

PACIFIC DISASTER CENTER 1996 - 2006



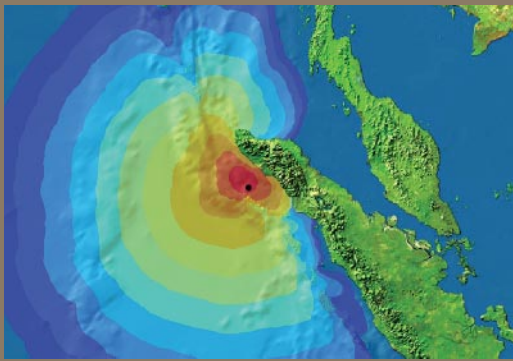
Celebrating 10 years of fostering disaster-resilient communities throughout the Asia Pacific and Indian Ocean regions and beyond



BORN IN THE AFTERMATH OF HURRICANE INIKI

After Hurricane Iniki devastated the Hawaiian island of Kauai in 1992, the U.S. Congress established the Pacific Disaster Center (PDC) headquartered on the island of Maui to mitigate the future impact of hurricanes, earthquakes and other natural disasters in Hawai'i.

Since 1996, additional funding allowed PDC to assist in disaster preparation, response and recovery efforts of emergency managers and decision makers throughout the entire Asia Pacific and Indian Ocean regions.



FOSTERING DISASTER-RESILIENT COMMUNITIES

The Pacific Disaster Center serves as a bridge between the scientific and decision maker communities, providing the latest information, science, and technical capabilities to assist disaster managers in five program areas:

- Decision and Policy Support
- Institutional Capacity Development
- Risk and Vulnerability
- Humanitarian Assistance Support
- Security and Sustainability

CORE CAPABILITIES

PDC has developed capabilities to help managers better understand disaster risks and impacts, and support planning, mitigation, preparedness, and response efforts within a geographic area. The goal, ultimately, is to save lives and reduce losses. These include:

- **Risk and Vulnerability Assessments** provide a comprehensive analysis of single or multiple hazards across physical, social, economic, and environmental sectors in a particular region. They allow decision makers to visualize and understand potential threats.
- **Web Technology for Collaboration** uses the latest Internet-based technology to create a common operating picture among partners at state, regional, national, and international levels. This capability enables disaster management organizations to share and jointly act on vital information.



- **Geospatial Information and Sharing** uses advanced geospatial data and tools to augment analysis of disasters and their multiple impacts. This allows disaster managers to visualize and gain a better understanding of hazards and their impacts, before, during, and after an event occurs.
- **Hazard Mitigation Planning** is vital to decision makers and stakeholders at all levels to integrate disaster mitigation into existing policy frameworks. Hazard mitigation planning brings necessary parties to the table to provide decision makers with comprehensive information on how to protect lives and property.
- **Impact Assessment and Scenario Modeling** uses a variety of models that generate information on hazard phenomena and the potential impacts of disasters. This capability allows decision makers to visualize the potential impacts of disasters, both in terms of geography and severity.
- **Technology Assessment and Support** combines information technology and state-of-the-art assessment methodologies. By fusing these with the needs of the disaster management community, decision makers can make use of strengthened national and regional infrastructures to carry out their missions.

1992-1995 | Phase I

At a glance: Hawai'i's worst storm of the 20th century demonstrated a critical need for a "Pacific Disaster Center." Worldwide, information technology based on the Internet emerged as an important new paradigm.

The congressional budget mandates an evaluation to create a disaster facility in the Pacific addressing the need for better disaster management and analysis. An initial concept for a "Pacific Disaster Center" is developed, legislation approved and an infrastructure developed on the island of Maui.

1996-1998 | Phase II

At a glance: Following its opening, PDC created a secure website for emergency management officials for hazard-related awareness. Worldwide, Web-based information technology increased in popularity and began to be integrated in the disaster management field.

PDC creates secure website for emergency management officials, **Emergency Management Operations Systems (EMOPS)**, which is still in use today. Between 1997 and 2001, PDC generated more than **3,600 products covering 358 events—including tropical cyclones, tsunamis, earthquakes, droughts, wildfires, floods, and volcanic activity.**

1992

1993

1994

1995

1996

1997

Hurricane Iniki

Hurricane Iniki devastates the Hawaiian Island of Kauai and causes severe damage on the Island of Oahu, resulting in seven deaths, a prolonged recovery period, and over \$3 billion in economic impact throughout the state. The need for effective disaster mitigation and access to critical information in Hawai'i and throughout the region becomes evident.

An operational cell of five PDC staff is established at the State Emergency Operations Center at Diamond Head Crater in Honolulu. These staff members are "embedded" within the Hawai'i State Civil Defense.

