

Ocean Observations

What are they, and how do they help save lives and livelihoods?

- **Ocean observations** will enhance our ability to forecast negative changes in the environment, delivering predictions well in advance of hazardous events. Earlier predictions mean decision makers can take quicker and more targeted actions, such as closing beaches to avoid illness caused by harmful algal blooms.
- **Ocean observations** combine data such as surface current speed and direction, satellite images showing ocean color, weather conditions, and wave heights. The delivery of this information allows coastal communities to protect water quality and public health.
- **Ocean observation** technologies can detect ships, thus enhancing the security of our nation's ports and harbors.
- **Ocean observations** will enable the development of improved ocean forecasts for maritime operators, allowing mariners to optimize shipping routes for increased fuel efficiency and faster deliveries.
- **Ocean observations** are data that decision makers can use to better plan zoning and coastal construction projects. With more information comes better solutions and better planning, helping to minimize adverse effects of weather, rising sea level, and flooding, thus reducing property damage and saving lives and dollars.
- **Ocean observations** provide information that is critical to the identification and evaluation of alternative energy sources – such as wave, tidal, and wind energy.
- With **Ocean observations**, offshore oil and gas companies will have better access to data on oceans and weather. This will allow improved predictions of how ocean conditions and severe weather may affect drilling operations and infrastructure. This broader picture will permit more informed decisions about when to drill, how to design and build stronger facilities that can survive severe weather and natural hazards, and when to evacuate personnel during storms and hurricanes.
- **Ocean observations**, when available quickly and in formats that work together, allow scientists to rapidly incorporate more information into computer models. This leads to more timely and accurate predictions of the fate and transport of spilled oil and other pollutants. Delivering these better predictions to decision makers will enhance response operations and diminish environmental damage.
- **Ocean observations**, by delivering information that improves the ability of ships to safely transit waters, can reduce the number of vessel groundings, reducing physical damage to marine ecosystems such as delicate coral reefs.
- **Ocean observations**, such as data on the shape of the ocean floor and aerial images of the coastline, can be used together to identify ecological areas that need protection, track

ecological change, and take steps to manage or adapt to this change – protecting precious resources.

- **Ocean observations** enable fisheries managers to make better decisions regarding harvest seasons and to determine protected areas, allowing fishermen to maximize harvests and economic returns while protecting fish populations.
- **Ocean observations** will permit more effective protection and restoration of healthy marine ecosystems and support the sustained use of marine resources.
- **Ocean observations** combine data from many different sources, permitting better understanding of pressures on the coastal environment. The delivery of this information allows coastal communities to better protect vulnerable marine habitats such as coral reefs.