

## World

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# Fish numbers plummet in warming Pacific

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By Geoffrey Lean

SAN FRANCISCO – A catastrophic collapse in sea and bird life numbers along America's Northwest Pacific seaboard is raising fears that global warming is beginning to irreparably damage the health of the oceans.

Scientists say a dramatic rise in the ocean temperature led to unprecedented deaths of birds and fish this summer all along the coast from central California to British Columbia in Canada.

The population of seabirds, such as cormorants, auklets and murrelets, and fish, including salmon and rockfish, fell to record lows.

This ecological meltdown mirrors a similar development taking place thousands of miles away in the North Sea.

Also caused by warming of the water, the increase in temperatures there has driven the plankton that form the base of the marine food chain hundreds of miles north.

This triggers a collapse in the number of sand eels on which many birds and large fish feed and causes a rapid decline in puffins, razorbills, kittiwakes and other birds.

The collapses in the Pacific are also down to the disappearance of plankton, though the immediate cause for this is different.

Water temperatures soared to 7C above normal, which delighted bathers but caused the whole delicate system to collapse.

The amount of phytoplankton crashed to a quarter of its usual level.

"In 50 years this has never happened," said Bill Peterson, an oceanographer with the US government's National Oceanic and Atmospheric Administration, NOAA, in Newport, Oregon.

Record numbers of dead seabirds soon washed up on beaches along the coast.

There were up to 80 times more dead Brandt's cormorants, a fishing bird, than in previous years. Tests showed the birds died of starvation.

"They are not finding enough food, and so they use up the energy stored in their muscles, liver and body fat," said Hannah Nevins, who investigated similar mass deaths in Monterey Bay.

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Many fear the ecological collapse is a portent of things to come, as the world heats up.

A Canadian Government report noted that ocean temperatures off British Columbia reached record levels last year as well, blaming "general warming of global lands and oceans".

And Professor Ronald Neilson, of Oregon State University, added: "The oceans are generally warming up and there are all sorts of signs that something strange is afoot."

- INDEPENDENT