

# Wai Halana

*Hawaii Flood News*

## TSUNAMI: Learning from Experience in Hawaii

About four hours after the magnitude 9.0 earthquake devastated Japan in March, tsunami waves generated by the quake struck the western Hawaiian Islands, destroying homes and resorts, killing significant wildlife, and strewing toxic debris along protected beaches. While Hawaii's coastal resource managers were well prepared for a tsunami event and no human lives were lost, lessons were learned that may benefit other managers in areas at risk from tsunamis, storm surge, or coastal flooding.

"We are very fortunate not to have suffered any loss of human life or other tragedy, as have the people in Japan, and for that we are very grateful," says Barry Stieglitz, project leader for the Hawaiian and Pacific Islands National Wildlife Refuges. "But this tsunami was indeed a disaster at many levels, including for wildlife."

Among the key lessons managers cite are the importance of ongoing public education and outreach; not just having a plan in place, but continually practicing it; and the need for better coordination and planning after an event, which should include everything from sounding the all clear to addressing the emotional needs of personnel, as well as having emergency regulations in place that ensure speedy rebuilding that results in a stronger and more protected shoreline.

"It's not a matter of if a tsunami or other disaster will strike, but when," cautions Dolan Eversole, Hawaii Sea Grant extension agent and NOAA Sea Grant Coastal Storms Program Pacific regional coordinator. "People need to be prepared and be proactive."

### Urban Impacts

The tsunami waves arrived in Hawaii a little before midnight on March 10, continuing through the early hours of March 11, says Stieglitz.

On the inhabited islands, five hours of warning was enough to move visitors and residents safely to evacuation centers or higher ground, says Quince Mento, Hawaii County Civil Defense administrator.

On the island of Oahu, 3-foot waves rushed ashore in Honolulu, swamping Waikiki's beach and surging over the breakwall, but stopping short of the area's high-rise hotels. On the western side of the Big Island—where most of

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The current and selected past issues are also available at:

[www.hawaiiinfp.org](http://www.hawaiiinfp.org)

We welcome your comments and suggestions, as well as, newsworthy articles. Your submissions may be sent to the Department of Land and Natural Resources, Engineering Division, P.O. Box 373, Honolulu, Hawaii 96809.

If you'd like to receive the Wai Halana via email or wish to be removed from our mailing list, contact Jerome Acadimia at (808) 587-0254.

## Upcoming Events

### ASFPM 2012 Annual National Conference



The Association of State Floodplain Managers will convene the world's largest and most comprehensive floodplain management conference – our 36th annual gathering – the week of May 20 - 25, 2012, in San Antonio, Texas. We invite you to share your experiences with local, state, and federal officials, industry leaders, consultants, and other interested parties by presenting a paper relevant to our theme, "Mission Mitigation".

Throughout the week, 200 of the industry's experts will conduct plenary and concurrent sessions and share the state-of-the-art in techniques, programs, and resources to accomplish flood mitigation, watershed management, and other community goals. A three-day comprehensive exposition features the materials, equipment, accessories, and services vital to get the job done. Supplementary technical field tours and training workshops provide in-depth training. Numerous networking activities offer additional opportunities to learn from each other.

For more info, visit: [www.floods.org](http://www.floods.org)

## Meet Hawaii's Newest Certified Floodplain Manager



Congratulations to Lyon and Associates staff who recently earned their "Certified Floodplain Managers" certification.

**Patrick Carayoan**  
*Project Engineer*

**Ronald Gonzales, P.E.**  
*Vice President*

**Royce Miyahara**  
*Student Intern*

**Nicolo Olino**  
*Junior Engineer*

**Eric Torrate**  
*Project Designer*

**LYON ASSOCIATES**  
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# Hawaii County Floodplain Manager

UPDATE your contact info for Hawaii County's Floodplain Manager... after about a year hiatus, Mr. Frank DeMarco has resumed his duties as Hawaii County's Floodplain Manager.

*Phone Number*  
(808) 961-8042

*Email*  
fdemarco@co.hawaii.hi.us



## Flood Insurance Committee Corner

### FLOOD IN PROGRESS UPDATE

As you may have read in the last issue, FEMA has attempted to address this Flood-in Progress issue in black & white, but it still remains somewhat gray for many. This Insurance Corner will not attempt to clarify it further, rather will just share the latest information from FEMA.

