



THE CHANGING TIDE

Ocean life faces a troubling sea change

BY AMY SCHNEIDER

A lot of money goes into denying climate change, and yet despite the best efforts of corporations to deny it, Oregon just had its warmest winter on record, according to the Oregon Climate Change Research Institute (OCCRI): “Eugene was 4.6 degrees warmer than average in December, 2.9 degrees warmer in January, and 5.3 degrees in February.”

Eugene had a record high of 68 in January, and February had five days of temperatures in the 60s. This might feel good for now, but its implications for our seas, plants, animals and water supply are huge, from wolverines who can’t survive in warming wild places to the drought in California and in five Oregon counties.

The Heartland Institute, a major climate change-denial think tank, reported more than \$5 million in revenue in 2013 and just under \$5 million in 2012. A study in the journal *Climatic Change* found that 140 foundations sent \$558 million to almost 100 climate denial organizations from 2003 to 2010.

The study also found that some of the funding has gone dark — Koch-affiliated foundations and the ExxonMobil Foundation were “heavily involved” in funding climate change-denial efforts from 2003 to 2007, according to researcher Robert Brulle. But since 2008, Brulle says Koch donations dramatically declined, and ExxonMobil hasn’t made a publically traceable contribution.

Funding is still going to deny the obvious — humans are changing the climate — but that funding is hidden. Researcher Richard Heede has shown two-thirds of all manmade global warming emissions from 1751 to 2010 can be traced back to 90 companies, and Heede told *EW* that fossil fuel corporations “invested rather heavily in deceiving the public and misinforming Congress.”

In a recent *Register-Guard* front page story on Oregon’s record-low snowpack, the only place climate change was mentioned was in the name of a research institute. *The Oregonian*’s editorial board announced in December that, despite the urging of its readers, it would not address climate change because they think the issue isn’t a state or local one.

How, then, in the face of money and power and a sometimes out-of-touch media, do we battle climate change?

With information. Welcome to *EW*’s Global Weirding issue, in honor of Earth Day and forthcoming Global Weirding columns in our news section. We use the phrase “global weirding” because, as we humans affect the climate, our climate and our weather gets weirder. We need to cut back on fossil fuels, stop denying and start fixing. — *Camilla Mortensen*

In 1994, when astronomer Carl Sagan called our home planet a “pale blue dot,” he described the essence of our fragility. Viewed from Voyager 1, millions of miles away, our entire existence is reduced to a single speck.

“To me,” Sagan wrote, “it underscores our responsibility to deal more kindly with one another, and to preserve and cherish the pale blue dot, the only home we’ve ever known.”

Humans need to cherish planet Earth, including its oceans. Take it from marine ecologist Mark Hixon, a professor emeritus at Oregon State University and currently a professor at University of Hawai‘i at Mānoa, who has studied coral reef systems since 1979. Hixon writes about the death of his favorite coral reef in a 2009 compilation of stories on climate change.

“This kaleidoscopic potpourri of millions of species, born of millions of years of evolution, was no match for the accelerating rate at which modern humans have been warming the global climate with ceaseless carbon emissions,” he writes.

That death was part of a warming event in 1998 that killed nearly 10 percent of all coral reefs on Earth.

Our planet’s oceans are vast but not inexhaustible, Hixon tells *EW*, and scientists are learning how ocean life is threatened by the onslaught of rising sea levels, warming temperatures and a chemical change in ocean waters called ocean acidification.

Casualties of Climate

“There’s a concern that wildlife isn’t going to have a place to live as habitat gets inundated by sea level rise,” Shaye Wolf tells *EW* over the phone from San Francisco. In 2013, Wolf, climate science director with the Center for Biological Diversity, compiled a report that found rising tides threaten 233 federally protected species under the Endangered Species Act (ESA).

Many animals impacted are those that depend on the beach for survival, such as loggerhead sea turtles that use Florida beaches to lay their eggs, or Hawaiian monk seals that give birth on islands and other dry land.

Wolf says in her report that sea levels are expected to rise up to 6.5 feet by 2100, a result of melting ice due to warming temperatures. As ocean waters swallow beaches, a barrier of oceanfront hotels, houses and businesses cuts off access to habitat beyond those beaches. Species are trapped in the middle.

“Many coastal areas in the U.S. are heavily developed, leading to coastal squeeze,” Wolf explains.

In Oregon, the western snowy plover, a shorebird, is feeling that squeeze. According to Wolf’s report, snowy plovers were protected under the ESA in 1993 — plovers were abandoning their nests, surrounded by too much human activity. Wolf says almost half of snowy plover beach habitat is below 6 feet. By the year 2100, plovers might have half as many areas to reproduce and nest.



LONGNOSE BUTTERFLYFISH IN A CORAL REEF OFF THE PHILIPPINE ISLANDS

PHOTO DWAYNE MEADOWS, NOAA