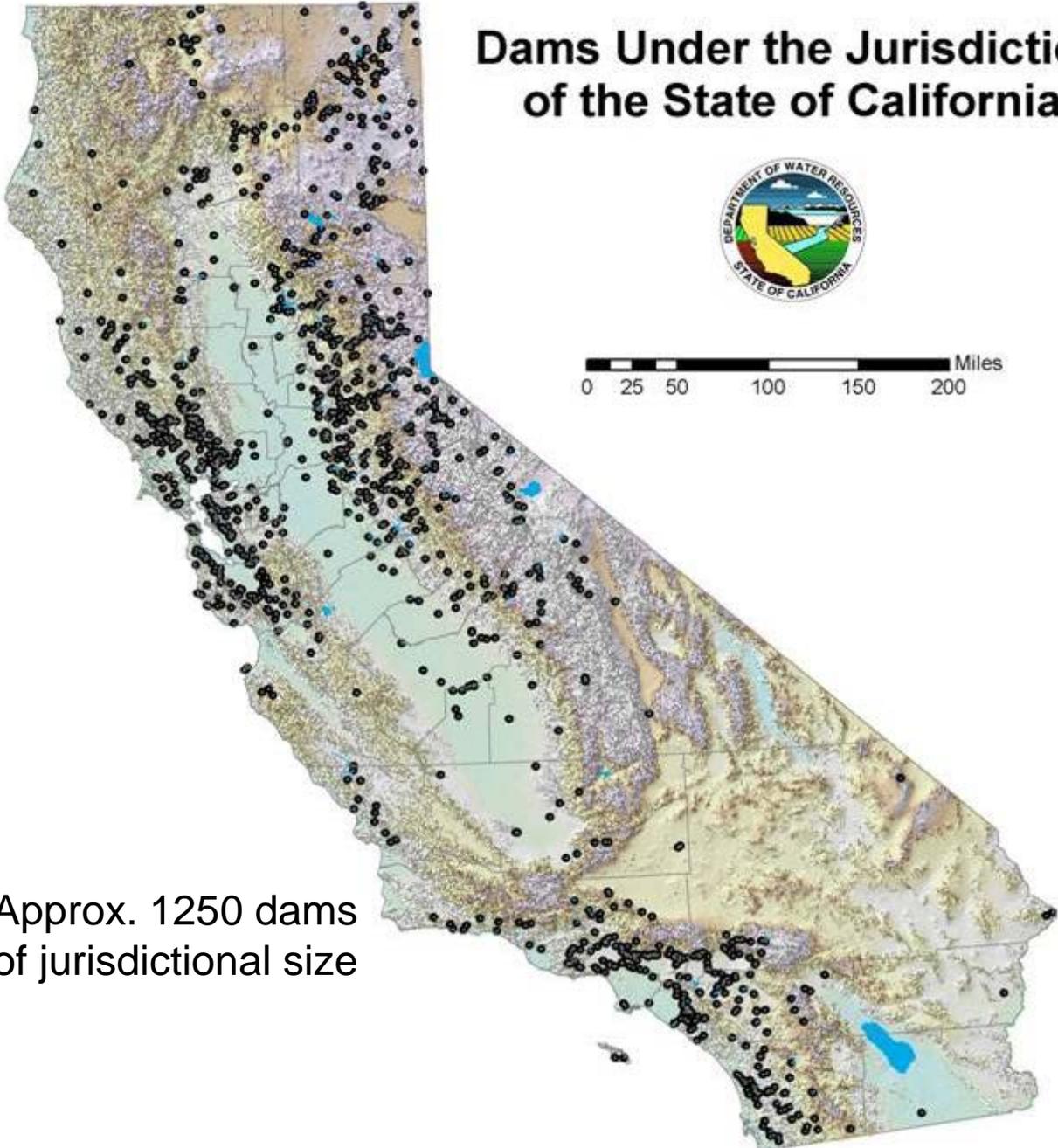
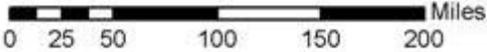
- California Water Code, Division 3, Dams and Reservoirs
 - Provides for supervision over non-federally owned dams
 - DSOD within DWR
- Mission: To prevent dam failure for the purpose of safeguarding life and protecting property