As most of you know, there is typically a 30-day waiting period for a flood policy to go into effect. So, if a flooding event starts during that waiting period and you are affected by it, you are not covered for THAT flood. However, if flood insurance is required due to a loan (making, increasing, renewing, or extending), there is no waiting period. As mentioned in the last article, one of the initial drivers for the NFIP Bulletins issued by FEMA was that lenders were providing quick-closing loans for property owners so they could avoid the 30-day waiting period as the Mississippi and other rivers began to rise in April and May. Again though, if a flooding event was in progress when the policy became effective, there would be no coverage for THAT event. So, when flooding events start is what FEMA wishes to clarify.

So . . . the first NFIP Bulletin came out in mid-May (during the ASFPM conference) and generated perhaps more questions than it answered. When the Garrison Dam released its waters, the NFIP issued another Bulletin defining when that flooding event started. Feedback from the insurance industry and others was that more clarification was still needed. FEMA reached out to the insurance industry for input and has now issued a third Bulletin (visit the [Insurance Committee](#) web page for a copy). Here's the bottom line:

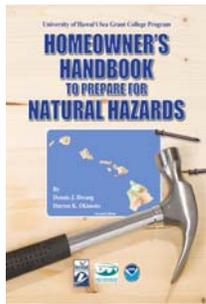
**Scenario A:** The community where the insured building is located first experiences a flood as defined in the SFIP.

**Scenario B:** The date and time of an event initiating a flood that causes damage, including but not limited to: i) a spillway is opened, ii) a levee is breached, iii) water is released from a dam, or iv) water escapes from the banks of a waterway (stream, river, creek, etc.).

When the flood is caused by a **Scenario A** event, the date that the flood starts is the date when the community first experiences a flood. When the flood is caused by a **Scenario B** event, the date that the flood in progress starts is the date that the flood event first started for all persons and properties impacted by that event. FEMA stresses that the applicability of this exclusion (Section V(B) in the policy) and hence denial of any claims cannot be determined until after a loss occurs. And sadly, looking at the low policy count in many of these areas, we probably won't see as many flood insurance claims as we would hope...but instead, more disaster assistance requests. We'll keep you updated.

—Your Humble Insurance Committee Co-Chairs  
Gary Heinrichs & Bruce Bender

*This column is produced by the ASFPM Insurance Committee. Send your questions about flood insurance issues to [InsuranceCorner@floods.org](mailto:InsuranceCorner@floods.org) and they will be addressed in future issues of the newsletter.*



# Homeowner's Handbook to Prepare for Natural Hazards Second Edition

The Homeowner's Handbook to Prepare for Natural Hazard was created to help homeowners prepare for a natural hazard so that risks to family and property may be reduced and has been recently updated. While it is never possible to eliminate all damage from a natural hazard, you as a homeowner can take action and implement many small and cost-effective steps that could significantly lower your risk. Mother Nature can be intense. Your family and home deserve the protection that only you can provide.

## [What's New in the Second Edition](#)

- **Evacuation Guidance for Local Tsunami.** Using Nature's Own Warning (NOW) signals, guidance is provided on when to evacuate given a local earthquake.
  - **Guide for Installing the Hurricane Plantation Tie (HPT) Clips.** Previously it was encouraged that homes be retrofitted with hurricane clips. Yet only about 10 percent of the single wall homes in Hawai'i could use the Simpson Strong-Tie H3 clip. With the introduction of the new Simpson HPT clip in 2010, the majority of single wall homes in the state can be retrofitted, thus increasing the chances that their roof will not blow away. The second edition introduces the HPT clip and has a guide on how to install it.
  - **Completing the Continuous Load Path Connection.** Additional guidance to strengthen houses is provided by addressing the foundation connection for a single-story, single-wall house on post and pier structures (very common in Hawai'i). The second edition references recent work in a report and online tutorial for seismic retrofits conducted by local structural engineers and researchers.
- More Options for Window Coverings.** New attractive options for window coverings are included in the second edition including clear hurricane storm panels and updated guidance on the use of plywood.
- **Determine Your Flood Risk.** In the second edition, Flood Insurance information has been updated and a mapping application is provided to help homeowners assess their flood risk based on FEMA Flood Insurance Rate Maps using the State of Hawai'i Department of Land and Natural Resources' Hawai'i Flood Hazard Assessment Tool.
  - **More Options for Home Strengthening.** Many new or updated FEMA reports provide more information on attic strengthening, gable end bracing, fortifying garage doors, safe rooms, flood proofing, earthquake retrofitting, and many other measures to protect your home. In addition, resources such as Hawaiian Electric Company's Information Handbook for Emergency Preparedness, which was updated in 2011, are vital to deal with numerous power issues before, during and after a hurricane.
  - **Updated Information.** Updated information for the civil defense and emergency management agencies; the primary radio stations participating in the Emergency Alert System; and the list of state emergency shelters, including those accepting people with special needs or pets.

