Voices of Tebenkof Bay

What Will Our Legacies Be?

Wssshh. Wssshh. Small waves lapped on the stony beach.

The fluty song of a Swainson's thrush sounded from the forest and ended with its signature upward cascade of notes.

A bald eagle called to another, its voice like a giant squeaky door hinge opening wide in the sky of wilderness.

We were alone. I stood on the beach of Long Island in Tebenkof Bay Wilderness. The De Havilland Beaver floatplane was gone and its thrum faded away in the sky, its track on the water melted into the waves. The three of us were on our own for the next eight days in this remote wilderness, on southeast Alaska's Kuiu (pronounced "Q-U") Island and surrounding smaller islands.

One of us knew what to do. Karisa Garner, lead wilderness ranger for Petersburg Ranger District, quietly gave directions to her assistant ranger, Vince Stowell, and me, a volunteer. We carried the dry bags above the high tide line and set up our tents under the shelter of gnarled Sitka spruces. We had big duffels with Klepper and Folbot folding kayaks inside, bear pepper spray, life jackets, heavy-duty rain gear, and tents, food bags, and personal gear. Carrying the gear up the beach, it seemed like an immense pile of stuff, yet at the same time it seemed little enough to keep us afloat, self-sufficient, and comfortable for eight days.

Kuiu Island has a dense population of black bears, about three to five bears per square mile, and also a thriving population of wolves. So Karisa had planned for us to camp on smaller islands where bears and wolves were less likely to be present. Tebenkof Bay, on Kuiu's west side, is about thirteen miles long, eight miles wide, and dotted with islands. We would kayak from island to island, making a circuit around the large bay. Our tasks were to monitor use of the wilderness, check known campsites for use, pull invasive plants, and pick up any litter found.

Southeast Alaska was having an unusual dry spell—going on three weeks without rain, unusual for this temperate rainforest—and we arrived on a sunny day. The saltwater in the bay was the most beautiful, deep, sapphire-blue possible. Because of the dry spell, the seep Karisa had counted on for water was dry. But she had brought plenty of water for a day or two, and knew about another water source over on Kuiu.

We had plenty of tasks. First we assembled the frameworks for our kayaks, pulled the canvas skins taut over the frameworks, and clipped in rudders and cockpit frames. For our first night's dinner, we had brought along fresh-caught Alaskan black cod from the Petersburg fish market.

Washing dishes was simple. Still wearing our pull-on rubber boots, or "Alaska sneakers," we each waded into the saltwater and scrubbed our plate with a handful of sand and pebbles. Done. Food packaging went back in the food bags, to be packed out. After chocolate bars for dessert, Vince and I helped Karisa as she rigged pulleys and line, and hung our food bags from the limb of a Sitka spruce well away from our camp, in case any bears had wandered over to this island. I liked Karisa's quiet competence. The best wilderness trip was one where no emergencies ever arose.

Am I up to this trip? I used to fight forest fires and go backpacking, but in my fifties I've been more inclined to soft adventures. I haven't done wilderness camping in years. I'm middle-aged and overweight. Am I too old for wilderness?

After dinner, alone in my tent, I wrote my anxieties in my journal. I got myself into this trip by accepting a writer residency with Alaska's Voices of the Wilderness program, which gives artists and writers the chance to accompany National Park Service and Forest Service wilderness rangers in their summer work.

I loved wild places, and I'd visited many in the western United States, in my Forest Service career as a helicopter rappeller, fire crew leader, and science writer. I had made plenty of backpacking trips recreationally. Gradually, though, as my husband, Gene, and I got middle-aged, we had eased into traveling with a pop-up camper, making day hikes, and returning to a campground at night.

But I wasn't ready yet to say I was too old for true wilderness adventure, and this kayak trip was a way to push myself into getting back out in the wilderness. The trip also gave me a chance for a trip in Alaskan wilderness, more remote than wildernesses in the lower forty-eight states. I also had the hubris to think that I might bring back something of value to others, insights and thoughts worth sharing.

