# The State of the Planet's Oceans



#### Introduction

Since the first of time, before we even thought of time, our ancestors dreamed of wandering the universe. After years of longing, we finally ventured into the solar system searching for signs of life and echoes of earlier civilizations. But now that we have gazed upon far-off worlds, we may have found our answer. Turning homeward, we now see our home as in ways our ancestors never could have dreamed of; a blue planet covered with water and the promise of riches beyond anyone's imagination.

Distinguished oceanographer and explorer Sylvia Earle has ventured to the deepest reaches of our ocean and has seen the bounty of the ocean's riches. "If I could, I would love to take anybody and everyone down into the sea to see what I have come to know and love," says Earle. "Most people on the planet don't get to see the ocean the way I get to see the ocean — from the inside out — getting to meet creatures on their own terms, face to face."

Far from being remote and desolate, the ocean teams with life, even at depths where sunlight does not reach. "The best way to go beyond where divers go is in a little submarine," says Earle. "People ask me sometimes 'aren't you scared? Don't you get lonely down there?' I say — 'Scared? No — I love it down there. And lonely? As you descend it's not completely dark because all around there is a galaxy of light, like being in the middle of a Fourth of July celebration — fireworks — these little sparkle flash and glow — little jellies and minute crustacea."

### The most formidable threat to the oceans — and to all life on our planet — is global climate change.

The ocean is a living system, Earle acknowledges. It drives the way the world works. But, even in its remote depths, the health of the ocean is facing threats from global climate change, overfishing, and pollution that are, in turn, affecting the lives of billions of people living near and far from the water's edge. Communities of fisherman is Portugal and New Bedford, Massachusetts face the extinction of their traditional livelihood after the collapse of the Atlantic cod fisheries. Calcutta, India braces for a influx of environmental refugees from neighboring Bangladesh. Large-scale migration from the Peruvian highlands to the slums of Lima threatens the fragile ocean fisheries that are a vital source of food. Marine sanctuaries that provide havens for ocean life in Caribbean and the Gulf of Mexico are under constant threats from unlawful fishing.

The most formidable threat to the oceans — and to all life on our planet — is global climate change. The scientific community now reports that the level of carbon dioxide in the atmosphere is higher than it's been for hundreds of thousands of years, and our planet's temperatures are rising faster than at any other time in recorded history. Today, climate change is fueled by the richer countries of the world, from mega-cities powered by global economies, and by life styles that impose many times the stress on the planet than those coming from the developing world. The impact on our oceans is profound.

There are no easy answers or quick fixes for climate change. But when it comes to oceans, fortunately, there are communities in the world that are beginning to find new ways to stop the destruction of our marine environment by addressing the problems of overfishing and marine habitat destruction that end destructive behaviors before it's too late.

People everywhere are willing to find ways to strike the right balance, between what we want and what the oceans can provide. Though separated by distance and culture, for the six and a half billion people who draw sustenance from the rich diversity of the natural world, there are common bonds. Bonds that are renewed by each generation, bringing new ideas, new attitudes, new hope for the state of the world's oceans.



#### Explore the program chapters:

- Loss of the Cod Fishery
  - The collapse of the North Atlantic cod fisheries has brought hard economic times to the sister cities of Aveiro, Portugal and New Bedford, Massachusetts.
- Marine Sanctuaries
  - o The Dry Tortugas Marine Sanctuary off the Florida Keys is an example of the successful rebuilding of endangered coral reefs and fish populations. Federal law enforcement has been critical to the sanctuary's triumphs.
- Glacier Melt (Greenland)
  - The rate of glacial melt in Greenland has tripled in the last ten years contributing to global sea-level rise.
- Sea Level Rise
  - o Lowland countries, like Bangladesh, will be among the most impacted by sea level rise. If the oceans rise by three feet, half the rice land in Bangladesh will be covered.
- Glacier Melt (Peru)
  - o Glaciers are retreating everywhere in the world, but the glaciers of the Andes are expected to be completely gone in just a few short years. Populations dependent upon the glacier melt-water for use during the summer dry season will have no source of water.

- Effect of Climate Change on Oceans
  - There's a connection between what happens in the sea and what happens on land. If you take one source of food away from humans, they're going to find another source someplace else.
- Return of the Whale Shark
  - o The Gladden Spit Marine Reserve in Belize has successfully restricted fishing during spawning season bringing back an ecosystem and increasing eco-tourism.
- Svlvia Earle
  - Distinguished oceanographer and explorer Sylvia Earle guides us through the biodiversity and rare beauty of the ocean below the surface.



# Points of View:

### Scott Doney, Woods Hole Oceanographic Institute

We're making choices that future generations are going to have to live with and I don't really think it's our choice to destroy something that they are never going to get to see.

# Stephen Palumbi, Stanford University

Climate change affects everything. All the organisms that live in the ocean are used to being bathed in it, are used to its temperature, are used to where the ocean currents flow and all those things change with global climate change.

The way whales, for example, move back and forth. Where they feed, where they breed is set in their migratory brains. But how are they going to figure out where to move when the climate changes? What about coral reefs? If they disappear because the oceans are becoming warmer and more acidic — will we lose irreplaceable habitats for plants and animals? What about the salmon? How are they going to figure out where the streams have gone when the glaciers that feed them are gone?

There is a whole set of thousands of species that depend upon the ebb and flow of the seasons, the ebb and flow of the currents in order to set the scales of their lives. And all of those are going to change and very quickly with global climate change.

~~~~