For more information, contact the University of Hawai'i Sea Grant College Program Communications Office at 808-956-7410 or [lknapman@hawaii.edu](mailto:lknapman@hawaii.edu). A downloadable pdf copy of this book is available at: <http://seagrant.soest.hawaii.edu/publications/Book>.

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the damage to urban areas occurred—10-foot waves damaged and destroyed homes and resorts, and inundated many areas with sand and debris.

Overall estimates of damage in Hawaii exceed \$30.6 million, with more than \$14 million coming from the Big Island alone.

## **Out in the Field**

In remote research camps in the uninhabited Hawaiian Islands Refuge, which is part of the Papahānaumokuākea Marine National Monument, staff members and volunteers were having diverse experiences, says Stieglitz.

On Midway Island, 60 to 70 staff members and contractors were secured in the third floor of an air-conditioned World War II military bunker and were able to monitor tsunami waves in real time on island tide gauges. They maintained Internet access throughout the event and were able to follow online media reports.

"Everybody knew what to do," says Stieglitz. "They had a plan that was rehearsed, and everything went very well."

In the much smaller and more primitive tent camp on Laysan Island, where the highest elevation is a 30-foot dune, short-term researchers and volunteers waited for tsunami waves sitting in life rafts tethered to a metal emergency shelter wearing immersion suits to protect them from hypothermia should they be swept into the North Pacific. With limited communication, they waited for hours in the dark listening to the series of waves.

"They had a plan in place, but they did not rehearse it, and that was a problem for us," Stieglitz says.

The experience of the tsunami and the resulting devastation on the island, which included the beaches being littered with unidentified barrels of toxic materials and old military munitions, was emotionally traumatic for some staff members and volunteers.

Although their stint on the island wasn't due to end for several weeks, "we ended up evacuating them fairly quickly," Stieglitz says. "You have to make people's emotional well-being the priority."

### **Wildlife Impacts**

Wildlife in the refuge was also severely impacted, Stieglitz says. More than 110,000 Laysan and black-footed albatross chicks—about 22 percent of the year's albatross production—were lost as a result of the tsunami and two severe winter storms in January and February. At least 2,000 adults were also killed. A number of other seabird species were killed, but their numbers are unknown.

Biologists are confident that, absent any other stressors, the albatross population could rebound from this event, Stieglitz says, but "we remain concerned about the compounding effect of this tsunami on the existing stresses of invasive species, global climate change, incidental mortality from longline fishing, and other threats to albatross and other wildlife populations."

### **Practice, Practice, Practice**

What consistently went well during the event, managers say, was not only having a tsunami plan in place, but actively practicing the plan.

"I think practice, practice, and developing good relationships with partner agencies so that you know them on a personal level before an event helps facilitate the process," says Mento.

"I think we've got the before part down pretty good," agrees Bethany Morrison, a planner for the County of Hawaii. "We just need to keep people educated and aware."

### **Ongoing Education**

Other managers also point to the need for ongoing education and outreach to a variety of audiences ranging from residents and government personnel to the media and hotel staff members.

"In gauging the success of our past outreach efforts, I believe there has been a positive impact," says Ann Ogata-Deal, planning and policy analyst with the Hawaii Coastal Zone Management Program. "We held a training session focused on educating the media and hotel security. These are two very critical partners in tsunami mitigation."