As a science writer, I was well aware that climate change is affecting our world, including wild places. The 1964 Wilderness Act's phrase "where the earth and its community of life are untrammeled by man" rang with irony as we approached the law's fiftieth anniversary. Scientists were finding plenty of evidence on how climate change was already affecting southeast Alaska. Glaciers had been shrinking for a century, Alaska yellow-cedar had been migrating northward and upward for decades, and forest pests like bark beetles and dwarf mistletoe were moving north into forests not adapted to resisting them.

I was ten years older than the Wilderness Act, and I thought the way I handled my fiftieth birthday would work equally well for the upcoming fiftieth anniversary of the Wilderness Act. I didn't congratulate myself for what I had done so far. Instead I asked myself what I wanted to do next, what adventures I aspired to, and how I could help my family and my community. I wanted to honor the Wilderness Act's fiftieth birthday by asking: What do we want our legacy to be in fifty years, for wilderness values?

Getting to Petersburg, a small town on a southeast Alaska island where I met my Forest Service hosts, took almost two weeks, and I felt queasy the entire time about my looming kayak expedition. My husband, Gene, and I made the thousand-mile road trip from our home in rural Oregon to Prince Rupert in British Columbia, camping along the way. Then we took the Alaskan ferry, all day, all night, and part of the next day, to Petersburg. I had plenty of time to imagine what could happen. I was too out-of-shape, I didn't have enough kayaking skills, I would lose my diabetes meds.

Once in Petersburg, my jitters quieted down. I met the people I was going with, got safety training and orientation, and started to feel more confident.

My husband, meanwhile, was helping his oldest daughter, who lived in Petersburg, get ready for crabbing season. He had promised to be her deckhand through the critical first weeks of the season, as all the crabbers rushed to get their pots out and haul in the first, biggest catches.

On the opening day of crab season, I promised Gene that I would be fine on my own as he and his daughter worked long hours and stayed out overnight on the boat. A few minutes after they left the harbor, a town dog attacked my dog as I walked him on a leash. An hour after I made my promise to Gene, I was in the emergency room in shock, my left hand lacerated and swelling. My dog was in the car with blood running down his face, waiting for me to be stitched up and take him to a vet.

I left the emergency room with my entire left hand swollen like a baseball—and I'm left-handed. I had stitched-and-glued lacerations on the palm and back of my hand, and I couldn't begin to close my hand in a fist. How would I grasp a kayak paddle in three days? My fragile confidence was shaken.

I reminded myself that the wilderness was all about grit. I used to be tough; I just needed to rediscover it. My dog turned out to be fine, with the bite under his eye not serious. The next day, I bought a protective glove from Petersburg's only drugstore to keep my lacerations clean. On Monday, when I met Karisa and Vince to pack our gear, I made light of my injury.

Tuesday we flew out to the wilderness, and here I was, on my first night. Holding the pen in my swollen left hand to write was painful, and my notes were brief. I took painkillers for the night and wrapped myself in my sleeping bag. This far north and close to summer solstice, darkness wouldn't come until after eleven o'clock, but I had no trouble falling asleep by ten.

Sea otters with whiskered faces looked like wizened sea sprites. Scattered in small groups all along the channel, dozens watched us paddle by. Their signature look was floating on their backs, with their head and two webbed hind feet poking out of the water.

Bald eagles perched on snags or coasted over the bay, fishing. The huge birds with gleaming white heads were magnificent, but we saw so many we stopped pointing them out to each other.

Ravens didn't seem to have much to do but hang out on tree branches, loudly calling, "Rawkk! Rrawwkk!" They seemed to always have a few scraggly feathers sticking out of their plumage.

A black bear turned over stones, foraging on a beach.

Sitka blacktailed deer lifted their heads to look at us and went back to browsing. For deer, danger never comes from the water, and we were no threat.

