CENTER FOR OCEAN SOLUTIONS

Why Ocean Acidification Matters

The ocean is becoming more acidic, particularly in coastal waters. It is not clear whether or how our marine species will be able to adapt, and this poses potential economic and environmental threats: the U.S. depends heavily on its ocean resources for food, recreation, tourism dollars and other ecosystem services. As of 2009, the U.S. ocean economy accounted for $222 billion and at least 2.5 million jobs in coastal states alone.

Winners and Losers Because each marine species responds differently to ocean acidification (OA), the new chemical environment will create winners and losers, potentially altering whole food webs that we depend upon for food and jobs. Many of the likely losers will be **high-value food species** such as oysters, mussels, scallops and lobster. The shellfish industries in Oregon and Washington have already been hit with tens of millions of dollars in acidification-related damages - a canary in the coalmine for other ocean-dependent states and industries.

Increased **atmospheric carbon dioxide (CO_2), nearly a third of which is absorbed into the ocean, is by far the leading cause**, but other pollutants contribute. For example, nutrient pollution from fertilizer can spur the growth of excess algae, triggering additional CO_2 production when the algae decompose. Carbon dioxide pollution is changing the Earth's ocean chemistry more rapidly than anything in at least the past 500 million years.

What to Do About It

At its heart, **ocean acidification is about water quality and air quality**. Many of our existing environmental laws can help to tackle this emerging challenge including:

- The Clean Air Act
- Clean Water Act
- National Environmental Policy Act
- Coastal Zone Management Act
- Local and State Environmental and Land Use Laws

We **critically need a commitment to improved monitoring of ocean acidification, increased research into its mechanisms and effects, and a renewed focus on addressing its root cause, CO_2 emissions.**

As the ocean becomes increasingly acidic worldwide, we are on the front lines of a struggle to maintain the ecological and economic integrity of our iconic coastlines.

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