NOAA Climate Services User Engagement

ECOSYSTEMS

OVERVIEW

Biodiversity and ecosystem health are directly related to the surrounding environment and are sensitive to certain atmospheric conditions. Rapid and gradual climate changes and variations can strongly impact natural ecosystems and the economies that depend on this environment. Having information on how weather and climate trends affect ecosystems and local communities is essential for developing adaptation and mitigation strategies.

KEY STAKEHOLDERS

NOAA works with various groups, both as an actionable information provider and as an applied research partner, to examine the effects of weather and climate on marine and coastal ecosystems:

- International, federal, state, regional, and local governments
- Aquaculture and agriculture businesses
- Academia and other researchers
- Tourism groups and businesses
- Transportation departments and businesses

SECTOR NEEDS

NOAA is effectively partnering with the ecosystem sector to translate climate data into accessible, useful, and accurate products.

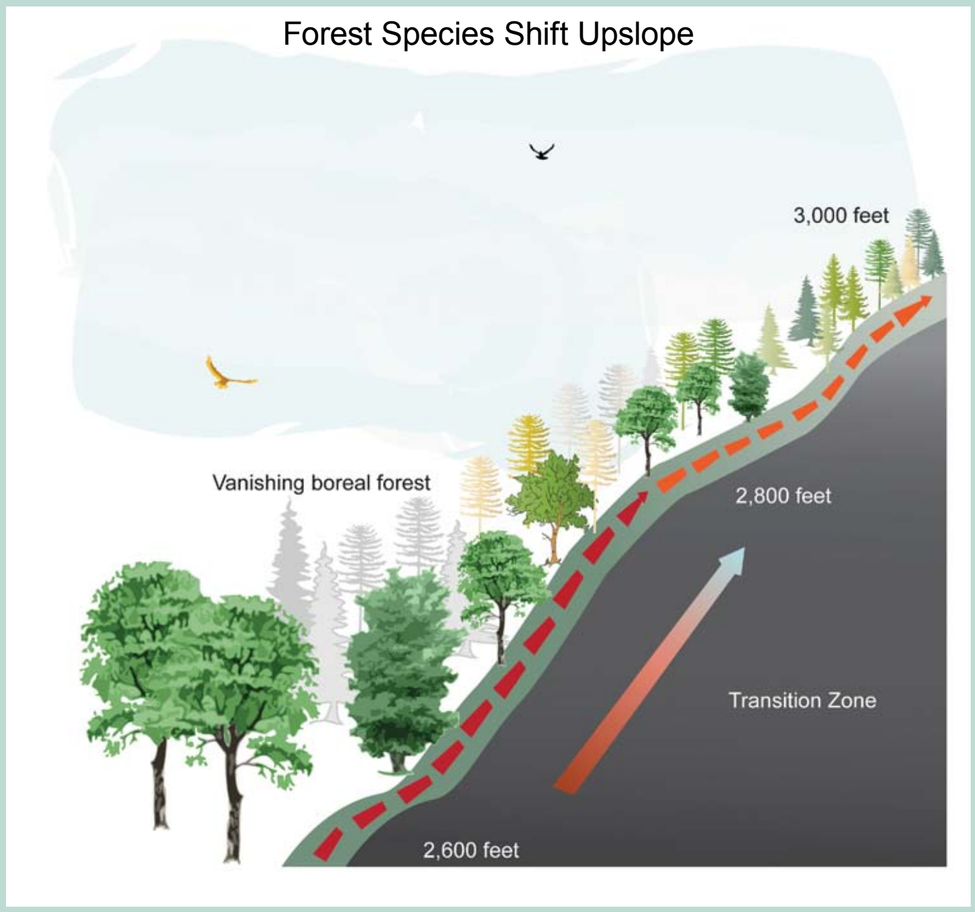
For example:

- Using sea surface temperature data to determine the impact on the distribution, mobility, and health of many aquatic species.
- Using sea-level rise and storm surge data to assess the exposure or inundation of sensitive coastal ecosystems.
- Using long-term climate data to help identify and understand factors that threaten the health of the coral reef ecosystem.

