



California

Flood risk and mitigation

Overview

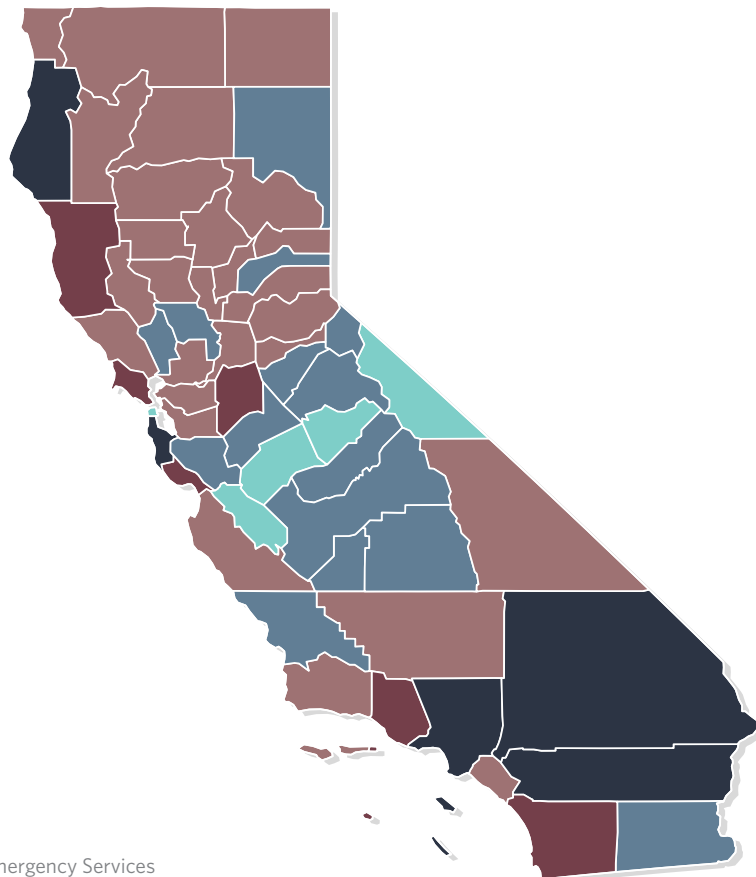
Floods are becoming more intense in California and are one of its most common disasters.¹ Since 1992, every county in the state has had at least one federally declared flood disaster.² As these events become more serious, the physical and economic damage to communities and the threats to human lives and ecosystems also increase. Between 2000 and 2015, 12 federal disasters and emergencies were declared for floods and severe storms in California, which exceeded \$956.8 million in total assistance from the U.S. government.³

Figure 1

All California Counties Have a History of Flooding State and federal declared flood disasters, 1950-2012

Number of disasters

- 9-12
- 13-16
- 17-20
- 21-25
- 26-34



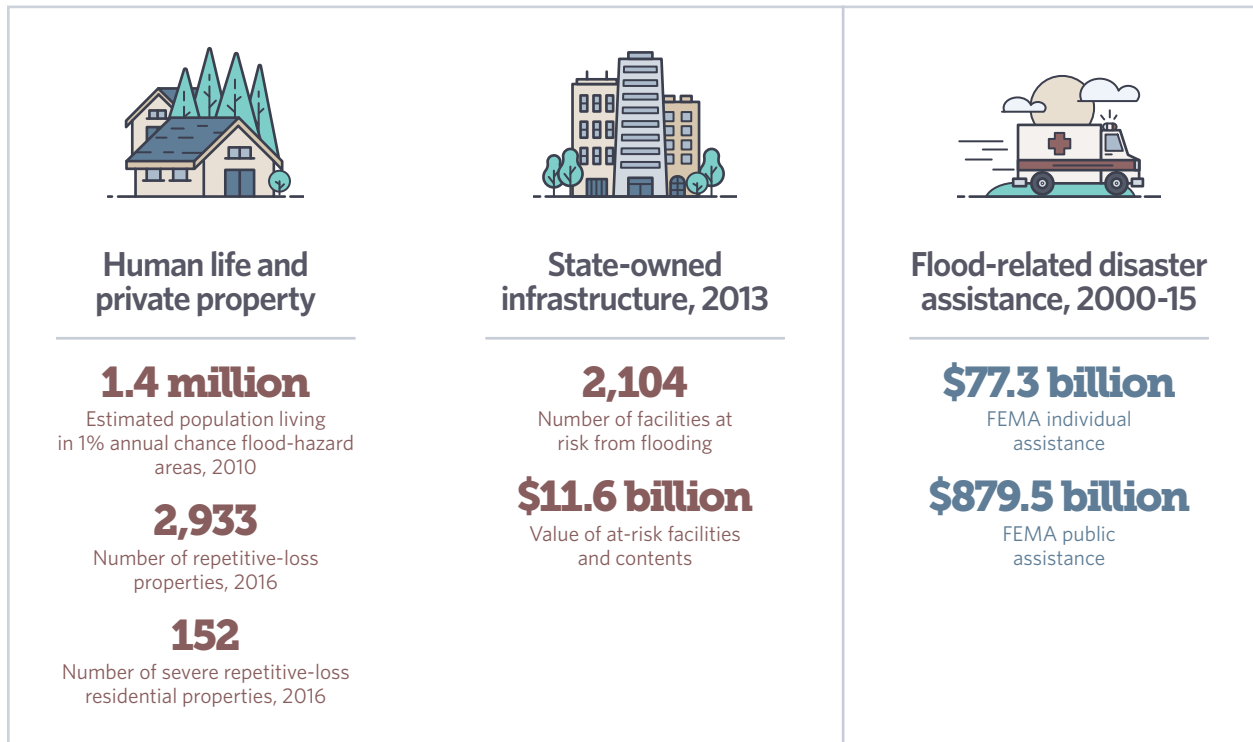
Source: California Governor's Office of Emergency Services