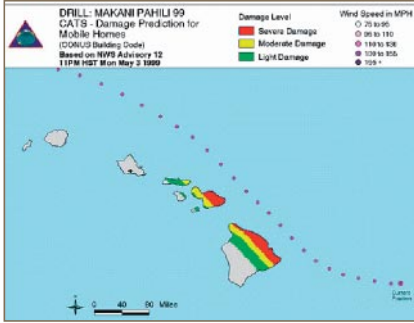
Hawai'i's Governor Cayetano signs a proclamation establishing the Pacific Disaster Center on February 21, 1996.

PDC headquarters opens on the island of Maui at the Maui Research and Technology Center in Kihei. The Center also maintains liaison staff at Diamond Head and Fort Shafter on Oahu.



1999-2001 | Phase III

At a glance: PDC began developing Web-based products, tools, and services to meet the demand of the disaster management community. The East-West Center became PDC's Managing Partner, expanding PDC's focus across all phases of disaster management. Worldwide, the increasing impact of natural hazards, the events of September 11, 2001, and the conflict in Afghanistan influenced the global community, and the disaster management field.



PDC begins providing **technical support to Hawai'i's annual hurricane exercise "Makani Pahili,"** where dozens of agencies practice preparing for a major hurricane striking Hawai'i.

The first Asia Pacific Disaster Conference is held in Maui, Hawai'i, co-sponsored by PDC and the Center for Excellence for Disaster Management and Humanitarian Assistance. It is designed to support emergency management communities in Alaska, Hawai'i, North America, Pacific Island countries, and Asia.

1998

1999

2000

Molokai Fires

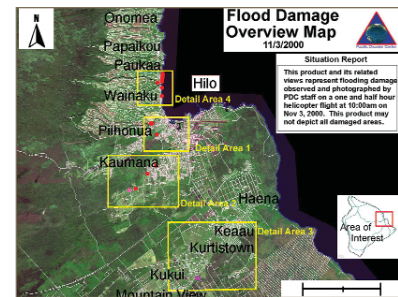
Y2K

Severe Flooding-Hawai'i

PDC provides Maui County fire officials with **mapping of the fire spread on Molokai** and affected areas.

PDC develops the **Pacific Regional Emergency Management Information System (PREMIS)** to improve Hawai'i State Civil Defense's infrastructure. This would connect local, state, and federal emergency management organizations for the first time.

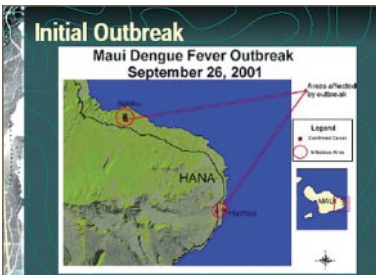
PDC Prepares Hawai'i for Y2K, and participates in statewide readiness activities ahead of the transition.



PDC provides **critical geospatial information support** to response and relief efforts for floods on the islands of Hawai'i and Maui.

2002-present | Phase IV

At a glance: PDC began applying disaster mitigation tools, often first developed for Hawai'i, then used throughout the Asia Pacific and Indian Ocean regions. Worldwide, the critical importance of Information and Communication Technologies and geospatial information in the disaster management field became evident in the devastation caused by the Indian Ocean tsunami and Hurricane Katrina.



PDC maps a **Dengue Fever outbreak** in remote areas of Maui, Hawai'i, supporting the rapid control of the outbreak.

At NASA's request, PDC's **Modeling Development Project** develops predictive modeling to improve the capability of simulating natural hazards for tsunamis, lava flows, cyclones, dam breaks, and high winds.



Using advanced modeling tools, **PDC briefs Fiji's Prime Minister** about the potential impacts of tsunamis on local communities.

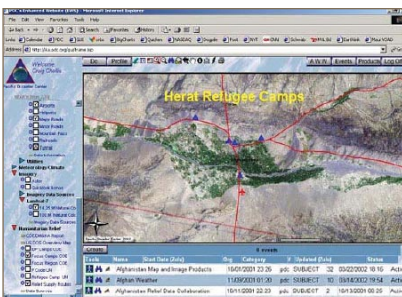
PDC launches **Asia Pacific Natural Hazards Information Network** to provide high quality geospatial information to emergency managers throughout the region.

2001

9/11 Terrorist Attacks
Conflict in Afghanistan

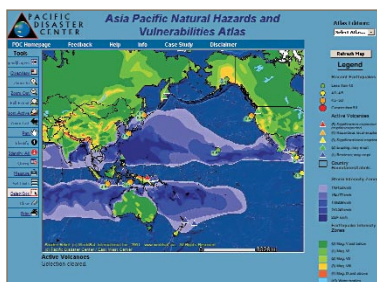
In the aftermath of the **events of September 11, 2001**, PDC begins incorporating homeland security-related products into its overarching program.

During the **conflict in Afghanistan**, PDC provides critical support to the Central Asia Humanitarian Relief Effort, which provided assistance to international relief operations.



2002

2003



The first edition of the **Asia Pacific Natural Hazards and Vulnerabilities Atlas** launches to provide emergency managers with an unprecedented and dynamic picture of hazards in the Asia Pacific and Indian Ocean regions.

