

# Understanding the World's Ocean and Climate

Join NOAA for an exploration of the ocean and climate, and how they interact. The series runs Thursdays through June 3.



The Albatross was the world's first large, deep-sea oceanographic and fisheries research vessel. (Photo: USFC)

## CHAPTER ONE

### Do you know who studies the ocean and climate?

The ocean is teeming with life. It is a unique and dynamic environment where you can find deep-sea volcanoes churning out glowing magma as well as colorful coral and sponge gardens inhabited by marvelous fishes and invertebrates. It's also where changes in climate can have a great impact both above and below the water's surface. To understand climate, we have to first know how the atmosphere and the ocean influence each other over a long period of time.

The National Oceanic and Atmospheric

Administration (NOAA) is the lead federal agency entrusted with that job. NOAA's mission is to study our ocean and atmosphere to better understand and predict changes in the environment, and to conserve and manage coastal and marine resources. With the information NOAA scientists gather, we can become more informed about not only our ocean and atmosphere, but climate as well.

### Why is it important to know about the ocean and climate? And how can you become more informed?

Cutting-edge research provides tools to understand the ocean and climate, and how these two aspects of our

environment interact. NOAA has partnered with organizations and educators to develop basic ocean and climate literacy principles that establish a framework of information everyone should know. The goal of these basic principles is to help everyone understand our influence on the ocean and climate and their influence on us.

This five-week series will highlight some of the important work the NOAA's National Marine Fisheries Service (NOAA Fisheries) is doing and will present information on the ocean and climate literacy principles that align to each week's topic. NOAA Fisheries is the federal agency responsible for protecting, conserving and managing our living marine resources (such as fish and marine mammals) in the U.S. Exclusive Economic Zone. It has a long history of research in the Pacific Northwest and Alaska.

### History of NOAA Fisheries

The history of NOAA Fisheries goes back to 1871 when our predecessor agency, the U.S. Commission of Fish and Fisheries, was created. Fisheries have always been important to our nation — as a key source of food for tribes and other seafood consumers, as well as for trade, economic opportunities and quality of life. Government officials recognized early on that all of these activities put increasing

demands on our fish populations, and that it would be critical to balance these demands with the health of our fisheries. In 1970, almost 100 years later, NOAA Fisheries was created.

### Protecting, conserving and managing ocean life

NOAA Fisheries scientists are busy continuing the long tradition of studying ocean life in the Pacific Northwest and Alaska. Our scientists provide information to sustainably manage our fisheries and are pioneering new studies on how contaminants from human activities and natural toxins affect fish and human health.

Advanced technologies — from scanning electron microscopes to unmanned aircraft systems to submersibles and remotely operated vehicles — help us learn things about ocean life that our predecessors could scarcely imagine. With the help of science, NOAA Fisheries managers can make better decisions that build sustainable fisheries, save endangered and threatened species, and maintain healthy ecosystems.

Managers also work closely with Alaska natives, tribes, the fishing industry, other government agencies and the public to help minimize or avoid human impacts to our resources. NOAA Fisheries science is currently being used to develop recovery plans for 18 salmon populations in the Pacific Northwest. In addition, it's helping to manage hundreds of fish populations in the Northeast Pacific, Gulf of Alaska, Bering Sea and Aleutian Islands, and to protect whales, seals and seabirds.

Check back next week to find out more about how NOAA Fisheries works to understand the world's ocean and climate.

## Ocean Literacy Principles

1. The Earth has one big ocean with many features.
  2. The ocean and life in the ocean shape the features of the Earth.
  3. The ocean is a major influence on weather and climate.
  4. The ocean makes Earth habitable.
  5. The ocean supports a great diversity of life and ecosystems.
  6. The ocean and humans are inextricably interconnected.
  7. The ocean is largely unexplored.
- For more information, visit [www.oceanliteracy.net](http://www.oceanliteracy.net).

## Climate Literacy Principles

1. The sun is the primary source of energy for Earth's climate system.
2. Climate is regulated by complex interactions among components of the Earth system.
3. Life on Earth depends on, is shaped by and affects climate.
4. Climate varies over space and time through both natural and man-made processes.
5. Our understanding of the climate system is improved through observations, theoretical studies and modeling.
6. Human activities are impacting the climate system.
7. Climate change will have consequences for the Earth system and human lives.

For more information, visit [www.climateliteracy.net](http://www.climateliteracy.net).

Visit the College of Exploration at [www.coexploration.org](http://www.coexploration.org).

## HIGHLIGHTS IN FISHERIES – PACIFIC NORTHWEST AND ALASKA