Eversole points to numerous Sea Grant outreach efforts as being important, including several hazards publications targeting county planners and engineers, as well as residents.

Ogata-Deal notes, "Just looking at things overall, it takes many years of work to see significant, long-lasting results. You can't always point to one thing that made the difference in any hazard event. It's more of the combined outreach efforts of many different people over extended periods of time that makes a difference."

### **The Aftermath**

Where more emphasis is needed, managers agree, is in planning for what happens after an event.

Mento cites the need for better statewide communication for determining when it is safe to go back to coastal areas and open beaches and marinas. "Varying definitions of 'all clear' took us by surprise. If people can't go back to their businesses and homes, then it's not all clear."

# Flood Insurance Rate Maps *Updates*

Are you currently doing work in the Counties listed here? If so, please take note that FEMA has approved the following Letter of Map Changes to the flood hazard information shown on the effective Flood Insurance Rate Maps.

## City and County of Honolulu

Type: LOMA  
FIRM Panel 0391G  
Effective Date of the Revision: June 2, 2011  
FEMA Case Number: 11-09-2482A  
Flooding Source: Kuapa Pond; Pacific Ocean

On-line readers can view LOMC [here](#)

Type: LOMR-FW  
FIRM Panel 0255G  
Effective Date of the Revision: July 19, 2011  
FEMA Case Number: 11-09-2512A  
Flooding Source: Kahaluu Stream

On-line readers can view LOMC [here](#)

Type: LOMA  
FIRM Panel 0353G  
Effective Date of the Revision: June 14, 2011  
FEMA Case Number: 11-09-2605A  
Flooding Source: Kalihi Stream

On-line readers can view LOMC [here](#)

Type: LOMA  
FIRM Panel 0391G  
Effective Date of the Revision: July 5, 2011  
FEMA Case Number: 11-09-3102A  
Flooding Source: Kuapa Pond

On-line readers can view LOMC [here](#)

Type: LOMA  
FIRM Panel 0391G  
Effective Date of the Revision: June 30, 2011  
FEMA Case Number: 11-09-3104A  
Flooding Source: Kuapa Pond; Pacific Ocean

On-line readers can view LOMC [here](#)

## Hawaii County

Type: LOMR  
FIRM Panel 0939C, 0943C  
Effective Date of the Revision: May 10, 2011  
FEMA Case Number: 10-09-3793P  
Flooding Source: South Kona Watercourse No. 1

On-line readers can view LOMC [here](#)

## FHAT Wins Award



The Floodplain Management Associations' (FMA) Award for Excellence seeks to find and recognize outstanding floodplain management projects, programs and/or activities. Local, regional, and national government (such as cities, towns, counties, State, and Federal agencies), special districts, and private consulting engineering/firms are eligible to be recognized for an overall program or a specific project or activity which epitomizes the best in floodplain management.

The Department of Land and Natural Resources, Flood Hazard Assessment Tool (FHAT), was awarded this prestigious honor at the 2011 FMA Conference held this past September in San Diego. Developed by DLNR contractor, The Onyx Group, the FHAT made its initial debut in April 2008. Since then it has been upgraded with many enhancements and has become a valuable resource to its many users, which include community officials, design professionals, surveyors, insurance agents, lenders, realtors, property owners, and more.

## Hawaii County Receives CRS Status



FEMA Region IX, planner Sarah Owen and former Acting Hawaii County Floodplain Manager, Carter Romero proudly shows off CRS plaque and Class 8 designation. Thanks to the efforts of Hawaii County's Floodplain Management Program, policy holder in their county receive a 10% discount on their premiums.





# Unmapped Areas on Flood Hazard Maps

## Understanding Zone D

### BACKGROUND

Flood hazard maps, also known as Flood Insurance Rate Maps (FIRMs), are important tools in the effort to protect lives and properties in communities across the nation. By showing the extent to which areas of a community and individual properties are at risk for flooding, these flood maps help residents and business owners make better financial decisions about protecting their property.

However, flood risks are dynamic and can change over time. Water flow and drainage patterns can be altered dramatically due to surface erosion, land use, and natural forces. As a result, flood maps for those areas may no longer accurately portray the current flood risks. Consequently, the Federal Emergency Management Agency (FEMA) has been updating the nation's flood maps using the latest data gathering and mapping technology and new flood maps are being issued nationwide.