Tracks of moose and wolf crossed the mud flats at the mouth of the stream on Kuiu where we stopped for water.

Coho salmon fry swam in a small pool in the freshwater stream.

A river otter, a mink, and a merganser family went about their fishing at different spots along the island shore. A family of woodpecker chicks called loudly from a hole in a snag. Swainson's thrushes and songbirds I didn't know sang from the forest.

Lion's mane jellyfish, with tawny red and tangled tentacles, and beautiful silvery-white moon jellyfish floated in the saltwater. Starfish clung to every underwater rock face.

That was our list of wildlife sightings the next day, as we kayaked around the north end of Long Island and down the channel between it and Kuiu. Karisa led us to a stream on Kuiu that had flowing water, and we pumped water through filters to replenish our supply. At the channel's southern end we walked the tidal flats, and then we paddled back to our camp.

One meaning of "wilderness" is abundance, meaning abundance of everything but people. Abundance is about wildlife, plants, even insects and mushrooms, all the incredible exuberance and life forms of an intricate ecosystem.

From the ecologist's perspective, wilderness areas are designated to protect "ecological wholeness," not for landscape beauty or recreation. That's why the system of wilderness areas across the United States needs to include more than rock, ice, and mountain peaks. Wilderness was never meant to be just the areas that aren't commercially valuable for timber or minerals.

Tebenkof Bay Wilderness includes entire watersheds, from saltwater to peaks, and it is also part of a larger wilderness complex that sprawls across the waistline of southeast Alaska. The complex includes Kuiu Island Wilderness, and across Chatham Strait to the west, South Baranof Wilderness. Legally, wilderness does not include saltwater, and boats do travel through these saltwaters, especially Chatham Strait. However, with legal protection for marine mammals in these U.S. waters and no towns near the wildernesses, the saltwater is practically a marine wilderness, where sea otters, seals, and humpback whales are all flourishing.

Ecological wholeness means having the full range of original predators, something only a few wildernesses in the lower forty-eight states have. Even when ecosystems have all their original predators and large mammals, they rarely have these animals at their original abundance. The reality might be that the bear population on Kuiu Island is normal, not unusually dense, and bear populations are low on islands without wilderness.

Wholeness means having the full range of plants native to this ecosystem, and it means letting the abundance stand. In this southeast Alaska temperate rainforest, that means not logging the forest of Sitka spruce and western hemlock.

To be fully wild, an ecosystem has to exist at a large enough scale that all ecological functions can occur. Predators and prey move in their ancient dance, wildlife moves and migrates, and the ecosystem changes, adapts, and even evolves over time.

In southeast Alaska, the land is still rebounding from the recession of ice sheets at the end of the last ice age, something like a mattress slowly decompressing after a person gets out of bed. Isostatic rebound, as it's called, has a complex relation with changes in sea level, which rose as the giant ice sheets receded. Over the past ten thousand years, both shorelines and forests have changed in southeast Alaska.

Historically fire was not a part of Alaska's rainforest, but windstorms, landslides, and avalanches were. These disturbances, along with perched water tables and geological factors, meant that in southeast Alaska, the rainforest never was continuous. Flying to Tebenkof Bay, I had seen patches and bands of lighter green in the dark green forest. The patches were mostly muskeg, a mix of peat bogs, ponds, and hummocks with stunted

trees; the bands were Sitka alder and brush growing on landslide and avalanche tracks. What I saw was a snapshot at one moment in time of a mosaic that was always changing.

This wilderness was offering a stronghold for all manner of wildlife. Some animals that had been nearly extinct at one time, such as the sea otters and humpback whales, had rebounded, once they got legal protection from hunting.

The three of us paddled back to camp in late afternoon after an idyllic wilderness day with lots of wildlife sightings. We saw no other people, no camps, no recent use of campsites, and no boats, so we had the solitude that people seek in wilderness.

