

Excerpt of *The 100-Mile Diet: a year of local eating*

By Alisa Smith and J. B. MacKinnon

(from page 132 to 142 of the 100-Mile Diet)

The corner office of Richard Hebda, paleoecologist and senior curator at the Royal British Columbia Museum, is a place of imagination. His desk, when I visited, was pure chaos in a room piled with specimen cases, bottles and pipettes, plant presses, file boxes. There was a bag of rocks on the floor, a wedge cut from an ancient tree weighting a ream of paper. Hebda himself looks athletic, with a fringe of silver hair swept back at the temples. He specializes in tracing strata of ancient pollen back into prehistory, but his office is a gathering point for a wide range of research from across the Pacific Northwest.

“It’s true time travel,” said Hebda. “That’s what I do—that’s what I get paid to do.” Which is why I was in his office this day, the last before the harvest moon that would rise full and orange at dusk. Hebda is preoccupied with plenitude. There is nowhere better to consider the question. In the same way that the Amazon is a place to contemplate biodiversity, or the Galápagos Islands to wow at evolution, the Pacific Northwest coast is the locus of supersized life. Temperate rain forests are home to the planet’s greatest biomass, literally the weight of living things. Life here is heavy. The trees alone—the Sitka spruce, Douglas fir, coastal hemlock, and western redcedar—are the largest freestanding life forms of all time.

Humans tend to be a forward-looking species, and so paleoecology—that is, ecological history—is a new science, mere decades old. The first comprehensive history of the North American environment was only published in 2001. The author was an outsider, as is often the case when a new perspective is required; in this case, it was Tim Flannery, a zoologist and visiting chair of Australian Studies at Harvard University. In his *Eternal Frontier: An Ecological History of North America and Its Peoples*, he declares what may be the paleoecologist’s first principle: “First we must know what it was like.”

Which is a pleasure, in its way. Flannery takes us back 18,000 years, a time span too brief to result in significant evolution of species. The landscape, then, would be in many ways familiar, though organized by a different pattern (sea levels, for example, are more than 300 feet higher now). It is nonetheless a place that modern humans would find otherworldly. For example, the plains were dominated by mammoths, in places living perhaps as densely as elephants in Africa, which can average nearly nine animals per square mile. The mastodon, a smaller trunked and tusked beast but still fifteen feet tall at the withers, roamed the forests. Ours was a continent of giants: immense long-horned bison, camels, llamas, wild boar, and three species of ancient horse; huge moose, deer, pronghorn, musk ox, and wolf; and the short-faced bear, the largest meat-eating mammal ever to have lived and a possible inspiration for the ancient Gitksan myth of Medeek. Ground sloths lumbered, and despite a climate not so different from today’s, there were lions,

sabre-tooths, scimitar cats, cheetahs, and jaguars in the northern forests. Everything seemed to have its larger equivalent, from vampire bats to tortoises. Even the wildest and most profuse corners of our planet today, says Flannery, such as the famous Serengeti safari country of Tanzania, offer only a “framework” for any attempt to envision the abundance.

I was more interested in a nearer history. The age of the giants ended around 13,000 years ago, with competing theories blaming climate change or human hunting as the cause of the mass extinction. By the time explorers from Europe and Asia opened the most recent chapter in North America’s story, it was a reduced but still bountiful New World, and its richest corner was the Pacific Northwest.

To begin, Hebda suggested, I might consider how many people lived in the area that is now our 100-mile circle in the years before Columbus put ashore in the Americas. While the exact number is contested, it was certainly high—a study of a single archipelago in one large bay off Vancouver Island found evidence of a past population of 5,000 people. Estimates for the Northwest coast as a whole at that point in history suggest hundreds of thousands, the highest numbers north of the Valley of Mexico. By any measure, the rain coast was no empty wilderness. And all those people were sourcing virtually all of their food locally.

Most of what is known about the indigenous diet comes from middens, like the one that attracted the first settlers to Walker Hook on Salt Spring Island. Some of these ancient dumps of shell and bone are up to fifteen feet deep and as long as the Empire State Building is tall. What they contain is equally impressive. The number of animal species the average North American now relies on for food could likely be counted off on fingers and toes; one list of the species found in coastal middens totalled eighty-eight, and only included animals drawn from the sea. Ethnographers did not hesitate to declare the region’s first inhabitants “the richest people in North America.” So far from desperation were the natives of this place that the anthropologist Wayne Suttles made an early name for himself as the first to argue that Pacific Northwest tribes did in fact occasionally suffer hunger and want. It could occur under certain conditions. One of these would have been the collapse of a local salmon run, like the one that occurred on the Cheakamus River in 2005.