DSOD Organization & Budget



- General Funded through 2003 (Fees since 1969 paid into General Fund)
- Fee Funded in 2004
 - Annual fees
 - Application fees
- FY 2012/2013
 - \$11 Million Budget
 - Staffing Level of 60 FTEs

Dams Under the Jurisdiction of the State of California

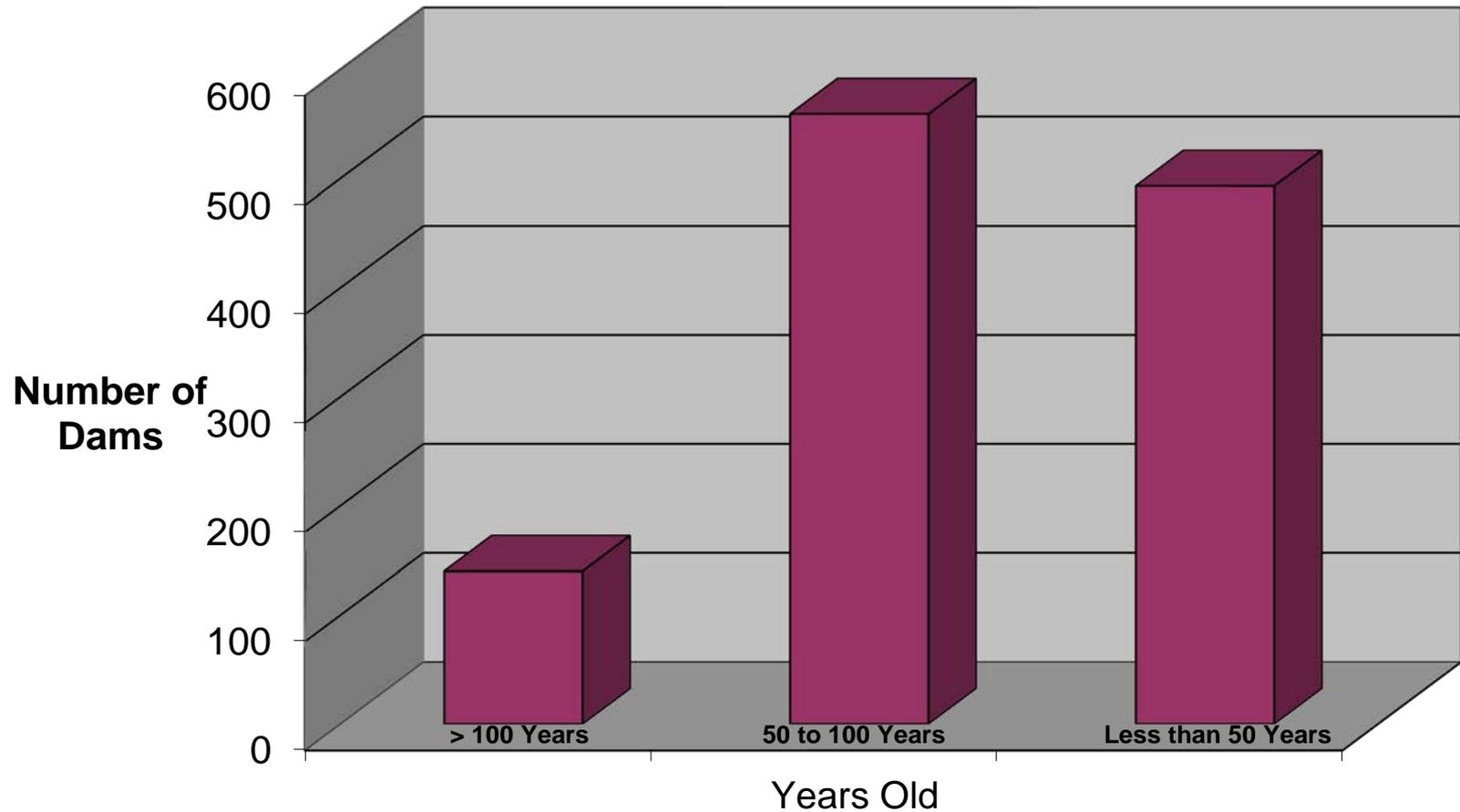


Approx. 1250 dams
of jurisdictional size



Dam Inventory

Age of Dams



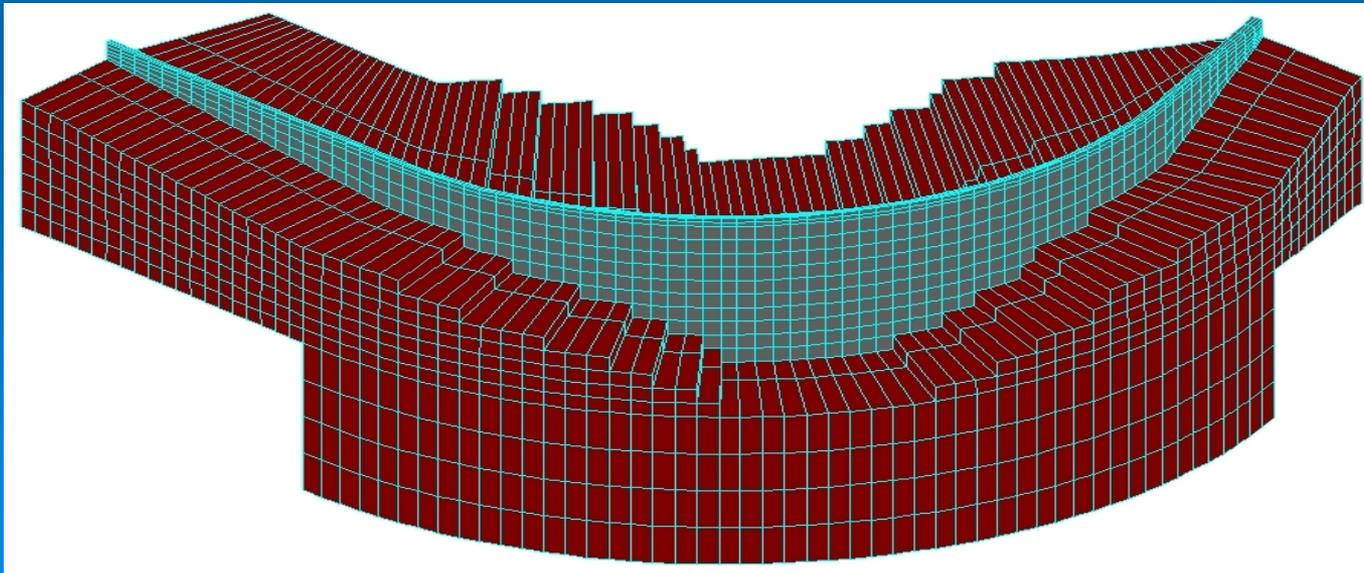
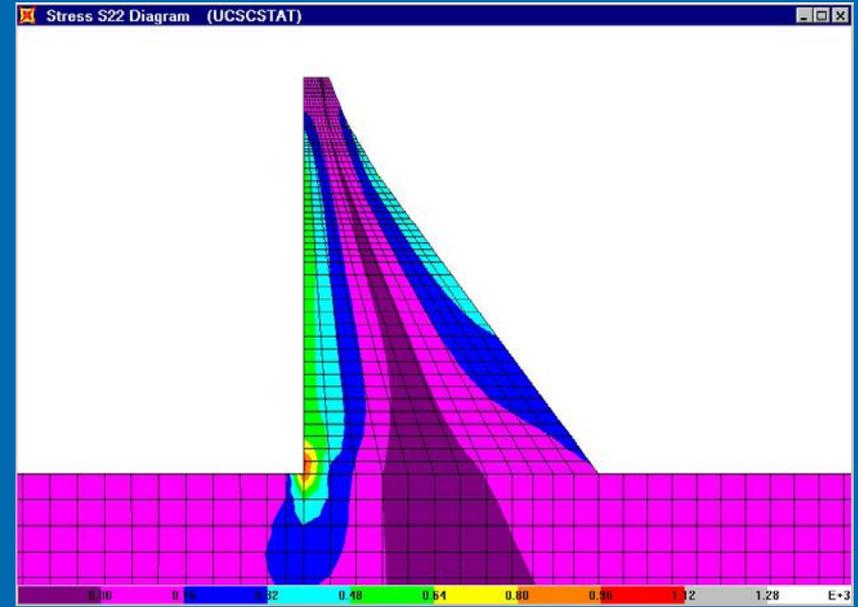
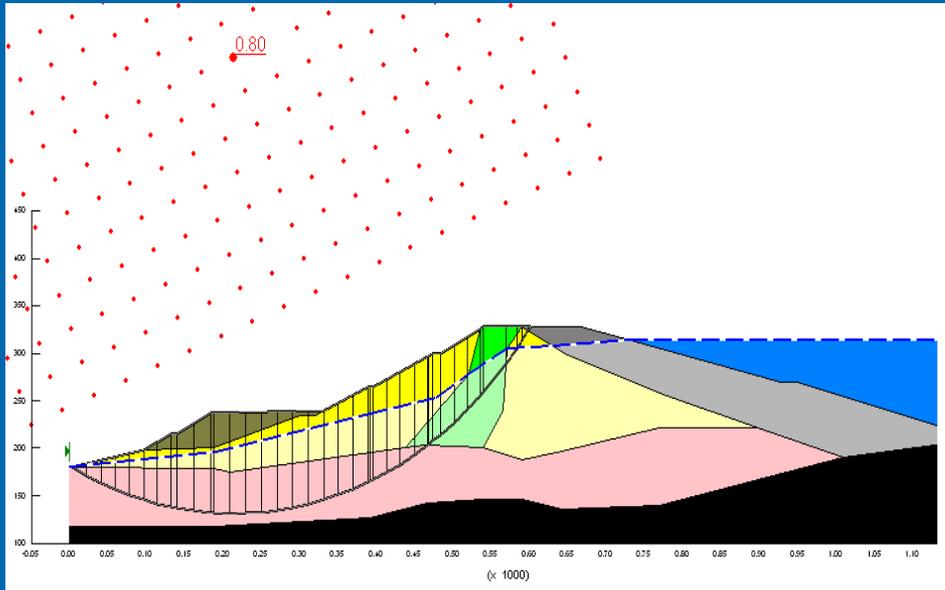
Dam Design

