

Resiliency and Adaptation to Climate Change and Ocean Acidification

Objective

Strengthen resiliency of coastal communities and marine and Great Lakes environments and their abilities to adapt to climate change impacts and ocean acidification.

Why Do This?

Global climate change and its associated impacts pose serious threats to ecosystems and coastal communities. Warming ocean temperatures have a profound impact on the distribution of rainfall over watersheds, the melting of ice sheets, and the distribution and productivity of species. Sea-level rise, increased severe storm events, rapid erosion, and salt water intrusion threaten low-lying coastal communities. At the same time, climate change is predicted to lower the water levels of the Great Lakes, thereby altering water cycles and supply, habitat, and economic uses of the Lakes. Ocean acidification is expected to have significant and largely negative impacts on marine food webs, ocean ecosystems, and biological diversity. We have an opportunity and a responsibility to develop strategies for reducing the vulnerability, increasing the resilience, and improving adaptation of human and natural systems to climate change impacts.

Potential Actions and Expected Outcomes

- **Provide critical information about the impacts of climate change and ocean acidification** - Access to this information will result in more accurate forecasts of the scale, scope, and impacts of climate change and ocean acidification.
- **Forecast the impacts of climate change and ocean acidification** - These forecasts will support improved vulnerability assessments, adaptation planning, and decision-making.
- **Strengthen and integrate observations from protected areas, research sites, and observing systems** - Coordinating observations from the Nation's sentinel sites will provide managers and communities with the ability to track changes in habitats and species over time.
- **Provide critical climate change and ocean acidification information, tools, guidance, and services** - This action will result in an enhanced ability of individuals, communities, and governments at all scales to identify their needs and ultimately to implement forward-looking, adaptive actions that build ecosystem, societal, and economic resilience.
- **Assess vulnerability of the built and natural environment in a changing climate** - Federal agencies will work with State, local, and tribal governments, non-governmental organizations, academia, and the private sector to conduct vulnerability assessments to inform more effective resilience and adaptation strategies.
- **Deploy and assess the effectiveness of resilience and adaptation strategies** - This will result in informed siting and design, protection of ecosystems, improved public health and safety, reductions in the loss of life and property, and decreased cost of responding to disasters.