### UNDERSTANDING ZONE D

The level of flood risk is indicated on the flood map by a letter. For example, flood zones labeled with the letters B, C or X represent moderate- and low-risk areas. Flood zones identified by the letters A or V represent high-risk areas, known as Special Flood Hazard Areas (SFHAs). On some flood maps, there may also be a zone labeled with the letter D. The Zone D designation is used for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted. The designation of Zone D is also used when a community incorporates portions of another community's area where no map has been prepared.

Flood insurance is available in Zone D and property owners should be encouraged to purchase it. However, flood insurance is not federally required by lenders for loans on properties in these zones. Although these areas are often undeveloped and sparsely populated when designated as Zone D, lenders may become aware that new development in such areas has increased the possibility of property damage from flooding. Consequently, they may require coverage as a condition of their loans, even though it is not federally required.

Flood insurance rates for properties in Zone D are commensurate with the uncertainty of the flood risk. Consequently, as seen in the table below, the Zone D premiums can be higher than a standard low-risk X zone premiums and significantly higher than the Preferred Risk Policy (PRP) premiums. If an area is being remapped and properties are going from Zone B, C, or X to Zone D, the insurance agent should determine if grandfathering the existing low-risk zone for future rating will provide a lower premium than using the new Zone D premium. Also, since Zone D is not considered an SFHA, a property that was designated in Zone D on the previous map and is newly designated in an SFHA by a map revision effective may be insured under the PRP based on the 2-year PRP eligibility extension. More details on grandfathering and PRP Extension can be found at [www.fema.gov/library/viewRecord.do?id=3745](http://www.fema.gov/library/viewRecord.do?id=3745).



**Premium Comparison (October 1, 2011 Rates)**

FIRM Date*/Building Type	Preferred Risk Policy (Zone B, C, X)	Standard Rates (Zone B, C, X)	Standard Rates (Zone D)
Pre-FIRM Home**	\$211	\$778	\$575
Post-FIRM Home**	\$211	\$778	\$952
Pre-FIRM Manufactured Home***	\$211	\$778	\$575
Post-FIRM Manufactured Home***	\$211	\$778	\$1,197

\*Pre-FIRM buildings are constructed prior to 12/31/74 or the effective date of the initial flood map; Post-FIRM buildings are constructed on or after the effective date of the initial flood map

\*\*Based on \$50,000 in building and \$20,000 in contents coverage; single family home on a slab with no garage; \$1,000 deductible for building and for contents for Zone B, C, X and post-FIRM D; \$2,000 deductible for pre-FIRM Zone D

\*\*\*Based on \$50,000 in building and \$20,000 in contents coverage; permanently affixed to a lot with no enclosure; \$1,000 deductible for building and for contents for Zone B, C, X and post-FIRM D; \$2,000 deductible for pre-FIRM Zone D



*Make Hawaii a Great  
Place to Live !*

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There is also interest in being more effective in recovery planning and coordination, notes Gordon Grau, director of the Hawaii Sea Grant Program.

"I have been impressed with the degree of coordination among local and state and federal offices that focus on hazard preparedness, and on their highly positive interactions with NOAA and Sea Grant," Grau says. "The recovery and rebuilding coordination is where we can still improve and are working towards that collectively."

He adds that criteria for rebuilding need to be planned before an event so that the area comes back stronger and more resilient to future tsunamis or storms.

Better documentation of the damage immediately after the event is also needed, notes Morrison.

### **Almost Normal**

Three months after the tsunami, the areas that were most impacted are "almost back to normal," Mento says. "The recovery has gone pretty well."

The lessons learned from this event are being incorporated into plans for the "next one," Stieglitz says. "With global climate change, there's more of an imperative now to be prepared for all these types of events. You have to plan, practice, plan for the aftermath, and practice."

He adds, "We've learned a lot from past experiences and have really improved our response. Next time, we'll do this a little bit better."

Source: NOAA Coastal Services Center, Coastal Services Magazine (July/August 2011)  
<http://www.csc.noaa.gov/magazine/>