New and Existing Dams

- Hydrologic (Design Storm/PMF)
- Stability Re-assessments
- Structural Analyses
- Special Studies



Evaluations



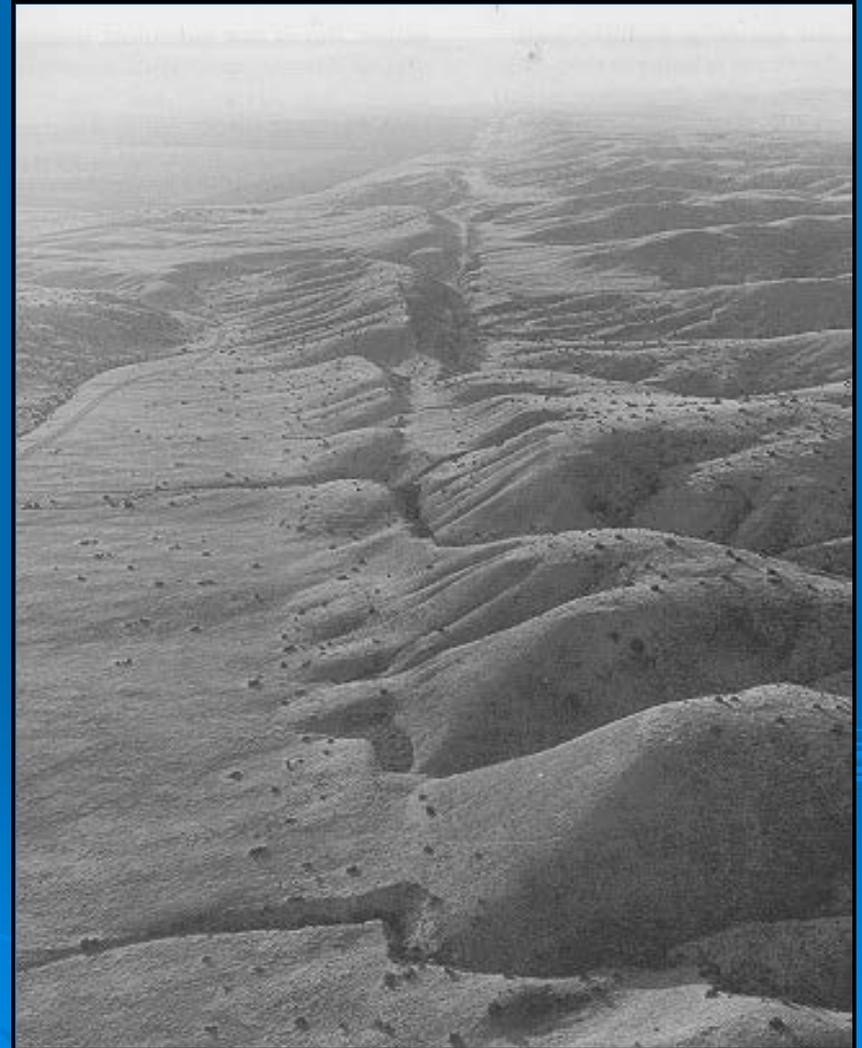
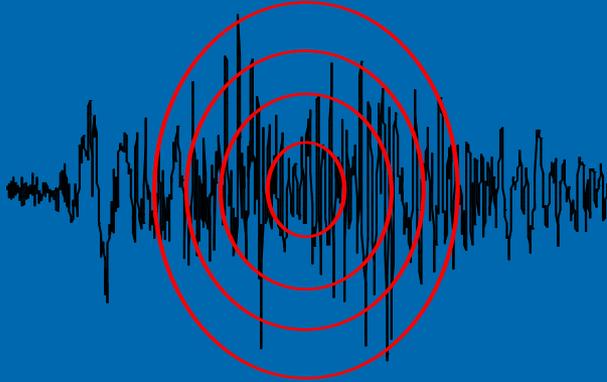
Dam Construction and Supervision