Facts like these might be the best windows into what the world once looked like, but there are still chances, Hebda said, to take actual physical glimpses. I remembered an autumn morning when I was among a lucky few motoring in a rubber raft to the mouth of the Khutze River, lost in the puzzle of British Columbia’s fractured coast and one of the least industrialized parts of North America. We entered the bay through a lifting flock of Bonaparte’s gulls, some already marked with the black teardrops of their winter plumage. Beyond them, the high tide had buttonholed the river, which flooded its banks and ran deep through the forest. Looking down, I could see salmon swimming through huckleberry bushes and the limbs of trees, salmon drifting through clusters of fairy-ring mushrooms. Dozens of bald eagles watched the surreal spectacle from the bare limbs of a tree. Slipping from the bank,

an otter. A herd of seals, heads bobbing, seven of them crowded on a deadhead log. They stared with gathered eyebrows. Had we come to spoil the party? Had we come to disturb so perfect a world that the seals no longer ate whole fish, but instead took occasional lazy bites out of passing salmon? And the salmon did not end at the water's edge. Their corpses spread deep into the forest. Some of the fish were reduced to drying bones; others were immaculate but for a neat incision at the top of the head where a discerning bear had eaten only the brain. Soon enough we would see the bruins—four black bears, big boars and sows—strolling in sedge meadows the colour of lemongrass.

I recalled thinking, Where have I ever seen anything like this? The only answers came from the virtual world of Imax documentaries and reruns of Wild Kingdom, with Marlin Perkins wearing a too-tight suit on the plains of Africa. Like almost everyone today, I was completely unaccustomed to the kind of earthly abundance that seems scarcely believable in the journals of the early explorers: the buffalo filled the horizons; the passenger pigeons blocked out the sun; the cod were so thick you could walk on the water like Jesus of Newfoundland.

Hebda nodded at my description. Then he leaned across his desk, looking up at me from beneath tufted eyebrows. “The difference is, that would have been everywhere.”

I try to imagine.

First, the open ocean. Everything here comes from or returns to the sea. Archibald Menzies came aboard the sloop Discovery, an aging naturalist on behalf of His Majesty King George III. On April 7, 1792, he made his first observation regarding this rain-forest coast. The ship had sailed, he wrote, into a mass of Medusa velella, “a very delicate blue” that stretched from horizon to horizon. It took nearly five days to sail through the sea of jellyfish, while around the ship whales surfaced and blew.

There were whales, yes, and not only the scattering of killer whales that, nearly two centuries later, would be so reviled that an anti-aircraft gun was set up near one port town with a thought to killing them faster. Picture the steam vessel Douglas in 1868 at the mouth of Baynes Sound, now famous for oysters, as hundreds of humpback whales pass by, their dead-man's songs groaning up through the hull. As many as 600 humpbacks might have lived year-round in the straits and sounds where Seattle and Vancouver are now. They would have hunted the herring. The little fish came in numbers that biologists now call a “mega-stock,” but the language of science fails to capture the bounty. Better: fishermen's memories of spawning runs so thick that the ocean floor can't be seen and whole bays turn white with milt. Then there was the phenomenon known as the “herring ball,” in which the fish, driven by unseen predators below, exploded at the water's surface with a sound like some massive exhalation, the water boiling silver, the herring caught between the sea and the sky. The Haisla tell a story of a time when people were afraid to paddle up a certain passage because a monster appeared to have settled at its entrance. It was huge and

white, and when it opened its mouth a maddening cry roared down the channel. The monster turned out to be gulls, tens of thousands of them, feeding on herring. The immense flock would rise and fall on the water, a giant mouth opening and closing.

As the herring spawn ended, the oolichan came, each fish a hand-span long and so rich in oil it could be dried and fitted with a wick through the mouth to burn like a candle. They rushed in vast shoals to the Fraser River, spawning in shallows barely deep enough to cover their backs. These were the images of spring, like the arrival of millions—literal millions—of migrating western sandpipers. Sandpipers in spring, in the autumn, the snow geese, and in winter the endless dark flocks of surf scoters with their bold orange, red, and yellow bills. In their season, the largest gatherings of bald eagles in North America, lining the riverbanks by the thousands. In their season, the black brant geese. The coast pilgrim and artist Jim Spilsbury remembered them “by the thousands and millions,” covering acres of the winter sea, or rising as one bird with a sound like thunder to “literally darken the whole western sky.”

It is young Jim who stands in an archival photo with, to one side, a huge salmon hooked by his mother, and to the other, the cod that had attempted to swallow the salmon. The two together totalled sixty-five pounds of fish, or enough to serve a restaurant-size portion to more than 120 people. At the mouth of the Fraser River, the place still called Sturgeon Banks, the white sturgeon could weigh as much as a plough horse. Deeper were the rock reefs and the rockfish. Say the names: yelloweye, quillback, silvergrey, roughey, shortraker, copper, china, canary rockfish. They can live to be over 100 years old, and take twenty years or more to reach puberty.