© 2016 The Pew Charitable Trusts

Figure 2

1.4 Million Californians Live in Flood-Risk Areas

Life, property, and public infrastructure at risk from flooding, and past federal government aid



Notes: One percent annual chance flood-hazard areas are locations subject to flooding that has a 1 percent chance of being equaled or exceeded in any year. Repetitive-loss properties are National Flood Insurance Program-insured buildings and/or contents for which the program paid at least two claims of more than \$1,000 in any 10-year period since 1978. Severe repetitive-loss properties are those for which the program has either made at least four claim payments for buildings and/or contents of more than \$5,000 or at least two building-only claim payments for which the total amount exceeds the current value of the property. Disaster assistance figures are as of Aug. 16, 2016.

Sources: Mark English, "Special Flood Hazard Area Exposure Resource Map v2.0," accessed Aug. 6, 2016, <http://www.arcgis.com/home/webmap/viewer.html?webmap=5767b4c3ac164e54916bc7ebc20d25d6>; California Governor's Office of Emergency Services, *California Multi-Hazard Mitigation Plan* (2013), http://hazardmitigation.ca.gov/docs/SHMP_Final_2013.pdf; Federal Emergency Management Agency, "Repetitive Loss State/Community Drilldown Non-mitigated Records Only," Jan. 31, 2016; Federal Emergency Management Agency, "Severe Repetitive Loss State Summary/Residential (Validated) Properties Only," Jan. 31, 2016; and Federal Emergency Management Agency, "Disaster Declarations," accessed Aug. 16, 2016, <https://www.fema.gov/disasters>

© 2016 The Pew Charitable Trusts

Federal flood insurance helps communities prepare

Ninety-nine communities in California participate in the National Flood Insurance Program's Community Rating System. The voluntary program provides reduced insurance premiums in communities that proactively implement flood plain management practices—such as acquisition and relocation of flood-prone structures, elevation of structures, and flood proofing—that exceed the program's minimum requirements.⁴ The highest-rated communities in the state are the city of Roseville and Sacramento County, which earned 45 and 35 percent discounts, respectively, for eligible properties.⁵

Figure 3

State and Federal Investment Supports California's Mitigation Efforts

Risk-reduction expenditures by program and level of government

Program	Federal share	State share
Pre-disaster and other mitigation grants	\$124.2 million	\$133.4 million
Hazard Mitigation Grants made after flood-related disasters	\$111.2 billion	\$65.4 million

Sources: Federal Emergency Management Agency, "FEMA Hazard Mitigation Program Summary—Open Government Dataset," Aug. 31, 2016, <https://www.fema.gov/media-library/assets/documents/28323>; Federal Emergency Management Agency, "Hazard Mitigation Assistance Pre-Disaster Mitigation Data," Aug. 25, 2016, <https://www.fema.gov/media-library/assets/documents/103341>; Federal Emergency Management Agency, "Hazard Mitigation Assistance Flood Mitigation Assistance (FMA) Data," Aug. 25, 2016, <https://www.fema.gov/media-library/assets/documents/103339>; Federal Emergency Management Agency, "Repetitive Flood Claims (RFC) Data—FEMA Hazard Mitigation Assistance (HMA) Grant Programs," Aug. 13, 2016, <https://www.fema.gov/media-library/assets/documents/103321>; and Federal Emergency Management Agency, "Severe Repetitive Loss (SRL) Data—FEMA Hazard Mitigation Assistance (HMA) Grant Programs," Aug. 18, 2016, <https://www.fema.gov/media-library/assets/documents/103337>

© 2016 The Pew Charitable Trusts

Importance of policy

Communities must prepare for weather-related catastrophes such as floods and hurricanes, and U.S. policymakers should consider reforms that improve protection and preparation, minimize disruptions to the economy, and reduce costs to the federal government and taxpayers by:

- Increasing federal investment in proactive mitigation programs that help communities prepare for and reduce risk of floods.
- Improving resilience and durability requirements for infrastructure that is rebuilt after disasters.
- Protecting ecosystems, such as wetlands, salt marshes, and dunes, which can absorb storm impacts and help shield property.
- Reforming the National Flood Insurance Program to better communicate actual risk, break the cycle of repeated loss and rebuilding in the most flood-prone areas, and provide incentives to compel communities and homeowners to prepare in advance of floods.

Endnotes

- 1 Governor's Office of Emergency Services, *California Multi-Hazard Mitigation Plan* (2013), http://hazardmitigation.calema.ca.gov/docs/SHMP_Final_2013.pdf.
- 2 Ibid.
- 3 Federal Emergency Management Agency, "Disaster Declarations," accessed May 26, 2016, <https://www.fema.gov/disasters>. Sum of individual assistance and public assistance for California flood-related major disaster and emergency declarations from 2000 to 2015.
- 4 National Flood Insurance Program, "Community Rating System (CRS)," https://www.floodsmart.gov/floodsmart/pages/crs/community_rating_system.jsp.
- 5 Federal Emergency Management Agency, "Community Rating System" (2016), https://www.fema.gov/media-library-data/1476294162726-4795edc7fe5cde0c997bc4389d1265bd/CRS_List_of_Communities_10_01_2016.pdf.

For further information, please visit:

pewtrusts.org/flood-prepared-communities

Contact: Laura Lightbody, project director

Email: llightbody@pewtrusts.org

Project website: pewtrusts.org/flood-prepared-communities

The Pew Charitable Trusts is driven by the power of knowledge to solve today's most challenging problems. Pew applies a rigorous, analytical approach to improve public policy, inform the public, and invigorate civic life.