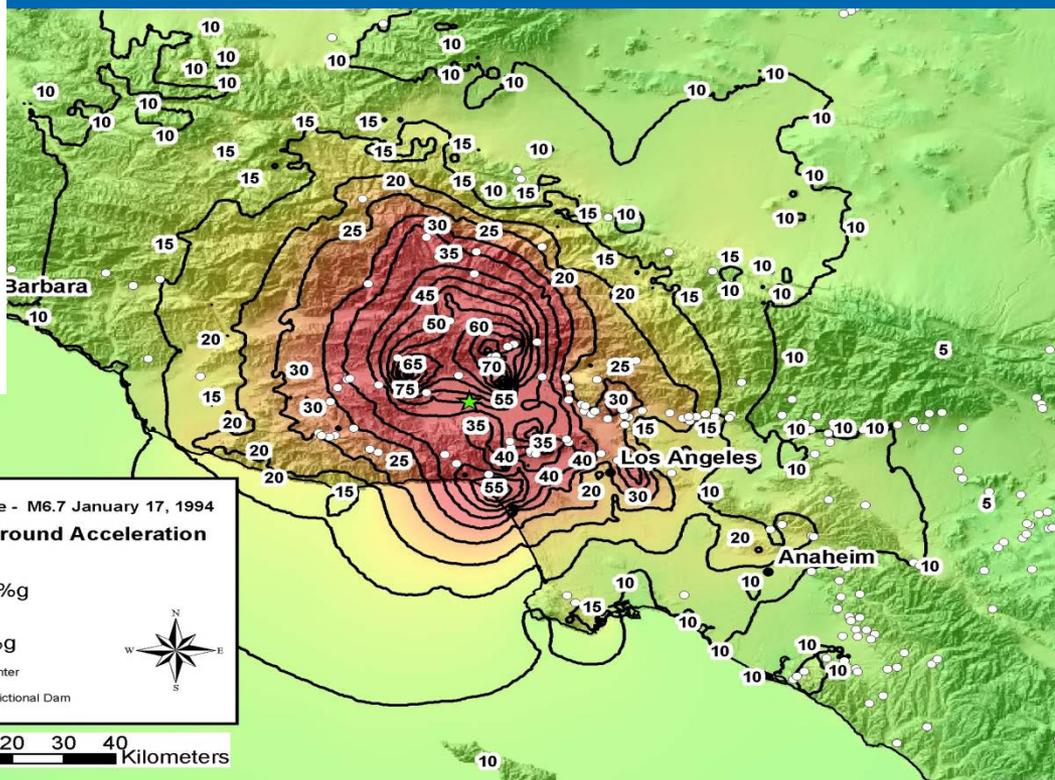
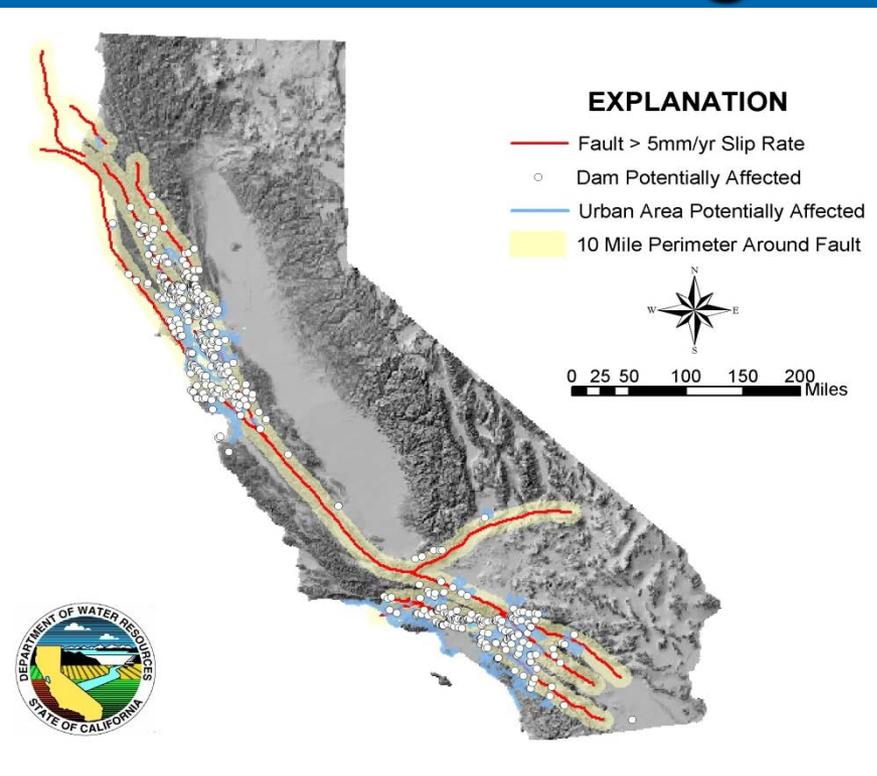
Geologic Reviews

