

EPILOGUE

To finish is sadness to a writer—a little death. He puts the last word down and it is done. But it isn't really done. The story goes on and leaves the writer behind, for no story is ever done.

—JOHN STEINBECK,
personal letter, *Steinbeck: A Life in Letters*

FOR three years, I lived in an abandoned fish camp at the end of a pier in the lonely harbor of Ucluelet on Vancouver Island. In the early mornings, seagulls dropped clams on my roof, trying to break open the shells. Harbor seals barked like neighborhood dogs. Schools of herring bubbled to the glassy ocean surface, creating ripples like rain falling on water.

Down the harbor sat five other fish packers that form a veritable “Fish Camp Row” along the waterfront. The camp buildings look like huge corrugated aluminum boxes stacked atop each other, three or four stories high. Each camp contains ice-making machines, freezers, a two-story icehouse, unloading stations, an office and a small apartment for the “campman.” That’s where I lived.

My grandfather Gordon Edwards moved to Ucluelet from Harbor Le Cou, Newfoundland, in 1938. He was one of a group of fishermen who founded the Ucluelet Fishing Company and built this camp. Old-

timers tell me he was a hard-drinking, competitive man and a highliner. For more than twenty years, he sold his daily catches of salmon to the company and when he died his ashes were spread over the fishing grounds of the outer shores. Thanks to men like him, the company became a pillar of the community. Its profits were divvied up among the fishermen who owned or sold fish to the company, and some were given to the local fish hatchery to ensure stable salmon runs for the future. The company even gave me a scholarship to go to college. During summer breaks, I returned to fish with my father on our family's hook-and-line troller, the *Tribute*. Then, in 1994, the company manager offered me the job of campman.

I ran the ice-making machines, filled the boats with tons of salted ice and graded the silvery catches of pink, coho, chinook, chum and sockeye salmon when the boats would return from a week at sea. The docks bustled with fishermen whose personalities were as colorful as their nicknames: Snakebite, The Lord, Jumbo, Mountain (my uncle), Crazy, Captain Crunch, George the Greek. But that summer was my last working on the decks and docks of B.C.'s salmon fishing industry.

Two years later, salmon stock depletions and a government program to downsize the fishing fleet turned Ucluelet into a ghostly harbor. No fishing and no fish boats. My father retired, finally, at the age of seventy.

When I finished college that year, Dan Edwards, a local fisherman and a cousin of mine, suggested I come home to work with coastal communities and aboriginal tribes that were fighting the government's plan to buy out many small-boat fishermen. Back home again and looking for a place to stay, I inquired about the vacant apartment in the fish camp, which was now virtually bankrupt. It was available and cheap, so I moved in immediately.

The camp is much like Ed Ricketts' lab, except it sorted, packed and shipped salmon instead of scientific specimens. And like the lab, accommodations were upstairs and business operations were below. When I first moved in, I discovered the sewage pump was broken. Then the water line burst. For a month I showered in a nearby motel and washed my dishes with bottled water.

Nineteen ninety-seven was an especially bad year for Ucluelet. It was one of the windiest winters on record. Terrifying squalls rocked the

camp on its old creosote-soaked pilings. On Easter Sunday, wind gusts reached 130 kilometers per hour. The hurricane-force winds blew rain through every crack in the building. My bedroom, living room and kitchen sprang leaks. The downstairs office was flooded. The entire building was either rotting or rusting. The docks were half-sunk. The gangway teetered and eventually collapsed.

The following winter scientists recorded the strongest El Niño in history in the tropical Pacific. Energy from the warm water current (about four degrees Celsius above average) was affecting the jet stream, the high-altitude, swirling river of air, causing extreme weather patterns, including torrential floods and violent winds. As El Niño moved northward through Mexico and California, it left a wake of death and destruction. One climatologist called it “the El Niño of the century.”

Around this time, ocean survival rates for some North Pacific salmon stocks mysteriously declined by 60 to almost 90 percent. In one northern B.C. river, scientists discovered almost no coho salmon survived their ocean migration back to their natal river. And like the collapse of the sardines half a century before, solid explanations eluded everyone. Habitat degradation, high-seas poaching or pollution could be causes. Global warming could also be affecting the marine ecosystem. Some scientists talked of an environmental “regime” shift in the ocean. Many fishermen pointed to El Niño and the rapacious schools of mackerel, which follow the warm water and eat juvenile salmon, as the culprit. Whatever the explanation, the severe storms and collapsing salmon stocks spelled doom for many fishermen. The United Nations declared 1998 the International Year of the Ocean, but there was little to celebrate. The entire outer coast of Vancouver Island closed to commercial salmon trolling—the first time in the hundred-year history of the fishery.

