

## **Fins in Fjords: Loomings from a great whale feeding ground**

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I awake to the sound of a fin whale's breath. It rushes out of the vast stillness, a powerful wave of bass flecked with a flute-like harmonic. Just as quickly, it ebbs and is lost again in the fjord's steep-walled silence. My first thought of the day is a rough calculation of the animal's distance from me: about one mile due north. I exhale as well, much less auspiciously. Inside my sleeping bag I clench then stretch my back muscles and breathe in the other sounds of the Sound: the chatter of a bald eagle, the ruthless cries of gulls, the clucks of passing murrelets, the morning breeze in the restless huckleberry leaves. I reach for my watch and note the time.

I stumble out to the rocks, my groggy eyes protesting the dawn sunlight. The sky is enormous, the water is like glass, and the air is sweet. In moments I am awake, alive, and all is vivid. I drink it in. After several weeks out here, I am finally beginning to resonate with the rhythm that defines coastal British Columbia, its ebb and flow: the glaciers that grew from nothing, carved these fjords, then disappeared into the backcountry ranges in pulsed retreats; the daily inflow and outflow of winds; the rising and setting of the sun; the dreamy sway of kelp in the swell right off the rocks; the leap and splash of the salmon; the daily commute of sea lions to and fro past the point; the swarm and disarray of flocking surfbirds; the inhalations and exhalations of cetaceans; the call and response of chatter over the VHF radio; the coming and going of ships; the ramping up, settling in, and winding down of my daily research schedule; the shifts between data and narrative that occur in my mind as I try to make sense of new sightings in light of earlier ones; my bated breaths of anticipation each morning and my sublime sighs in the evening, as sunset turns to gloaming turns to heavy, purple darkness. I am in tune with this place. I rise and fall with it.

As a researcher for the North Coast Cetacean Society (NCCS), my job here is simply to watch. To look around and write down what I see, all day, every day. We also listen, using a network of hydrophones that give us an underwater window into the acoustic activity of the fjordland in which we work. All summer long, we watch and we listen, painting a panorama of marine mammal and shipping activity throughout the Great Bear fjordland. Our focus is whales: killer whales, humpback whales, and, my favorite, the fin whale.

From where I stand, I have seen a fin whale feeding just a stone's throw away. Nowhere else on earth can one do this. In the still of dusk, you can hear their

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breaths from several miles away. Sometimes they surprise you with a lunge feed right in front of the point. In this place, fin whales are simply in your face.

This species is extraordinary: it is the second largest animal on earth, incredibly fast, frustratingly elusive, and unimaginably voracious. But it is the fin whale's presence *here*, in these fjords specifically, that sets my scientific imagination on fire. Their proximity goes against everything we thought we knew. Our current concept of the fin whale's natural history is dominated by the theme of Expanse: as one of the largest and fastest marine animals on earth, they can travel across entire ocean basins in mere weeks. Their songs are known for propagating audibly across hemispheres. Their appetites seem to be without horizon, and with every meal their deep-diving lunge feeds scour the upper ocean for tons, literally, of prey.

But here in the Great Bear fjordland, I witness a population of fin whales characterized instead by its confines: they wander through winding, labyrinthine channels day and night; their acoustic range is a fraction of what it is in open waters; they face the trappings of ripping tidal currents and swirling anomalies in salinity and temperature, even as they are funneled to within a body's length of the steep, sharp fjord walls. Everything about these fjordland fins seems to challenge convention. What's going on here? What is it about this place, about these whales?

To make matters more perplexing, only five years ago fin whales were all but unheard of in these waters. They were never seen in the inland corridors. Then, in the summer of 2006, researchers at the North Coast Cetacean Society happened to see one during a survey. They thought it was a noteworthy sighting, but they had no idea that it was signifying an incredible new trend. In 2007, they saw fin whales within their study area again, many more than the year before. In the proceeding years, this pattern grew into a phenomenon. In 2011, there were *fifty-two* sightings! Incredible! On one afternoon in 2010, a research vessel from DFO reported a group of no less than fifty fin whales feeding within a single channel! Outrageous!

By the 2012 season, fin whale sightings were no longer exceptional, but expected. Getting ID photographs of their small dorsal fins from land was not uncommon. By August sightings occurred almost daily. The fin whale is now a staple of these waters, as representative as the classic wonders that make the Great Bear Rainforest so renowned: the humpback whales, the killer whales, the coastal wolves, the eagles, the grizzlies, and the "Spirit" bears.

How do we account for this fin whale invasion? Why this sudden appearance? Where are they coming from? One possibility is that their numbers are increasing; perhaps population growth is forcing them to spill out of the ocean and into the coastal inlets. Or maybe their numbers are not growing, but just moving; are they emigrating from the open ocean into the fjords? Perhaps they are being compelled by shifting climate or overfishing to risk the coastal maze in order to satisfy their

hunger. Is El Nino to blame? Are melting glaciers altering the food base in these waters? Or does it have to do with competition? Are recovering populations of blue whales outcompeting fin whales in the open waters? The possibilities seem endless.

Explaining this trend becomes even more difficult when we consider this region's history. Given the last century of whaling and expanding industry, it is difficult nowadays -- if not impossible -- to say what is pattern and what is exception. How important were these fjords for this species before whaling? Records indicate that fin whales were hunted both within these coastal corridors and out in the open northeast Pacific. This could have exterminated a coastal subpopulation of fin whales, wiping out the species' knowledge of these rich waters. Is it only now that offshore fins are stumbling upon this long-forgotten refuge? Or perhaps, with the horrors of the whaling age still fresh in the memory of this long-lived species, they had been deliberately avoiding the area. Is their return to these fjords a sign that we are regaining their trust?

The mystery of the fin whales' past in these waters is equaled by that of its their future. Will the whales use these fjords in the same way or to the same degree that they used to? How many fin whales can this place support, and for how long? Despite the remoteness of these waters, the Great Bear fjordland is by no means pristine. The slaughter of whales may be over, but it was merely replaced by the pillage of their habitat. Fleets of fishing boats raid these waters every year, taking away whale food even while dumping pollutants and noise that surely make these waters less attractive. Cruise ships plow through these corridors, and tanker traffic is staged to expand drastically thanks to initiatives from Enbridge and LNG. Will these fjords ever be as important to fin whales as they were a century ago? Should we be excited or concerned that the fin whales have rediscovered this place?

This proliferation of questions brings us to a final one, as daunting as all the rest combined: Where do we begin? If the North Coast Cetacean Society is on the right track, which I think they are, then the approach is apparently three-fold: First, keep watching. Second, keep listening. Finally, look even closer, and from new vantages. With NCCS's two visual observation labs, a network of both live-monitored and continuously recorded hydrophone stations, and the support base they offer graduate students like me to pursue my own research questions in the area, many of the above riddles are as good as solved. The answers are right here, in the ebb and flow of this place. I awake to them every day. They are hidden in distant blows, heard in the faint rumbling calls, and reflected in the flush of spring tides, the swirling patches of zooplankton, the shimmering balls of bait. It is just a matter of continuing to watch and listen for them. It is just a matter of looking, of being *out there*. It is a matter of exploration.