New and Existing Dams



- Seismotectonic Evaluations
- Fault and Ground Motion Assessments

Post-Earthquake Assessment and Emergency Response

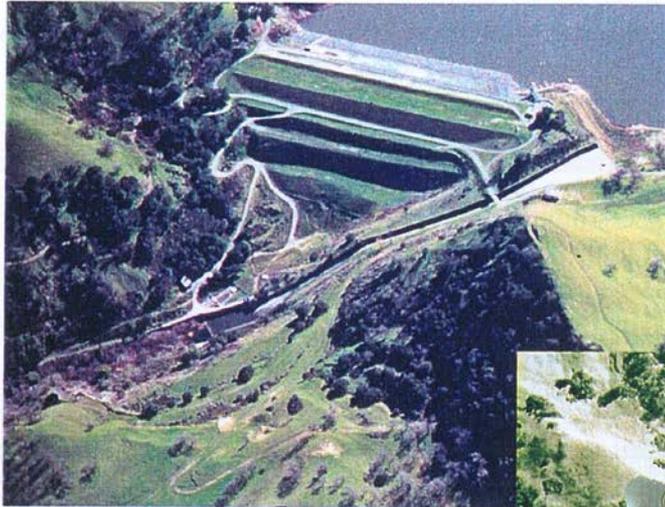


Calaveras Dam

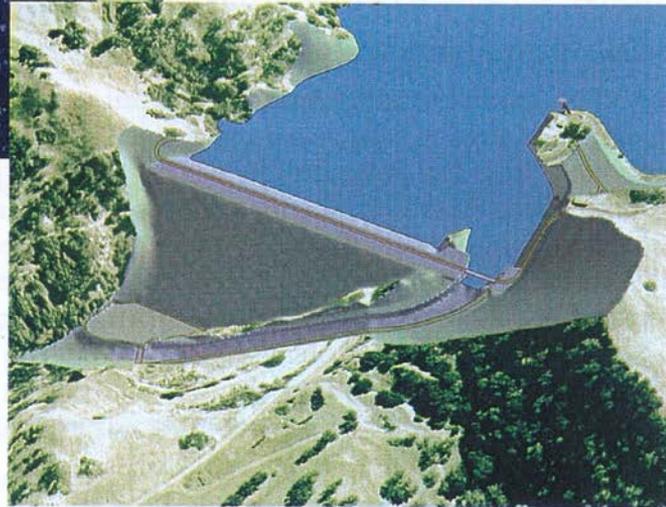


March 23, 1918.