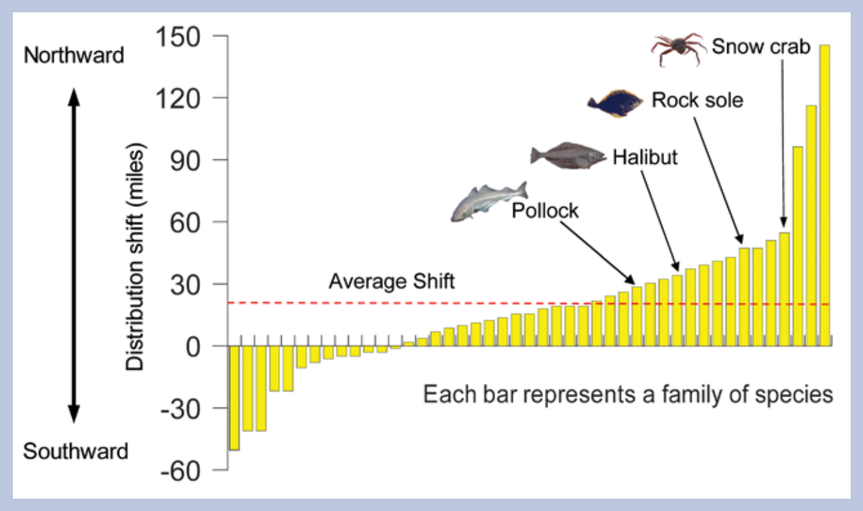
NOAA DATA AND PRODUCTS

There are many different types of useful climate information available. Examples include:

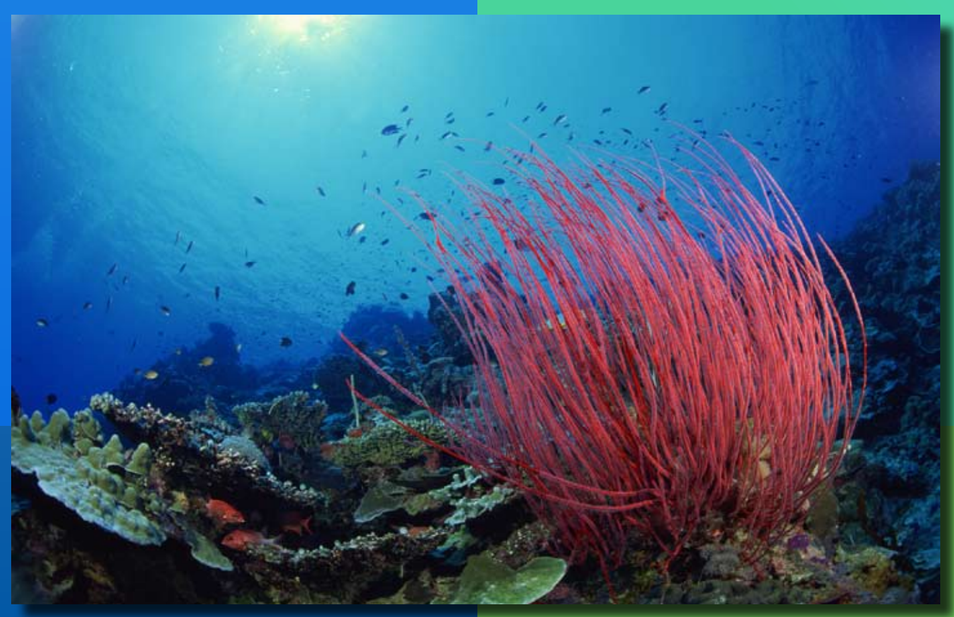
- *Coral Bleaching Products*, which include sea surface temperatures and anomalies, regions of extreme warm water, and degree heating weeks, which indicate the thermal stress that coral reefs experience.
- The *National Integrated Drought Information System* (NIDIS), which is a collaborative system that provides information about drought conditions, impacts, and forecasts, as well as planning, education, and research.
- The *Global Historical Climate Network*, which contains world-wide historical temperature and precipitation data.



As climate warms, hardwood trees out-compete evergreen trees that are adapted to colder conditions



As air and water temperatures rise, marine species are moving northward, affecting fisheries, ecosystems, and coastal communities that depend on the food source. On average, by 2006, the center of the range for the examined species moved 19 miles north of their 1982 locations.



August 2009