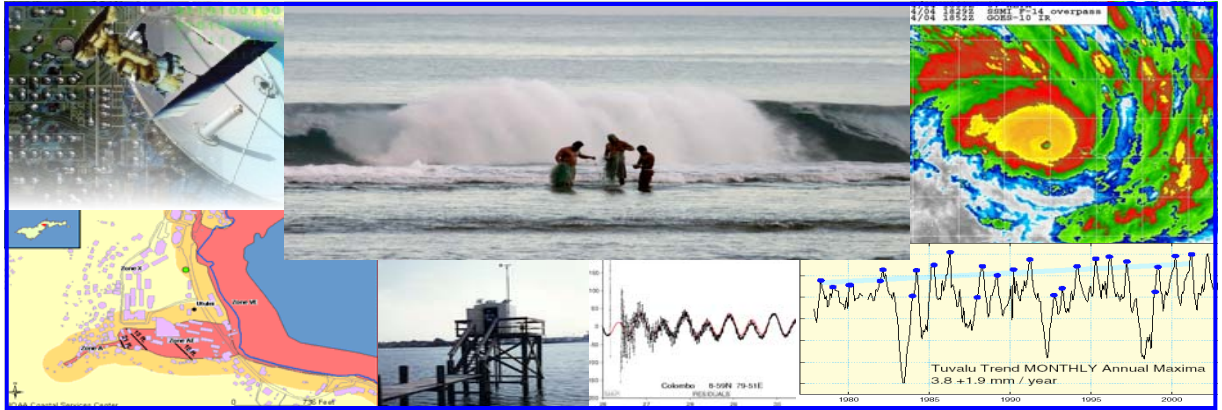


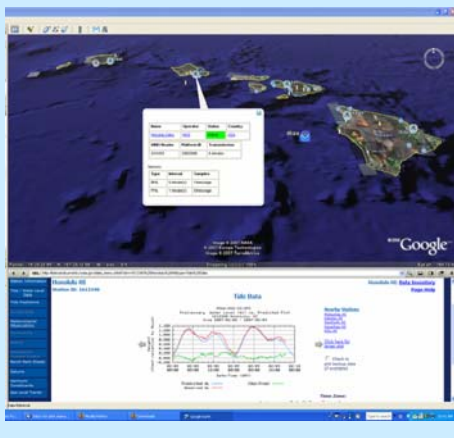
NOAA IDEA Center

National Oceanic & Atmospheric Administration Integrated Data and Environmental Applications Center
 National Satellite and Information Service • National Climatic Data Center
 1601 East West Road, Honolulu, Hawaii 96848-1601 Phone: 808-944-7472 Fax: 808-944-7499



Sea Level Station Web Service to Support Tsunami Detection & Warning

The Indian Ocean Tsunami of December 26, 2004 made it clear that information about sea level stations that could be used to support detection and warning (such as location, collection and transmission capabilities, operator identification) are insufficiently known or not readily accessible. In 2005, the IDEA Center convened parties interested in addressing this problem and began to develop a distributed metadata system describing sea level stations starting with pilot activities in a regional framework and focusing on tsunami detection and warning systems being developed by various agencies. This involves supporting efforts to expose and harvest sea level station data and products in a way that virtually integrates this information. This will result in a distributed global network of data providers, who are able to contribute sea level station metadata via their own Information Technology departments. Such a distributed metadata system for sea level station information will also contribute to other marine hazard warning systems (such as storm surges), as well as sea level change monitoring and research.

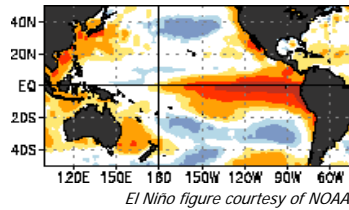


The National Oceanic & Atmospheric Administration's Integrated Data and Environmental Applications (NOAA IDEA) Center will advance NOAA's mission objectives to help meet critical needs for climate, ocean, and ecosystem information to protect lives and property, support economic development and enhance the resilience of Pacific Island and other coastal communities in the face of changing environmental conditions.

Initial program elements of the NOAA IDEA Center include:

Support for regional and global observing systems and programs

with initial priority given to support for the Pacific Island Global Climate Observing System (PI-GCOS), the Pacific Island Global Ocean Observing System (PI-GOOS), and the Pacific Islands Integrated Ocean Observing System (PacIOOS) as critical contributions to the emergence of the Global Earth Observation System of Systems (GEOSS).



Development of new integrated data products and environmental applications,

- ◆ Climate vulnerability and adaptation
- ◆ Coastal and marine ecosystems
- ◆ Hazards risk management

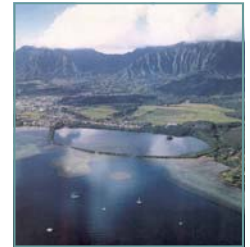


Photo of He'eia ahupua'a courtesy of NOAA PSC and Ken Jacques

and supporting high priority regional and NOAA needs for enhanced information on:

This program element will also include workshops and targeted pilot projects to explore emerging technologies (e.g. data integration and visualization techniques, SOA and data related technologies).