Calaveras Dam



Existing Dam



View of Proposed Calaveras Dam Replacement

Big Tujunga Dam



San Clemente Dam

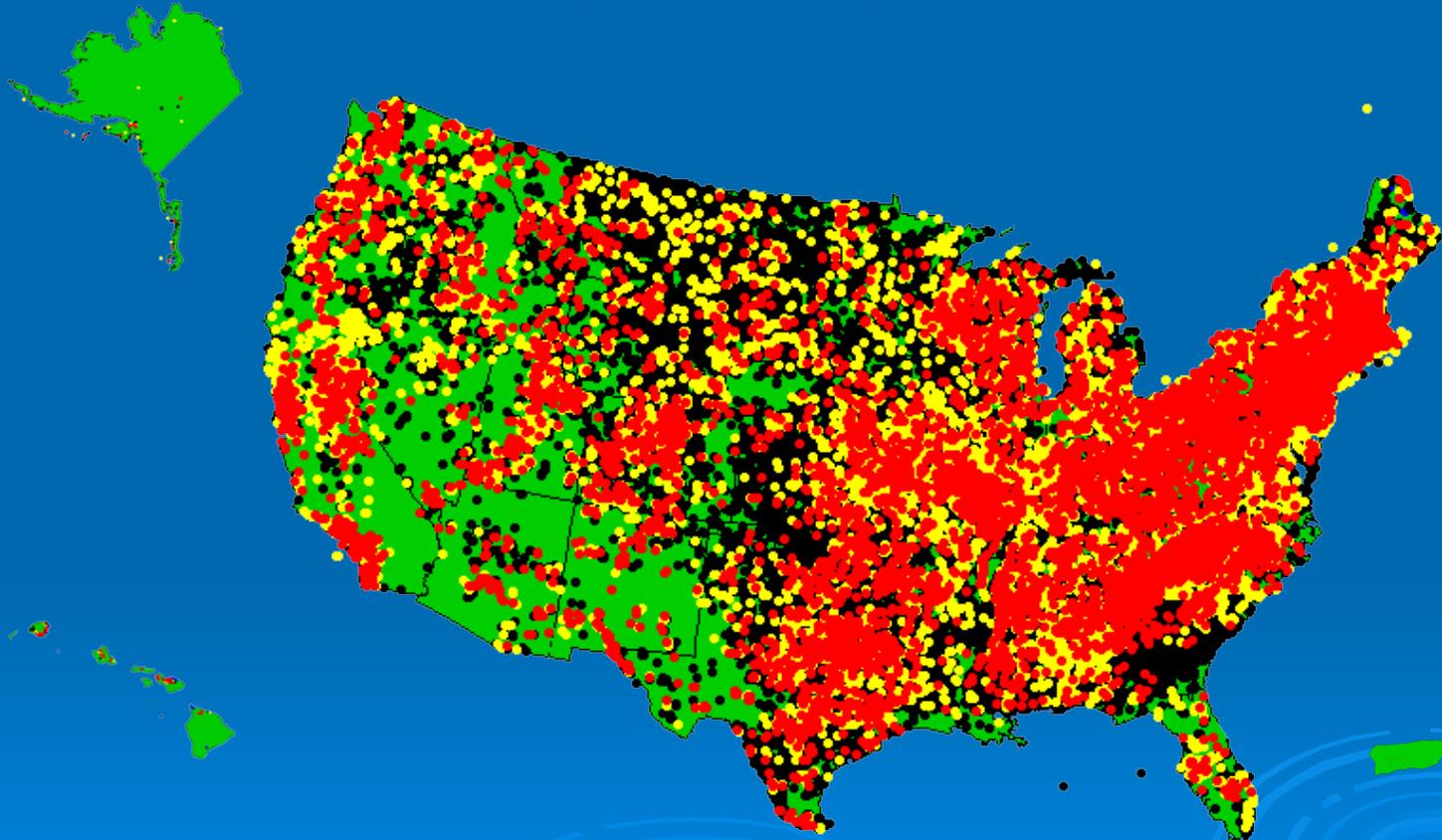


San Vicente Dam



National Dam Safety

(Approximately 90,000 State Regulated Dams
10,000 State-Regulated High Hazard in the NID)



Numbers taken from the 2007 National Inventory of Dams

Dam Failures

Johnstown

Pennsylvania-1889
2200 Fatalities



Historic Dam Failures

Kelly Barnes Dam
Toccoa Falls, Georgia 1977
39 Students lives lost

Buffalo Creek
West Virginia – 1972
125 lives lost



Teton Dam
Idaho – 1976
11 lives lost
\$1 billion damage



National Dam Safety Act

