

Last Call of the Auklets

Climate change threatens the survival of this deep-diving seabird.

By Alex Roslin

Mark Hipfner's plans for a summer escape sound like something out of a reality TV show. He'll spend three months in a primitive cabin on a tiny, rocky islet swept by hurricane-force winds and heavy storms roaring in from the North Pacific. At night, he will be serenaded by the near-deafening calls of 600,000 noisy little Cassin's auklets.

Hipfner is headed to Triangle Island, a 45-kilometre boat ride through dangerous seas off Vancouver Island's northwest tip and home to the world's largest

colony of the auklets. He's planning to study these small black seabirds, which are considered a sentinel for global warming.

Cassin's auklets, each weighing about as much as a small orange, are hypersensitive to climate change. Warming oceans affect their diet of krill and copepods — small crustaceans that float around in sea currents.

"Probably the best signal we get from the marine environment (about climate change) comes from these birds," says Hipfner, an Environment Canada marine biologist

and director of the Triangle Island Seabird Research Station.

Hipfner is taking a small team of scientists along to Triangle Island — which is also home to the world's second-largest Steller's sea lion rookery and huge colonies of tufted puffins, common murres and thick-billed murres — to find out how the Cassin's auklets are holding up in the hardest times they've faced since scientists started studying them 30 years ago.

Hipfner will spend the summer picking his way up and down the stunningly beautiful island's



vertiginous slopes, counting bird nests and weighing auklet chicks. He'll be walking in the footsteps of the Tlatasikwala First Nations people, who traditionally came here to fish and gather bird eggs in the summer, and Anne Vallée, a young biologist who died in a fall here in 1982 while studying tufted puffins. (British Columbia authorities subsequently named the ecological reserve that Triangle Island is part of after Vallée.)

The news from Triangle Island so far isn't good. The number of Cassin's auklets on Triangle Island has declined by 30 to 40 per cent since the mid-1980s, Hipfner says.

Farther down the coast, on the Farallon Islands National Wildlife Refuge off San Francisco, another major population of the closely

DEEP DIVING

Pacific Northwest Cassin's auklets spend their days far out in the open ocean, diving deep into the sea in search of krill and copepods. Auklet pairs produce a single egg each season and take turns incubating it in a burrow while the other partner heads to sea. An auklet on the hunt makes 100 or more dives a day — usually to depths of five to 15 metres, but possibly as far down as 40 metres — to gather hundreds of the organisms into a small pouch below its furry neck. It then flies back to its burrow at dusk to feed the chick.

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watched auklets is even worse off. Numbers there are down to just 16,000 — an 80 per cent drop from the first studies in the 1970s.

The declines of both colonies have accelerated as a result of extreme weather events such as El Niño conditions — periods of abnormal warming in the eastern Pacific — that scientists say are becoming more frequent as the climate warms.

In 2005, hundreds of thousands of auklet chicks starved to death on Triangle Island, while the Farallon

Canadian scientists published in the *Proceedings of the National Academy of Sciences*.

Since 2005, the weather has been more favourable at Triangle Island, but the Farallon auklets were hit with a total breeding collapse in 2006. Then, in 2007, unusually strong winds hit, further disrupting the auklets' prey and leading to a poor breeding season.

Scientists at Farallon said they had never seen such grim conditions for the auklets.

"Climate change for us is a big deal," says Jaime Jahncke, a conservation biologist with California-based PRBO Conservation Science. "The birds are going to have a really, really tough time."

Hipfner agrees: "The last 30 years have been a very difficult period for the birds." He is especially concerned about predictions of more frequent extreme weather, which promise a bleak future for the auklets.

In a paper he coauthored in the March issue of the journal *Ecology*, he said climate change poses an "extinction risk" for Cassin's auklets across their entire range from Alaska to Mexico.

"What oceanographers tell us is we can expect the oceans to warm and extreme climate events to increase in frequency," he says. "These have very, very severe consequences. We have reason to be concerned about the viability of these populations." ☺



Islands colony suffered what scientists called "an unprecedented breeding failure."

Warmer oceans have also affected other seabirds at Triangle Island. Puffins there have also experienced increasing breeding failures, rearing no chicks successfully because there wasn't enough food, according to a 2003 study by