Wildlife was thriving in Tebenkof Bay Wilderness. Does it matter if nobody is out there, if no human voices are in the wilderness?

Wilderness gives us "the chance to see ourselves single, separate, vertical, and individual in the world, part of the environment of trees and rocks and soil, brother to the other animals, part of the natural world and competent to belong in it." – Wallace Stegner, in "Wilderness Letter."

"I learned early that the richness of life is found in adventure. Adventure calls on all the faculties of mind and spirit. It develops self-reliance and independence." – William O. Douglas, in "Of Men and Mountains."

"Get into the wild!" – Great Old Broads for Wilderness, an organization that uses the voices and activism of elders to preserve and protect wilderness and wild lands.

In the evening, back at camp, I learned from Karisa that fewer than fifty people a year visit this wilderness gem. Fifteen of those were young people on a National Outdoor Leadership School (NOLS) trip that stayed only one or two nights. Even fewer visit the adjoining Kuiu Wilderness.

I was stunned. "But I read that about 1.6 million people a year visit southeast Alaska."

Karisa shrugged. She had a friend who is a guide, she said. He used to offer multi-day guided kayak trips into Tebenkof Bay, but he wasn't getting demand for them. People wanted day trips, so they could be back for dinner and to check their e-mail.

I was having the best solitude and best wildlife sightings of any wilderness trip I had ever made, but I started to worry. Are our young people losing their sense of adventure?

Before the Wilderness Act was passed in 1964, the wild places left on public lands outside national parks were places where we hadn't gotten around to building roads, logging, or mining yet. "Ecological wholeness" wasn't an argument that moved very many people in the early 1960s, so wilderness supporters focused on other arguments.

Many arguments for wilderness were about how it built character, arguing that the challenges of finding routes, hiking mountains, getting water, and even avoiding predators strengthened a man's or woman's backbone and taught self-reliance. Rugged Americans seasoned by wilderness adventures would be capable of winning the Cold War and going to the moon. Wallace Stegner wrote that wilderness " has no more to do with recreation than churches have to do with recreation."

I was less rugged than the prototype 1960s outdoorsmen, but wilderness had been important in my life. As a young woman, I went on backpacking trips. I set myself challenges at the upper end of what I thought I could do, churned inwardly with anxiety each time, and then glowed in the euphoria of adrenaline and success when I met my self-set challenges. That was the only way I knew how to live, and that was how I got to work

on a fire crew, be a helicopter rappeller, run rivers, even how I found the courage to fall in love and marry.

My idea of how wilderness shapes character is that wilderness requires developing a number of habits, skills, and disciplines, everything from hanging food bags, finding and filtering water, kayaking safely, and persevering when tired or sore or annoyed by mosquitoes. These practices lead to a difficult and rewarding mental and spiritual development that writer Gary Snyder calls the "practice of the wild." Snyder writes, "The lessons we learn from the wild become the etiquette of freedom," also tying wilderness to character, but in a more Zen-like way than Stegner.

What Snyder and Stegner don't mention is the distinction between wilderness and the wildling state often confused with it. Wildlings—people or animals who are reckless, uncontrolled, feral, undisciplined—don't last long in true wilderness. Those who live in the wild can't afford that carelessness.

Wilderness experiences lead to stories. At their best, these stories are deeply felt and deeply lived, shaping people's values and their listeners' values. I think people's wilderness stories—not the trumped-up false dramas of cinema, but authentic wilderness experiences—shape positive values. But if young people have little interest in wilderness, they may be missing both the fun of being out here and the chance to be schooled in the practice of the wild.

While I was in my tent reflecting on people's absence from this place, Karisa and Vince walked down the stony beach and found a murder mystery. The skinned carcass of a sea otter was tied to a driftwood log. Native Alaskans are allowed to take a small number of sea otters, but otherwise this animal was poached. The sea otter carcass was grisly evidence of both human skill—it was roped to the log with a perfectly tied bowline knot, a seaman's knot, and skillfully skinned without knife nicks into the carcass—and evidence of human excess—still hunting sea otters. At the end of the day, we had signs, finally, of a recent human visit to this place, and that evidence showed a complicated human relationship with wilderness.