National Dam Safety Program



Phase I Inspection Program: 1978-1981

Inventory and Inspection

ASDSO

Established in 1984



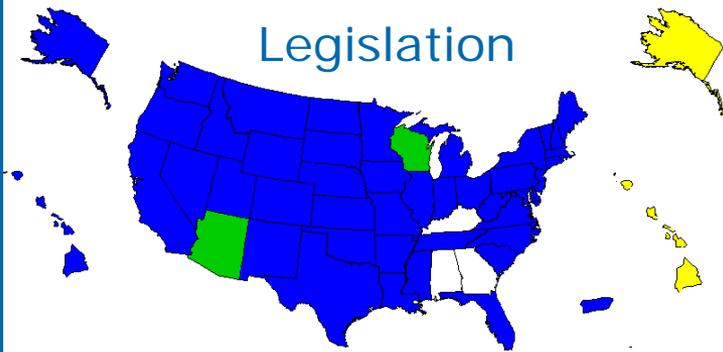
1985 Membership: 165

2012 Membership: 3000

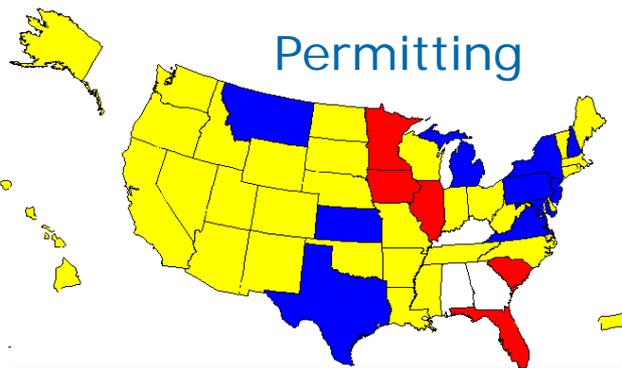


State Dam Safety Programs Differ

Legislation



Permitting



Enforcement



- Maturity of programs
- Funding and staffing
- Strength of laws
- Experience of staff

Dam Safety Challenges

(Varies by State)

➤ Technical

- Research needed to refine evaluations

➤ Resources

- Funding for Dam Rehabilitation
- Funding for Dam Safety Programs



Questions?

DSOD's website:

<http://damsafety.water.ca.gov/>