

*Pacific Island Countries GIS / RS User Conference
Suva, Fiji
December, 2009*

The Global Hazards Information Network (GHIN)

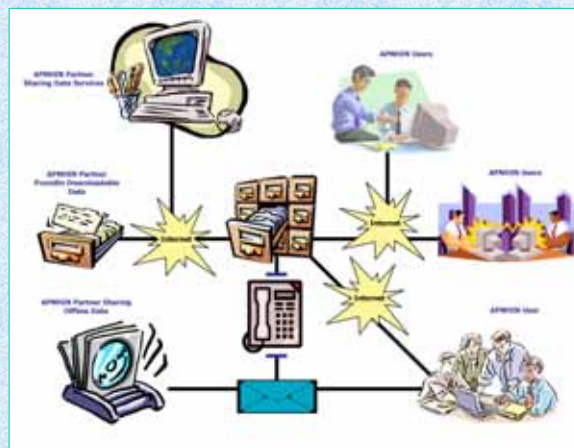
Presented By: Mr. Todd Bosse
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Presentation Overview

- PDC Overview
- Why GHIN?
- Focus on GHIN as a “User”
- Becoming an GHIN partner





PDC's Role Is ...

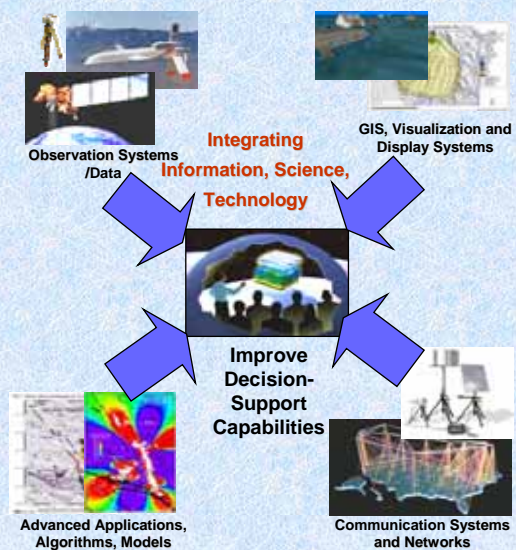
- A center created to establish **access** to new and more effective **information resources** supporting all levels of emergency management.
- An **information resource** and **technology applications** center providing products and services to the **emergency management** agencies and organizations in the Pacific.
- A **public-private partnership**, enabling the PDC to enter into contractual agreements and develop **externally funded** projects.
- **University of Hawaii** is the Managing Partner.



PDC's Core Capabilities

Information Products Supporting:

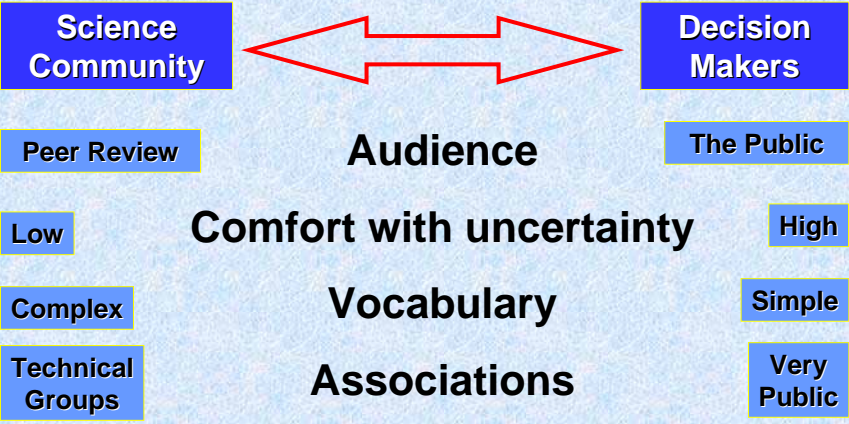
- Policy & Decision Makers
- Disaster Managers
- Humanitarian Assistance