We didn't call this place wilderness. We called it home.

Toward the sunrise were glaciers and mountain peaks that couldn't be crossed. Toward the sunset was the vast ocean that lifted and sighed in giant swells.

Between glaciers and ocean we lived in a narrow band of interwoven islands and waters. Cedar and salmon, seal and halibut, bone and huckleberry: our lives were interwoven with the forest and sea, like a seamless blanket of intricate design.

Our society was built on abundance and giving. We acquired status by what we gave away to others. We used the abundance of life around us as the pattern for our arts. Our carvings, blankets, and totem poles were filled with bears, wolves, whales, beavers, ravens, eagles, salmon—all the richness of life we saw around us every day.

The Tlingit tribe lived in the Tebenkof and Kuiu area for at least the last five thousand years. They had a village on Long Island in the not-so-distant past, and in fact the flat bench of land behind our Long Island campsite was an old shell midden, overgrown by moss, devil's club, and Sitka alder.

European diseases like smallpox and measles decimated the Tlingit nation. These bacteria turned out to be more terrifying and destructive than the demon-spirits that the

Tlingit artists represented in fearsome wooden masks and costumes. Disease shredded their seamless blanket of culture and rainforest and emptied villages.

When we broke camp and left Long Island, we paddled west to a very small island, less than half an acre, that had an old Tlingit totem pole on it. Karisa had permission for us to stop there. She told us that the totem pole probably marked a burial site.

The Tlingits buried their dead on small islands, Karisa explained, and an epidemic in the 1930s killed many Tlingit children. Small rectangles of sunken ground near the totem pole were probably graves. The totem pole itself was leaning against a spruce branch, and so much wood had decayed and fallen off that only a nose and eye were still distinguishable at the pole's top. If other kayakers happened to stop at the island, they would be unlikely to push through the thick screen of devil's club and find the hidden totem pole, so the site would remain private, as the Tlingits desired.

We quietly walked away from these remains of the Tlingit people who called this place home, not wilderness. Hundreds of people lived in this area once, fishing, laughing, eating, carrying on with life. Even in the 1950s and 1960s, the Tlingits had a summer fishing village in Tebenkof Bay. Some Norwegian fishing families from Petersburg also spent summers in the Kuiu Island area fishing, and they visited with the Tlingits at times.

In the twenty-first century, the Tlingits were gone from the wilderness, except for the occasional fishing or hunting trip. They had some villages on other islands in southeast Alaska and were mixed in the populations of other Alaskan towns. Tlingit voices are missing from the wilderness, with the evidence of their lives here so subtle and so hidden that today's few visitors are unlikely to recognize the signs.

Forget gold. Don't go to the Yukon. Most men die or go crazy. A man can get rich in Alaska through fur farming.

Fur farming is the ideal type of farming for Alaska, just as wheat and corn are ideal for the Midwest and oranges for Florida. Fur prices are strong, and they're bound to keep rising. People will always demand furs. It's not a boom and bust industry.

In January 1920, Joe and Muz Ibach sold 140 blue fox pelts for $17,000—a fortune in 1920. The news spread all up and down the Alaska coastline. We had just won the War to End All Wars. Getting rich on America's Last Frontier was possible for any man willing to show up and work hard.

Josephine Sather wrote about her life as an island fox farmer, "I was so awestruck with the splendor lying on all sides of me that I simply stood there dumb. … I was free of the monotonous ties of routine and responsibility, and my heart was full of enthusiasm."

We never anticipated something as big and deep as the Great Depression. Dozens, even hundreds, of fur farmers pelted all their animals and abandoned their farms. The surviving farmers thought they'd dominate the market when fur demand came back. Then came World War II.