A drawing from 1902 shows two figures off Pender Island, spearing rockfish from a rowboat. To fish with a spear demands an ocean crowded with fish, nearly bursting with fish, and so does the Salish technique of fishing with a lure pushed to the seafloor with a pole, then freed to toggle to the surface, attracting the tooshqua, the big lingcod, to be netted or gaffed. These are techniques for abundance, for the kind of sea that could make a pioneer inspector of fisheries declare, in 1892, “The halibut industry is capable of being increased to an almost unlimited extent,” the kind of sea that could annually give up enough halibut to feed 10,000 people a meal every day for a year, and this when the boats still fished under sail. A sea whose immense shoals of spiny dogfish could provide enough oil to illuminate a new century’s lighthouses and grease lumberjacks’ skidroads into the forest.

The forest. The day before he stepped into it, Robert Brown, a twenty-two-year-old explorer who in 1864 became the first colonial to go by land across Vancouver Island, simply stood on a hill and stared at the dense waves of green fading into the distance. The Europeans entered that dark realm slowly. Even for the Salish the woods were a menagerie of the spirit, with trickster Raven and transformer Bear and the Bigfoot and creatures with jointless legs that chased hapless hunters along the mountainside. It was a struggle just to enter the dim cathedral of green, and Brown’s

team, when it finally left the natives' worn paths, crawled on all fours or "cooned it" along lunatic catwalks of fallen trees. By night, their camps were haunted: "a wild, weird-like cry"—almost certainly the shriek of a cougar—and the laughter of loons, or a single wolf's howl followed by the chilling chorus of the gathering pack. By day there was meat on the hoof enough that the expedition hunter, One-Armed Tomo, frequently brought back only the hindquarters of the deer. "Eat plenty of venison," Brown would advise future pioneers, "save the flour and bacon for hard time." Grouse and partridge were easier pickings still. "If a man is hungry," wrote Brown, "it is easy enough with a revolver to clean a bush of them, simply by commencing at the bottom and finishing off with the birds in the topmost branches."

But then there were days when the expedition felt cursed, when they saw no game at all. I knew the sensation. I once passed a week in a remote northern park, a place twenty times the size of Yellowstone and an hour by floatplane from a town that is itself a seven-hour drive from the nearest hospital. It was the wildest place I have known. Yet I never saw more than the distant glimpse of an animal—a bull moose shouldering into a willow stand, a wolf loping down-valley. The abundance was visible only in tracks. Trails, as deep and clear as the finest hiking path, climbed the shoulders of mountains and traversed the plains, hinting at the constant presence of mountain goat, wolverine, caribou, grizzly. Even the muddy floor of a lake's shallow bay was crossed and recrossed by the imprints of moose. Plenitude can be shy. Or not. In 1907 the coal baron James Dunsmuir anchored his steamship Thistle on the North Pacific coast and, with a total of four men and a morning ashore, shot a dozen bears, four of them grizzlies.

Those bears would have gathered for the coming of the salmon. Until the salmon have been considered, nothing has been considered. The Pacific coast is a salmon landscape, salmon rivers and salmon forests, and in a "big year," the peak of a four-year cycle, 50 million sockeye may once have moved upstream. I have seen today's great salmon runs. Not only that, I have swum among the fish, their backs breaking the surface around me with a pleasing, constant rhythm, the way you wish shooting stars might appear in a meteor shower but never do. Yet a run of 50 million fish is astronomically greater, a glimpse into an era when a place could be named Catch 'em With Your Hands Creek and settlers complained that the splashing of spawning salmon threatened to swamp their canoes. Every creature that eats flesh would have come to the rivers for the feast. Twenty-two forest mammals are known to eat salmon, more species than most people can name. The fish feed even the soil.

Some years ago I interviewed the first mate of a ferry. He had worked on boats all over the world, but the single greatest moment of natural abundance he had seen had been here in the waters of the Salish Sea. It had been decades ago, and he was on the bridge with his captain, sailing along the border between the United States and Canada, about sunset, and suddenly there were whales; there were killer whales and porpoises; there were herring balls and gulls and sea lions and waves of migrating birds and just so much life, such exuberance of life. The captain had idled the engine and they just sat a while and enjoyed it, letting the schedule go to hell.

Perhaps what he saw came close. Even this, though, is not enough. It is better, maybe, to return to the perspective of the most practical human needs. Looking at the indigenous wealth of the Pacific Northwest, the pioneering anthropologist Philip Drucker of the Bureau of American Ethnology said the following: “Most of the time food was available, and frequently it was so abundant that with the most extravagant feasting they could not use it all up.” But then, that is exactly what happened. We used it all up.

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