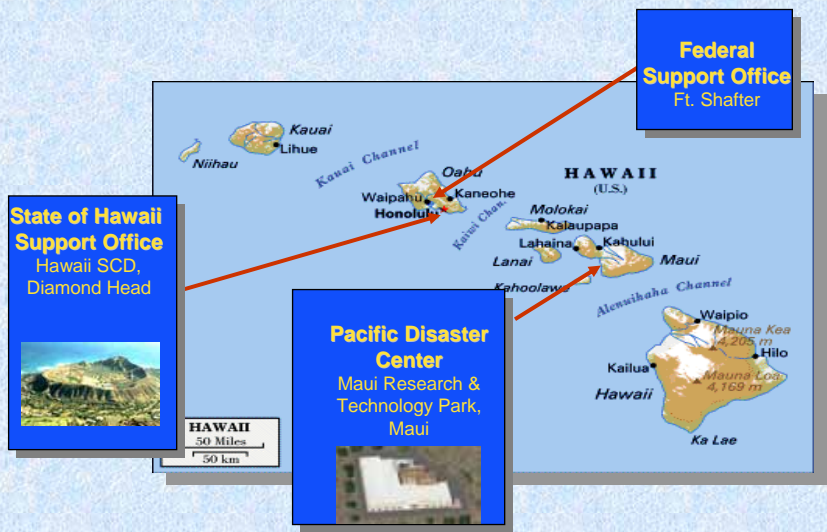
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Building a Bridge



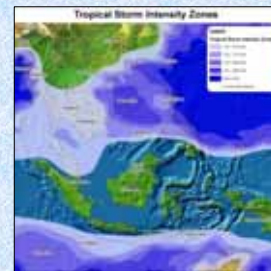
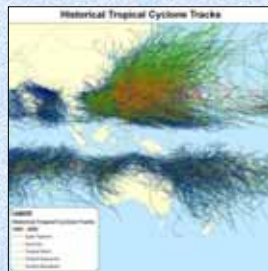
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PDC Facilities in the State of Hawaii



What is APNHIN?

- What data resources and information services are presently contained within GHIN?
- How do I access these resources?
- How do I become a partner in GHIN and share my data resources?



Background

- A large proportion of project resources are used to develop an underlying database to support analysis for most risk and vulnerability assessment (RVA), mitigation planning and response/recovery activities
- Even with Internet advances, data discovery and access can still be problematic:
 - Lack of centralized catalog & consistent search tools
 - Limited metadata / data documentation
 - Access to actual data is often restricted / unavailable
- The same data set gets recreated multiple times
- **Investment is not fully leveraged**
 - Others cannot benefit from your work



What is GHIN?

GHIN is a suite of customized, web-based applications and information services designed to allow users to search for, evaluate and access geospatial data.

- Built upon the underlying specifications of The Geography Network.
- Theme is *Natural Hazards* information and supporting basedata
- Designed to directly support disaster and resource managers, planners, governments, and nongovernmental organizations within the Asia-Pacific region.
- GHIN is Open GIS Consortium (OGC) compliant, allowing users of different software packages and data needs to share & access geospatial information.





Using GHIN to Access Data



Keyword Search



Review



Obtain



Understand



Using GHIN to Access Data

Browse for data





Using GHIN to Access Data

GLIDE & International Space Charter



GHIN Services

GHIN provides users with real-time access to OGC compliant map services that can be instantly incorporated into GIS analytical software packages and decision support environments (WFS, WMS, ArcIMS Image)

PDC Active Hazards: Data visualizing near-real time hazard events around the globe such as tropical storms, earthquakes, wildfires, volcanoes, and tsunamis.

PDC Historical Hazards: Historical occurrences of above hazards

PDC Hazard Models: hazard models depicting potential damage from hurricanes and earthquakes.