Living in the fish camp that winter, I couldn't help but draw a parallel between the severe storms, long dark days and the chaos in the ocean ecosystem and the dust storms of the Dirty Thirties and their catastrophic affect on farming. I bought a dog-eared copy of *The Grapes of Wrath*. “The dawn came, but no day,” Steinbeck wrote. “In the gray sky a red sun appeared, a dim red circle that gave a little light, like dusk; and as that day advanced, the dusk slipped back toward darkness, and the wind cried and whimpered over the fallen corn.”

And just like during the Dust Bowl, it would be rural working families and native people—those at the economic margins of society—who'd pay the greatest price for this crisis, which the government blamed on forces beyond its control: environmental conditions and depressed global salmon prices. The reality was that the Canadian government had grossly mismanaged the fishery with unsustainable catch levels and lacked the political will to protect the salmon from industrialists and developers. Urban sprawl, highways, pollution from mining, farming and pulp mills, hydroelectric dams and especially industrial logging or “clear-cutting” destroyed river and stream habitats critical to salmon.

Even though purse seine boats—which had wiped out Monterey's sardines in the 1940s—posed the greatest threat to the industry and were also the most overcapitalized, it was the smaller hook-and-line and gillnet fishermen who were targeted with the biggest cuts. According to one fisheries economist, the government's policy was “a clear threat to smaller fishing communities.” The native village of Ahousat (which Ricketts visited in 1945), for example, lost half its jobs as a result of this skewed policy. The big fish companies, merging into even bigger food conglomerates with supermarket chains, would weather this storm.

By 2001, the cumulative effect of fish stock depletions, fleet downsizing and downturns in the coastal forestry industry caused the largest population decline on the rural coast in modern history. Several coastal communities lost more than a quarter of their citizens. I actually met fishermen—and in one case an entire family—who lost their homes. They piled their worldly possessions onto their fishing boats to wander the coast like marine “Okies.” Down on the docks, other fishermen, forced out of the inshore salmon fishery, were strapping huge fuel drums to the decks of their small vessels. They were traveling 100–200 miles off the coast to go tuna fishing. It was a desperate, even deadly, act since their forty-foot boats weren't designed to weather offshore storms.

One day a fisherman who had bought my grandfather's boat, the *Terry Wayne* (named after my uncles Terry and Wayne), arrived in Ucluellet on a refitted North Sea trawler. He had sold his small salmon fishing boat and bought this larger vessel, which he converted to a tuna boat. He gave me a tour of the freshly painted ship with its new freezers and an engine so spick-and-span you could cook steak on its manifold. He

looked bug-eyed and spoke anxiously, though. He knew there was no future for small-boat fishermen on the coast. He bought a big boat and was leaving his family and going west. He was going so far west that it sounded like the Far East to me. “I’m going to Midway and the South Pacific,” he said. He was heading to the new Wild West, a largely lawless realm of unfettered opportunity and unclaimed bounty—the high seas.

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THE ocean is humanity’s last frontier. Nearly two hundred years ago, Lord Byron wrote these words:

*Roll on, thou deep and dark blue Ocean—roll!
Ten thousand fleets sweep over thee in vain;
Man marks the earth with ruin—his control
Stops with the shore.*

Ruin indeed. In the past four centuries, human conquest has extirpated some 750 animal species worldwide. The rate of extinction is between one hundred and two hundred times higher than in geologic times. Yet only now are we beginning to understand the consequences of our exploitation of the sea. “People can, in fact, ruin the sea as surely as they can ruin the land,” explains a group of international fisheries scientists. “The only difference is that ecological destruction in the ocean is harder to see, particularly when the damage is inflicted on the delicate and largely invisible web of marine life.”