After the war, fashion changed and synthetic fleece began to replace fur. The fur business went bust.

We paddled our kayaks to the bay's outer edges and made camp on Shell Island. Often the rangers pitch their tents on the upper beaches, but we were near a full moon, Karisa said, which meant tonight's high tide would be exceptionally high, coming all the way up the beach into the dunegrass. Just above the upper tide line on this beach, and on most islands in the bay, there was a zone of dense salmonberry, dunegrass, cow parsnip, and

other plants, difficult to walk through and impossible for camping. Shoreline Sitka spruces had long drooping branches with stiff, prickly needles hanging over the salmonberry.

We found a couple openings between spruce branches and pushed through the salmonberry to a bench of flat ground inside the forest. The flat ground was actually another shell midden, old enough that Sitka spruces four to six feet in diameter were growing on it. We carried our dry bags up from the beach and set up our tents.

Remnants of an abandoned fur farm were scattered in the forest. Crumpled wads of fencing wire, the remains of holding pens for the animals, lay in several places, overgrown by moss. Removing the debris would tear up the shell midden, an archaeological site, and we couldn't take out the bulky debris in our kayaks anyway, so we left it in place.

In the early twentieth century the Forest Service had a vigorous program to encourage fur farms on the Tongass National Forest, and by 1924, southeast Alaska had more than two hundred fur farms. Most were fox farms, either for blue fox, a dark-colored variant of arctic fox, or for silver fox, a variant of the common red fox. Thousands of fox pelts were shipped from these farms. Alaska paid bounties for eagles back then because eagles might take an occasional fox kit, and thousands of bald eagles were shot in southeast Alaska alone.

Fur farms were located on islands smaller than 2,500 acres. Fur farmers mostly let the animals roam free, penned only by the ocean, and used feeding stations. Permits were issued without consideration of the tribes' traditional uses of these islands. White fur farmers closed their island-farms to everyone else, excluding the tribes from traditional fishing spots, gardens, and berry patches; burning down cabins and fish smokehouses the Native Alaskans had used seasonally; and building their own houses and sheds. No surprise then, that the Native Alaskans grew hostile to both fur farmers and Forest Service.

The fur farmers were actually fond of their foxes. They wanted the foxes to be healthy and in top condition … right up until the moment they killed them, for their pelts.

Fur farms disappeared before Tebenkof Bay was designated wilderness. Demand for furs dropped during the Great Depression, and World War II pulled people away to be soldiers and work in war industries. After the war, synthetic fabrics and fleeces began to replace furs for cold-weather clothing. The clincher, of course, was that society's attitudes changed. Wearing furs went from high fashion to being scathingly criticized. Now, to many people such as myself, wearing furs seems unethical.

The island fur farms turned into financial failures, and the Forest Service no longer issued new permits. As the fur farm era ended, B. Frank Heintzelman, the Forest Service's regional forester for Alaska, wrote a letter turning down a request for a fur farm permit: "It is definitely not in the public interest to encourage occupancy of these isolated islands by families with children … Infrequent human contacts are likely to be detrimental to the permittee and his family. Lack of such community facilities, services and contacts has led to appalling backwardness of the people in certain isolated sections of the United States [which] all who have considered Alaska's future are agreed [we] should seek to avoid."

I stood in the shadows of the Sitka spruce forest. A deep layer of moss soaked up sound and the lap of waves on the beach seemed distant. Even my clumsy steps in my

rubber boots made little sound. I cradled my swollen left hand, still aching from the dog-bite lacerations, with my right hand.

I felt the presence of silenced voices beneath my feet and all around me: the ancient shell midden accumulated from thousands of years of Tlingits harvesting shellfish, the absence of the now-displaced Tlingits, the isolated fur-farm family struggling to make a living on a remote island, the foxes valued only for their pelts. Alaskan wilderness was not a place without human history. In this rainforest, the signs and legacies of that history were being quickly overgrown and were mostly unnoticed by the few visitors.

