Evidence of climate change around Bay Area

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Inside Bay Area

Article Last Updated:05/29/2007 04:47:03 PM PDT

SAN FRANCISCO — Forget the future. Global warming's impacts — be they sea-level rise, weird weather or vast ecological die-offs — are well under way here and now.

Warming trends during the past 50 years suggest the region will have to rethink how it goes about restoring tidal wetlands, such as the vast South Bay salt ponds. Some regions being lovingly restored now may never emerge from low tide 20 to 50 years' hence.

On Wednesday meteorologists, oceanographers and ecologists with the National Oceanic and Atmospheric Administration presented an overview of how the Bay Area will likely fare given global warming's expected impacts.

Most striking was that the scientists did not rely on predictions and models to make an impression.

They just looked back at the past few years.

Fishermen based out of Pilar Point and other commercial harbors are already switching gear as warm-water species like jumbo squid move north. Sperm whales — rarely seen hereabouts — are making regular appearances, following the squid. Meanwhile the giant blue whales, mainstays of the outer Farallon Islands, never showed last year.

And some evidence suggests humpbacks are switching to a fish diet, suggesting the two whales — mom and calf — lost and struggling in the Delta may just be the beginning.

Other examples:

- In last summer's heat wave that killed 140 people and fried nearly 2,740 Pacific Gas & Electric Co. transformers, daily highs were neither notable nor the problem, said National Weather Service senior meteorologist David Reynolds.

It was the nights. Many places in the Bay Area never got below 90 degrees.

"Transformers blew because we never before had to run air conditioning 24 hours a day for four days straight," Reynolds said.

But they will have to. As greenhouse gases such as carbon dioxide from automobiles concentrate in the atmosphere, they act as a blanket, smothering that cool night breeze and reducing its ability to dissipate the day's heat.

- Sea level rise — half a foot so far since 1900 and as much as three feet in the next century — will transform how we go about restoring tidal wetlands, said Natalie Cosentino-Manning, a National Marine Fisheries Service restoration specialist.

In most cases, she said, it will make restoration easier: Areas such as the South Bay salt ponds that have been diked and closed to the tides will be opened either by backhoe or by nature. Properties too expensive to acquire today will become cheaper as owners flee to higher ground.

But efforts to save the few remnant patches of eel grass, a critical nursery for fish and crustaceans native to the Bay, are likely toast, she cautioned.

"We're going to have to accept these changes. We won't be able to restore these habitats in the manner we had intended," she said. "That 1 percent of the San Francisco Bay that's eel grass may not make it."

(Caltrans, partly to mitigate eel grass damaged by construction of the new Bay Bridge span, has already spent $1 million surveying eel grass beds throughout the Bay and $8 million to buy 3,300 acres of North Bay marsh and clear it of old Navy buildings.)

- The crucial offshore upwelling that brings deep, cold water and an astounding bounty of nutrients to the surface will likely weaken, with devastating effect. The first signs came two years ago, when the upwelling was delayed for several months. The same thing happened again last year and appears to be happening again this year, said Maria Brown, superintendent for the Gulf of the Farallones National Marine Sanctuary.

The sanctuary's Cassin's Auklet population failed to breed two years in a row. Blue whales abandoned their feeding grounds. Only 30 percent of common murre chicks survived.

Said Frank Schwing, an oceanographer with the fisheries service: "There simply wasn't enough food there."

The challenge for regulators, said Will Travis, director of the San Francisco Bay Conservation and Development Commission, which hosted the workshop, is how to plan thoughtfully for a future with so much uncertainty.

"We're beginning to think of doing something audacious," he said, "which is instead of restoring the estuary, actually designing it."

Call it adaptive management before we have to adapt, Travis said: Areas of high economic value — airports, cities, housing developments — will be protected behind sea walls. Areas with less economic value — salt ponds, hay fields, Delta farmland — will be sacrificed to the tides.

"The real challenge is what do we do in the Delta," Travis said. "Vast areas are slated for development that are below sea level."

"Wouldn't it be better for society to just buy them out now than figure out how to protect it (later)?"

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