2004



Risk and Vulnerability Assessments are carried out in **American Samoa** and throughout the **Pacific Islands**, as well as in **Marikina City, Philippines**. A detailed regional study is also conducted in the **Lower Mekong Basin**.



PDC provides an **Integrated Decision Support System** to U.S. Southern Command prior to the 2004 Atlantic Hurricane season, and assists relief operations following Hurricane Katrina's deadly strike on Louisiana in 2005.

PDC begins a project to help the development of **Thailand's National Disaster Warning Center**.



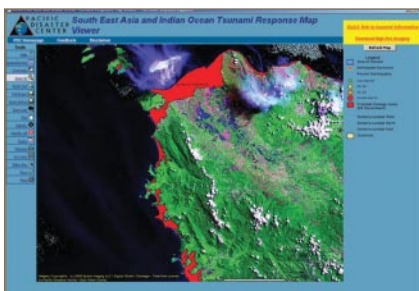
PDC collaborates with regional and national organizations to develop a **"Tsunami Awareness Kit"** for Pacific Island Countries to foster tsunami awareness throughout the region.

2005

Hurricane Katrina

Indian Ocean Tsunami

The Great Sumatra Earthquake and Indian Ocean tsunami impacts **12 nations** and claims nearly **230,000** lives. PDC provides intensive support to the relief operations for this unprecedented catastrophe at local, national, and regional levels.



Collaboration with the Association of Southeast Asian Nations (ASEAN) Committee results in a **"disaster information sharing"** project for **ten Southeast Asian Countries**. The endeavor is the first of its kind in the world.

2006

Severe Flooding: Hawai'i



PDC provides intensive support to emergency managers after **severe weather and flash flooding** impacts the Hawaiian Islands for six weeks.



To promote sustainable development in complex urban environments, **PDC partners with the Earthquakes and Megacities Initiative** to develop and implement a framework and Knowledge Base for Disaster Risk Management Master Plans for large cities.

PARTNERSHIPS

- Asian Disaster Preparedness Center (ADPC)
- Association of South East Asian Nations (ASEAN) Committee on Disaster Management
- Center of Excellence in Disaster Management and Humanitarian Assistance, Hawai'i (COE)
- Disaster Preparedness Research Institute, Kyoto University
- Earthquake Disaster Mitigation Research Center, Kobe, Japan
- Earthquakes and Megacities Initiative (EMI)
- East-West Center (EWC)
- Environmental Systems Research Institute (ESRI)
- Federal Emergency Management Agency's (FEMA) Higher Education Project, USA
- Federation of Earth Science Information Partners, USA
- Geo-Informatics and Space Technology Development Agency (GISTDA)
- Hawai'i State Civil Defense (HSCD) and County Civil Defense Agencies
- Intergovernmental Oceanographic Commission's International Coordination Group for the Tsunami Warning System in the Pacific (ICG/ITSU)
- Japan-U.S. Science, Technology, and Space Applications Program (JUSTAP)
- Kathmandu Metropolitan City, Nepal
- Lockheed Martin Information Technology
- Manila Observatory, Quezon City, Philippines
- Maui Community College (MCC)
- Maui Volunteer Organizations Active in Disasters (VOAD)
- Metro Manila Development Agency, Manila, Philippines
- National Disaster Coordinating Council (NDCC) and Office of Civil Defense (OCD), Philippines
- National Disaster Warning Center, Thailand
- National Oceanic and Atmospheric Administration (NOAA)
- National Research Council (NRC)
- National Society for Earthquake Technology, Nepal
- Pacific Risk Management Ohana (PRiMO)
- Philippines National Defense College, Emergency Management Institute, Manila, Philippines
- Philippine Institute of Volcanology and Seismology (PHIVOLCS)
- Research Center for Urban Safety and Security, Kobe University, Japan
- South Pacific Applied Geoscience Commission (SOPAC) and disaster managers representing 17 Pacific Island Nations and States
- Sun Microsystems
- Thailand Department of Disaster Prevention and Mitigation
- United Nations Economic and Social Commission for Asia and Pacific (UN-ESCAP)
- United Nations International Strategy for Disaster Reduction (ISDR)
- United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA)
- United Nations Office of Outer Space Affairs (UN-OOSA)
- United Nations Initiative Providing Satellite Imagery for Humanitarian Aid (UNOSAT)
- U.S. Army Corps of Engineers (USACE)
- U.S. Department of Agriculture Forest Service (USFS)
- U.S. Geological Survey (USGS)
- University of Hawaii
- University of Peradeniya, Sri Lanka



NOTEWORTHY

PDC's increasing recognition has resulted in:

- A partnership with the U. S. Geological Survey Science Impact Program
- Environmental Research System Institute's Special Achievements in Geographic Information Systems Award
- Participation in the International Charter: Space and Major Disasters and Federation of Earth Science Information Partners
- Service Award from the Hawai'i Emergency Preparedness Executive Committee



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