A humpback whale simply surfacing and exhaling is awesome. The breath of a forty-ton whale can be heard half a mile away:

Chufff…hufff…whhufff.

The sound of whale blow has a distinctive quality, like air suddenly squeezed out of a sixty-foot-long inner tube.

Crack! A humpback slaps its long pectoral fin on the water, and the sound is as sharp and loud as a rifle shot.

Humpbacks are showy, dramatic whales. They breach frequently, launching their huge bodies into the air and crashing down. They slap their pectoral fins and tail flukes on the water. They corral schools of herring with bubble-nets, then explode upward through the herring with their jaws open.

These are the whales famous for their haunting underwater songs, but they sing mostly in Hawaiian waters, where they spend the winter mating and calving. In southeast Alaska, they are feeding on krill, plankton, and herring in the cold, productive waters.

On the next day, which happened to be the summer solstice, we were just starting breakfast when three humpbacks surfaced and exhaled right across the channel from us. I watched them swimming back and forth, periodically exhaling, as I ate oatmeal and sipped green tea.

We kayaked to several other islands in our circuit that day, and the humpbacks seemed to be near us all day long. At one point, a group of humpbacks put on a fantastic display of breaching, and the three of us stopped paddling and just watched.

One whale leaped completely clear of the water and hit the water with a giant, resounding splash. A second whale breached—a third one—and then another one.

I was in awe of the power it takes to lift those giant bodies out of the water. The whales then twist in the air, and somehow are able to withstand the impact of that world's biggest belly flop as their bodies hit the water.

The whales put on an incredible display for twenty magical minutes, breaching and slapping their pectoral fins and tail flukes on the water. At last they moved off, and we continued paddling.

In 1966, when whaling was banned, the North Pacific humpback population was estimated at fewer than 1,400 whales. Female humpbacks breed usually once every two years, with pregnancy lasting eleven months and nursing calves for up to ten months, so whale populations can recover only slowly. The current North Pacific humpback whale population is estimated at about 20,000 whales.

People made a conscious decision to abstain from whaling, and even with some countries not complying, people changed a trajectory whose outcome at mid-twentieth century seemed to be inescapable extinction. Instead, through policies of restraint,

humpback whales survived and were slowly increasing their numbers. Whale recovery, I reflected, had none of the interventions we attempt with salmon and condors—the idea of whale hatcheries or captive breeding would seem ridiculous—but simple restraint, or not-doing, gave the whales space to do what only they know how to do, reproduce more humpback whales.

Late afternoon, we had light rain on our paddle back to camp. But I hardly noticed it because we saw whales, and they breached again and again.

Back at camp, Karisa cooked dinner under the shelter of a western hemlock's branches that kept the rain off our cookstove. Vince and I filtered water from a trickle below the large root of a Sitka spruce overhanging a small stream channel. Our filtered water tasted fine and none of us had any trouble with it, but it was always the color of weak tea.

As we all talked under the western hemlock, a big river otter walked out from the brush. Like a proud, grumpy grandpa woken up by noisy family, he plodded in a dignified way down the beach and into the water. He was only about thirty feet from us, and not the least bit hurried by us being there.

Karisa, Vince, and I lifted our mugs of filtered water and toasted to the best summer solstice ever.

A straggly rose bush was overgrown by native salmonberries.

Foxgloves with speckled lavender throats grew near a green shed that looked likely to collapse soon.

Fishing floats hung inside the shed.

Charred timbers stood in the rubble of a small house that had burned down.

A large wooden tub held a pair of rusty tongs big enough to pick up crabs or fish.

The charred and rusted metal frame of a foot-treadle sewing machine remained near the burned house.

