

Karen Telleen-Lawton: Ocean Dead Zones and Climate Change

The Pacific Northwest's dead zone, which might be an irreversible result of climate change, is heading south and has already reached California



A stunning view of Santa Barbara's coastline during a morning bike ride along Gibraltar Road. Below the surface, though, the number of ocean dead zones, which lack sufficient oxygen to support marine life, is doubling each decade. (Karen Telleen-Lawton / Noozhawk photo)

By Karen Telleen-Lawton, Noozhawk Columnist | [Published on 03.12.2012 3:58 p.m.](#)



Santa Barbarans love to peer out over the ocean. It's a live masterpiece — the finest in landscape painting dovetailing the best of cinematic magic. It seems so vast as to be unfazed by human actions.

Yet we've impacted the sea for decades. Yesteryear's pollution issues, such as DDT, seem miniscule compared with today's problems. There are the [Garbage Patches](#), those masses of microscopic plastics and other debris hundreds of miles long that circle in the major seas. And now there are [dead zones](#).

Dead zones have been a phenomenon for decades in some areas. Most of them are the result of pollution, such as the Gulf of Mexico zone stretching thousands of square miles. But the recurring dead zone off the coast of Oregon and Washington is of more mysterious origin. That zone, which has recurred every summer since 2002, may be an irreversible result of climate change.

Ocean dead zones are areas without sufficient oxygen to support marine life. Spikes in algae growth trigger these algal blooms. As the algae die, bacteria feeding on them use up the water's oxygen content in the process. Marine animals suffocate if they can't escape the area.

There are more than 400 of these zones around the world. The number is doubling each decade, according to the [National Science Foundation](#).

The dead zone in the Pacific Northwest has the same disastrous look. The seafloor is piled with crab skeletons, dead fish and other marine life smothered under a white mat of bacteria. Some areas are barren landscapes where there should be riches of Dungeness crab and rockfish.

[Jane Lubchenco](#), a marine ecologist at [Oregon State University](#), couldn't believe her eyes at first.

"It was so overwhelming and depressing," she said. "It appeared that everything that couldn't swim or scuttle away had died."

Curiously, the ocean off the Northwest coast is relatively unaffected with polluted river runoff. The plankton blooms had to come from another source. Researchers

hypothesized that a change had occurred in the natural flushing mechanism of the ocean.

Lubchenco and other ecologists believe that the phenomenon appears to be a symptom of global warming. Evolving wind conditions most likely brought on by a changing climate may be pushing the algae into huge marine gyres that overwhelm the dilutive power of the ocean.

Jack Barth, professor of physical oceanography at OSU, concurs: “I really think we’re in a new pattern, a new rhythm, offshore now. And I would expect [the low-oxygen zone] to show up every year now.”

Although scientists continue to amass data and examine alternatives, signs point to the stronger winds associated with a warming planet.

Most of the marine dead zones can be improved as pollution reaching the ocean is reduced. The Black Sea used to be the world’s largest marine dead zone. It was reversed after the collapse of the Soviet Union, because farmers could no longer afford fertilizer.

But the Northwest’s dead zone has no such “easy” solution. The good news is we’ve gotten past arguing about whether climate change is happening. The bad news is, while we’re squabbling over whether climate change is human-caused or not, the window of opportunity is closing. Some decisions we make now can ameliorate the situation for the future, but other changes already set in motion are now beyond our control.

Stop a change in the wind pattern from happening? That would take some heavenly engineering. The Northwest’s dead zone is stretching south and has now become our dead zone. In the summer of 2006, it reached the California state line. But no worries — it is still hundreds of miles from the Santa Barbara coast.

— *Karen Telleen-Lawton’s column is a mélange of observations spanning sustainability from the environment to finance, economics and justice issues. She is a fee-only financial advisor (www.DecisivePath.com) and a freelance writer (www.CanyonVoices.com).*