California Tsunamis: State Inundation Maps and Lessons Learned from the Japan 2011 Earthquake and Tsunami

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Ms. Pridmore will present an overview of California's tsunami risk, the state's official inundation maps, preparedness efforts, and lessons learned from the 2011 Japan event. More than eighty tsunamis have been observed or recorded in California in historic times. Fortunately, most of these have been small and did little or no damage. Though damaging events have occurred infrequently, they are a possibility that must be considered in coastal communities. Both local and distant tsunami sources are of concern for our state coastline. The Japan 2011 event resulted in 27 harbors damaged statewide with more than $50 million in Federal disaster claims from three California counties. Our state's worst case scenario is more likely a 9.0M earthquake originating in the Alaskan Aleutian subduction zone creating a tsunami that would reach our coastline in approximately five hours. For the Bay Area, portions of the San Francisco coastline could likely experience inundation up to 15 feet above sea level at high tide. CGS works closely with the Earthquake and Tsunami Preparedness Branch of Cal EMA and with the coastal NWS offices to assist communities and emergency managers in understand their tsunami risk and strengthening their tsunami emergency plans.

Ongoing work also includes CGS and CalEMA working with NOAA and FEMA to implement a plan to increase awareness of tsunami generated hazards to the maritime community (both ships and harbor infrastructure) through the development of in-harbor hazard maps, offshore safety zones for boater evacuation, and associated guidance for harbors and marinas before, during and following tsunamis.

Biography: I grew up in Southern California and attended Long Beach State (B.S. Geology, 1980) and San Diego State (M.S. Geology, 1983). As a grad student at SDSU I spent one summer doing reconnaissance work for Milchem, sampling stream sediments for barite in the eastern Klamaths and northern Sierra. My master's thesis was one of the many out of SDSU at the time that centered on mid Tertiary extensional detachment faulting along the Colorado River corridor. After a few post graduate years of considering the PhD programs at University of Washington and U.C. Santa Barbara, I left academics and went to work for Leighton and Associates, at their geotechnical field office in Riverside. I spent two years learning the ropes of engineering geology; then eventually went to work for the California Geological Survey (then known as Division of Mines and Geology). Since 1989 I have worked in a variety of CGS programs: mineral land evaluation, regional mapping, school site reviews, and for the last 18 years most of my work has been within seismic hazard mapping. More recently I have been involved with CGS's tsunami preparedness and outreach working jointly with Cal EMA. Throughout my career at CGS I have been actively involved with educational outreach to California teachers, teaching workshops and supplying maps and other materials.