Ed Ricketts, as we have read, was one of the first to understand this “invisible web” at work in the ocean. On their Gulf of California trip in 1940, he and Steinbeck came across a Japanese fishing fleet working the Mexican coast. There were six shrimp dredgers and a 10,000-ton factory ship anchored farther offshore. They went aboard one of the boats and were aghast at what they saw. The Japanese fishermen were scooping up everything in the ocean, scraping the seafloor clean. They threw the unwanted fish or “bycatch” overboard, keeping only the shrimp.

“We liked the people on this boat very much,” Steinbeck and Ricketts wrote in *Sea of Cortez*. “They were good men, but they were

caught in a large destructive machine, good men doing a bad thing. With their many and large boats, with their industry and efficiency, but most of all with their intense energy, these Japanese will obviously soon clean out the shrimps of the region. And it is not true that a species thus attacked comes back. The disturbed balance often gives a new species ascendancy and destroys forever the old relationship.”

The vicious cycle that Ricketts first identified in the sardine fishery, and also saw in the shrimp fishery, would eventually repeat itself in every ocean on earth. “In the good years,” Ricketts wrote of the sardine industry, “tons and tons of fish are being reduced, the canneries get larger, there are more of them, they spread out to the west coast of Vancouver Island, to the Oregon coast, to Ensenada, the fishing boats get larger and finer, there are more of them, they’re better equipped, and the fishermen themselves become more skillful. So finally an industry gets built up that not only can handle these bumper crops, but that has to have them in order to operate.”

In the decades after Ricketts’ death in 1948, massive industrial fleets of seine boats, factory ships and bottom trawlers would be built and plough the ocean, scouring it of life. World fish harvests would soar from twenty million tonnes in 1950 to more than ninety million in 2000.

Scientists are only now coming to realize that overexploitation of the world’s fisheries may, in fact, be changing the very structure of marine food webs in the ocean. Researchers are employing the same basic methodology that Ed Ricketts used in his seminal sardine study. They are combining decades of fishery and environmental data with models of marine food webs to understand the natural and man-made factors depleting global fisheries. It is exactly what Ricketts did, except their databases are far more comprehensive and they are using complex computer modeling to spew out their dire analysis.

An influential study, “Fishing Down Marine Food Webs,” published in the journal *Science* in 1998, showed that since 1950 global catches have shifted away from species high on the food web, such as tuna, swordfish and cod, to species lower on the food web, such as anchovies and shrimp. Another study of global catch data published in 2003 also found that the number of large, predatory fish species in the world’s oceans declined by 90

percent since 1950. “From giant blue marlin to mighty bluefin tuna and from tropical groupers to Antarctic cod, industrial fishing has scoured the global ocean,” said one of the study’s authors. “There is no blue frontier left.”

Yet the serial depletion of species went unnoticed until recently because catches stayed high as fleets fished down the food web and as aquaculture production—the so-called “blue revolution”—flooded fish markets from San Francisco to Tokyo. From 1996 to 2000 alone, marine aquaculture production jumped by 40 percent worldwide.

Having depleted the ocean, we are now trying to domesticate it by “farming” fish. The U.S. government is even proposing new legislation to privatize the ocean within the two-hundred-mile Exclusive Economic Zone by promoting fish farming in much the same way that pioneers settled the West. In the words of one newspaper reporter, who obtained a draft of the proposed legislation, “Look out at the boundless ocean, and envision a new Iowa—homesteaded by fish farm colonies . . . with row upon row of undersea cages roiling with swimming livestock.”

Today, the outer shores of the North Pacific represent a tragic microcosm of the world at large. In British Columbia, pristine inlets are being turned into the aquatic equivalent of industrial feedlots with thousands of fish crammed into tiny floating pens. The fish are particularly susceptible to disease and sea lice infestation, are fed pellets and dyes to color their flesh, and contain a level of toxic PCBs seven times higher than in wild salmon. Production from this type of industrial salmon farming soared from 15,500 tonnes in 1990 to 89,000 tonnes in 2002, while wild salmon catches plummeted.

What remains of the wild fisheries, including groundfish, black cod and halibut, among others, are being privatized. The fish in the ocean are being divvied up into individual quotas owned by corporations and so-called “arm chair” fishermen who trade and lease their quotas for profit. Tenant fishermen, not unlike the tenant farmers depicted in *The Grapes of Wrath*, often pay usurious “rents” equivalent to 70 percent of the revenue from their catches to the quota owners. Poorer rural and aboriginal fishermen have been pushed off the sea, as quota holdings are consolidated in the hands of a rich few. Of the 1,006 quota licences in B.C., for example, only thirteen are owned by people living on the outer

shores of Vancouver Island. A billionaire businessman, Jimmy Pattison, now owns more fishing licences than all these communities combined.