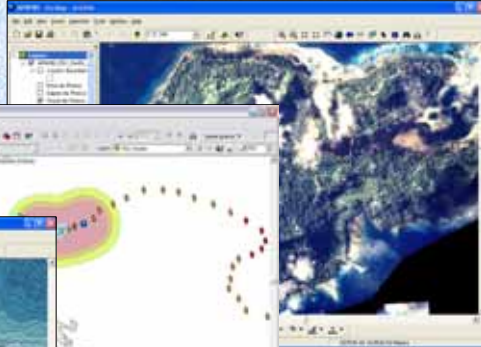
PDC Pacific Imagery: A collection of high-resolution satellite imagery for the Pacific Islands.

Sea Level Stations: Visualizes sea-level stations, providing an active link to sensor data from the source via KML.

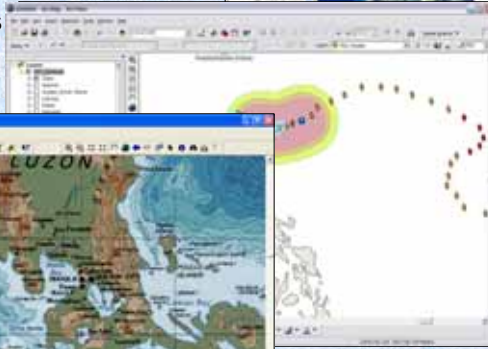


PDC's GHIN Services

Pacific Island Imagery



Active Hazards



Maps/ Digital Raster Graphics



GHIN Data Source

1. PDC's Geospatial Data Resources
2. GHIN Partners



PDC is a Node in GHIN

PDC's Geospatial Data Resources

- PDC has implemented a comprehensive geospatial data management environment, the *Enterprise Geospatial Database (EGDb)*
 - Supports imagery, raster and vector data resources at a variety of scales/resolutions and applications
 - Provides ISO and FGDC-compliant metadata for all data elements
 - Allows real-time, interactive access to data through various mechanisms
 - internally by GIS PDC analysts
 - externally via APNHIN as downloadable files and IMS services



GHIN Data

The main focus within GHIN is natural hazards, however, base data also play an important supporting role.

Specific data themes include:

- Hazard Events: Current and historical occurrences of hazards
- Hazard Zones: Data showing areas that are at high risk for a hazard
- Critical Facilities: Essential facilities serving important community functions such as police/fire stations, hospitals, schools, shelters, etc.
- Infrastructure: Transportation, power, water and sewer utilities.
- Environmental: Natural resources potentially affected by disasters
- Demographic and Socio-Economic: Vulnerable populations, status, gender, age, employment, education level, etc.
- Economic Vulnerability: Businesses and commercial assets.
- Baseline topographic and elevation
- Remote Sensing Data including high resolution satellite imagery



Dynamic Data

Automated Acquisition & Processing

- FTP push, FTP pull, HTML "harvest"
- Monitoring Scripts

Current Layers

- Tropical Storm Tracks/Forecasts
 - NWS, JTWC
 - 6 hr. updates
- Earthquakes
 - USGS NEIC
 - 5 minute updates
- Volcanoes
 - SWVRC
 - 2x per day
- Wildfires / Hot Spots
 - MODIS / NASA / Univ Hawaii
 - 4x per day
- NWS NDFD: Wind direction & speed, temperature, precipitation forecast, wave height
- Dartmouth Flood Observatory



GHIN Partners

Global Hazards Information Network Explorer - Mozilla Firefox

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Global Hazards Information Network (GHIN)
Powered by Pacific Disaster Center

SEARCH BROWSE PARTNERS

SOPAC

SOPAC was established in 1972 under the Economic and Social Division of the UN as a project called the Committee for Coordination of Joint Processing for Marine Resources in South Pacific Offshore Areas (CCOP/OPAC), to promote offshore mineral and petroleum prospecting. The mandate became autonomous in 1984 with the funding of its member countries, donor countries, and international agencies to allow its annual operations. While the initial focus of its work was on marine mapping and prospecting, recent years have seen a broadening of its scope to include hazard assessment and risk management, environmental vulnerability, oceanography, energy, water and sanitation and information and communication technologies.