User engagement, education and outreach, to enhance awareness of NOAA data products and services and support the emergence of an end-to-end environmental information system designed to meet the needs of decision-makers in government, businesses and communities throughout the Pacific; and



Photo of monk seal & turtle courtesy of NOAA NMFS



Photo of a Samoan fale

Establishing the critical national, regional and international partnerships necessary to support these objectives.

Coastal Inundation and Erosion: An Initial Product Line

Coastal storms, and the strong winds, heavy rains, and high seas that accompany them, pose a threat to the lives and livelihoods of the peoples of the Pacific. Led by the NOAA IDEA Center, the Pacific Region Integrated Climatology Information Products (PRICIP) project is an effort to improve our understanding of patterns and trends of storm frequency and intensity—"storminess"—within the Pacific region and develop a suite of integrated information products that can be used by emergency managers, mitigation planners, government agencies and decision-makers in key sectors including water and natural resource management, agriculture and fisheries, transportation and communication, and recreation and tourism.



Nome, AK boat harbor during a normal day, courtesy of John Lingaas, WFO Fairbanks NOAA's National Weather Service

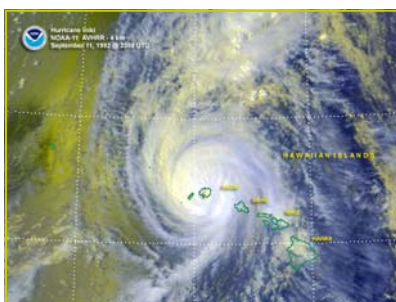
PRICIP is exploring how the climate-related processes that govern extreme storm events



The same view during flooding in 2004, courtesy of Jerry Steiger, WSO Nome, NOAA's National Weather Service

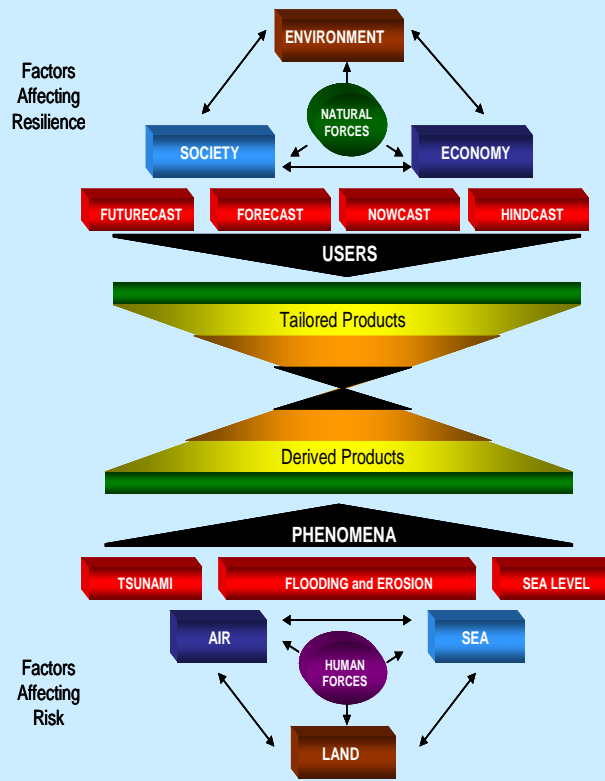
are expressed within and between three thematic areas: heavy rains, strong winds, and high seas. It involves analyses of historical records collected throughout the Pacific region, and the integration of these climatological analyses with near-real time observations to put the current weather into a longer-term perspective. Theme-specific data integration and product development teams have been formed to carry out this work. These teams are comprised of recognized agency and university-based experts in the area of climate-related processes that govern storminess. They include representatives from NOAA's National Climatic Data Center (NCDC), Center for Operational Products and Services (CO-Ops), Coastal Services Center (CSC), National Weather Service (NWS), and the National Marine Fisheries (NMF), as well as the University of Hawaii, University of Alaska, University of Guam, Oregon State University, and the Scripps Institution of Oceanography.

This effort is a regional path finding activity towards the development of a national comprehensive coastal climatology program.



Hurricane Iniki impacting the Hawaiian Islands, September 11, 1992.

Image courtesy of NOAA OSEI



Coastal Inundation and Erosion Integrated System Architecture

This figure depicts the basic construct for defining the elements of the coastal inundation and erosion problem and delineating the relationships among and between them. At the top is the social system and the combination of factors within it that affect community resilience and that, in turn, drive end-user product and service requirements in terms of content, format, timing, and delivery. At the bottom is the physical system and the combination of factors within it that, through their interaction, generate the different inundation and erosion phenomena that affect risk. At the center of the figure are the connections between the social and physical systems. Depicted as an hourglass, it represents the transition from derived data, through the development of applied data products and decision-support tools, to the production of a tailored information suite applicable to a wide range of users, and the iterative, two-way interactions among producers and users that leads to the creation of these data and information products.

From Marra, J.J., Allen, T., Easterling, D., Fauver, S., Karl, T., Levinson, D., Marcy, D., Payne, J., Pietrafesa, L., Shea, E., and Vaughan, L., (in press).

"An Integrating Architecture for Coastal Inundation and Erosion Program Planning and Product Development". *Special Issue Marine Technology Society Journal*, 2007.



Mr. Akapo Akapo, NOAA NWS, Am. Samoa and Chris Chung, NOAA PSC, photo courtesy of NOAA



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