Coastal and aboriginal people are losing their connection to the sea. With declining populations, high unemployment and associated social problems such as suicide, alcoholism and domestic violence, coastal communities have now become expendable in the eyes of corporations and a royalty-hungry government pushing for industrial fish farms and petroleum exploration on the seafloor. This “wave of the future” has overwhelmed many. Most people feel helpless in the face of this economic tsunami promising billions in investment and thousands of jobs.

Are we slaves to a great industrial machine, or “monster” as Steinbeck called it, or are we a species living in mutual dependence with our natural environment? It seems we have failed to heed the one biological truth so evident in the various writings of Ricketts, Steinbeck and Campbell: humans, like other animals, live in communities. Our traditional knowledge, connection to place, dependence on clean air and water, and intergenerational bonds are part of a lifecycle that has allowed us to thrive in nature and persevere despite history’s travails. Destroy this organic entity or try to replace it with the harsh mathematics of a corporate ledger or sever a community’s connection to the land and sea, and you’ll ultimately destroy what makes us human. We will become the brutal machines we have created.

We are industrializing, domesticating and ultimately privatizing the ocean with the same folly with which we settled the Great Plains: preemption by pioneers turned native territory into private property. Trees were cut, minerals extracted and wilderness cleared for family farms, which were later consolidated by banks, agribusiness and food conglomerates infatuated with the efficiency of industrial feedlots, hormone-enhanced milk production and genetically modified crops. Steinbeck first lashed out against this system, foretelling today’s backlash by organic farmers and local farmers’ markets. “Men ate what they had not raised, had no connection with the bread,” Steinbeck wrote in *The Grapes of Wrath*, about our growing disconnection with nature and obsession with the machine. “The land bore under iron, and under iron gradually died; for it was not loved or hated, it had no prayers or curses.”

In the Gulf of California, Ricketts and Steinbeck saw the sea bear under the iron of industrial fishing with similar consequences. The waste and overexploitation of the sea was, they thought, “a true crime against nature and against . . . the eventual welfare of the whole human species.”

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IN the late 1990s, a strange phenomenon occurred on the Pacific Coast. After an absence of almost fifty years, sardines started reappearing in the waters off Vancouver Island and Monterey. “They’re most definitely back,” a biologist for the California Department of Fish and Game told the *Monterey County Herald*. “The population of sardines off the coast is well into the realm of a recovered fishery.” In 1999, the first new sardine boat in over half a century arrived at Moss Landing in Monterey Bay and a new cannery was built in Salinas. (Bylaws prohibit new canneries on Cannery Row.) And a small, pilot fishery with seven seine boats began fishing for sardines off Vancouver Island. Ed Ricketts had predicted that the sardine would bounce back—though he never imagined it would take half a century.

With the return of the sardine comes a time for reflection. That silvery little fish has become synonymous with Steinbeck’s famous novel, which scientists even quote occasionally and perfunctorily in their research. With the exception of *Between Pacific Tides*, citations of Ricketts’ pioneering ecological research are few and far between since he was never published in scholarly journals. In an odd twist of fate, there is more of Ed Ricketts in John Steinbeck’s canon than probably all the scientific journals of the twentieth century. A man who dedicated his life to gathering facts about the natural world has become, himself, a fiction.

Yet whether you hear his voice directly—in *Between Pacific Tides*, *Sea of Cortez*, or even this book—or whether you hear it echo in a Steinbeck novel or in bits of Joseph Campbell’s mythological musings, you’ll realize that Ed Ricketts was a man before his time. Or perhaps, as Steinbeck said, Ricketts simply had “a timeless mind, not modern and not ancient.” His ideas seem as contemporary today as when he first wrote

them half a century ago. His ecological approach and ethic, and especially his warnings about the excesses of humanity's material pursuit and technological mania, have become more relevant than ever to a generation now waking to full environmental consciousness. Ed Ricketts, it seems, is bouncing back with the sardines.