Since its establishment in 2001, OCHA's Regional Office for Asia and the Pacific (ROAP) has sought to minimize the vulnerability of populations in the region to humanitarian crises. ROAP has provided support and assistance to governments, UN agencies, NGOs and other humanitarian actors in response to a number of major natural disasters, including through the deployment of staff with a range of technical expertise. The Regional Office also works to build response capacity in the region before disasters strike, by strengthening emergency preparedness.

ROAP staff have expertise in Public Information and Advocacy, Information Management, Civil-Military Coordination and Planning, Preparedness, and also carry out work related to the Humanitarian Reform process including the promotion of inter-agency coordination at the regional level.

ROAP covers 27 countries and 16 territories in the Asia-Pacific region. It is based in Thailand, with oversight for the office of the Regional Disaster Response Adviser for the Pacific in Fiji, National Disaster Response Advisers in Pakistan and the Philippines, and OCHA's presence in Papua New Guinea. ROAP also provides technical support and surge capacity to OCHA field offices in Indonesia, Nepal, Sri Lanka and Timor-Leste, as well as to the many countries in the region where OCHA does not have a presence.

The NOAA Pacific Islands Center (PISC) was established in 2001 as a cooperative NOAA effort to provide better communication and delivery of services to the coastal resource management jurisdictions of Hawaii, American Samoa, the Commonwealth of Northern Mariana Islands, and Guam. The mission of the NOAA PISC is to provide integrated, locally tailored services and information that support the well-being of Pacific coastal and ocean communities, economies, and natural resources.

ROAP: 1300 North Robinson Street, Suite 1, Naha, HI 96721 | 1-800-891-2628

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How to participate in GHIN

Three modes of supplying users of GHIN with data:

1. **Offline Data:** Provides data to user on media (CD, DVD, etc.)
2. **Downloadable Data:** Allows GHIN users to download data directly from participating organization via a link in metadata, supplied by data provider (PDC can also host data)
3. **Interactive Data Service:** Use of web mapping software to create live map services that are available to users of GHIN

Partners retain data control....



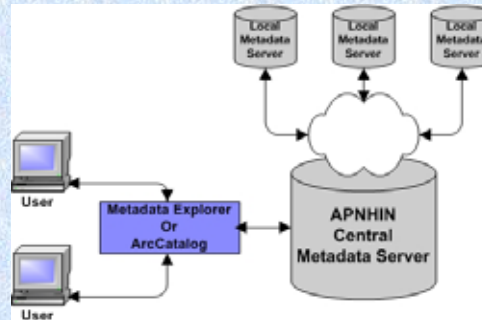
Metadata

- The creation of metadata is crucial for GHIN participation.
 - All participation modes require that the information submitted to GHIN include metadata meeting the minimum standard for either FGDC or ISO
 - As part of our “Start up Kit”, PDC will provide metadata templates and other training documents to new members of the GHIN

A Metadata Server, deployed locally, describing resources available and how they can be accessed

Searchable via the internet through ArcCatalog or Metadata Explorer

Can be synchronized with GHIN metadata server with automated harvesting tools.



Formalize relationship with PDC

- MOA detailing roles and responsibilities of parties, general categories of data, access constraints, etc.

Identify resources supporting hazard applications

- Geophysical / natural hazards
- Risk and vulnerability measures

Prepare data documentation (metadata)

- ISO/FGDC-consistent
- PDC Metadata automation tools
- APNHIN Starter Kit, metadata templates, thumbnail creator



Asia Pacific Natural Hazards Atlas

Web-based, Geospatial Information Application Supporting Regional Hazard and Vulnerability Assessments



Natural Hazards

- Tropical Storms
- Wildfires
- Earthquakes
- Tsunamis
- Volcanoes
- Floods

Risk Exposure

- People
- Infrastructure

<http://atlas.pdc.org>



Interested in Participating in GHIN?

For more Information e-mail:

ghin@pdc.org

Visit GHIN at:

<http://ghin.pdc.org>



MAHALO!!

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PDC Homepage: <http://www.pdc.org>

Hazards Atlas: <http://atlas.pdc.org>