The next day, we broke camp and paddled to an island with a small homestead that had been grandfathered into the wilderness area under the Alaska National Interest Lands Conservation Act (ANILCA) passed in 1980. A few homesteads were scattered through the new wilderness areas established under the law. Rather than eject the homesteaders immediately, ANILCA let the owners continue to live there and transfer property title twice, before title and land would revert back to the Forest Service. It was a compromise made in order to get large new wilderness areas in Alaska.

In the quiet channel approaching the island, I saw dozens of small moon jellyfish, from one to four inches in diameter. Moon jellies are exquisitely beautiful, with transparent, umbrella-shaped bells with white fringe. Perhaps they are lucky in love, as they have four gonads in the shape of a four-leaf clover, outlined in white at the center of their bell.

When Karisa pulled her kayak up on the beach, she found a message inside a bottle with a Mazzetti Balsamic Vinegar label. Inside were two sheets of paper. Although the paper had gotten slightly wet and the colors ran, we could see that one sheet had a drawing of a rainbow, and the other sheet a drawing of a heart. We were delighted. "This is definitely not litter," Vince said.

On these remote homesteads, families that weren't fur farming were usually fishing for a living. Before two-way radios and Coast Guard helicopters, fishing these waters was a hazardous occupation. Back in Petersburg, the fishermen's memorial by the Sons of

Norway hall had plaques with the names and dates of people lost at sea. Since fishing is often a family enterprise, some plaques have the names of brothers, or a father and son, a husband and wife, a father and daughter. Usually some wreckage from the boat is found, but not always.

At this homestead the main house had burned down, apparently a few years ago, as plants were growing in the charred rubble. Still standing were a small cabin, an outhouse, and a shed full of fishing equipment—reminders of the voices of people living a subsistence lifestyle.

The law says these homesteads don't belong in wilderness areas, because wilderness should be a place where people leave no traces. But would not the people of these homesteads be living the adventurous life that William O. Douglas praises? Wouldn't they be tested and have their characters tempered by a challenging way of life? Would they not have an intimate knowledge of this wild place that many of us would envy?

We were there to pull invasive plants, legacies of the homestead. The scattered pockets of invasive plants in Tebenkof Bay Wilderness, Karisa had explained, were mostly found at the sites of former fur farms or homesteads. Already on our trip, we had pulled white clover, strawberries, and dandelions at old fur-farm sites—plants brought in by the fur-farm family, and now considered invasive in the wilderness.

My tent fly was wet from rain during the night and my sleeping bag damp from condensation inside my tent, so I spread them out to dry. I knew I was lucky the rain had stopped and we had a sunny, breezy afternoon. More typical weather for the area would have been more rainy days and fewer sunny days than we were having on this trip.

We spent the afternoon pulling foxgloves, mint, white clover, and dandelions. Later we burned our big heap of plants on the beach, so the next high tide would wash away any traces of our peppermint-scented campfire. We made only a dent in the invasive plants, but Karisa had a group of volunteers coming later in the summer to clear more of the area.

As had become usual on the trip, I retired to my tent in the evening to write journal notes and fall asleep early, tired from the day. Karisa and Vince, both considerably younger than me, stayed up later talking but still managed to be up earlier than me, lowering the food bags and heating water for breakfast.

Sitka spruce, western hemlock, Alaska yellow-cedar, Sitka alder, and black cottonwoods.

Huckleberries—Alaskan blueberry, oval-leaved blueberry, and red huckleberry. Red elderberry and salmonberry. Black currant and willow.

Devil's club and skunk cabbage.

Ladyfern, sword fern, deer fern, oak fern, and maidenhair fern. Mosses, lichens, and mushrooms.

Western coralroot, pinesap, and northern groundcone: flowering plants without chlorophyll that feed on the forest's deep layers of rotting wood.

Columbine, vetch, false lily-of-the-valley, silverweed, bunchberry, yarrow, northern rice root, and dozens of other wildflowers. Native grasses and cow parsnip. Beach asparagus.

In the saltwater, algae has its "meadows" and "forests." In the tidal zone, popweed covers rocks and beaches, its small bladders of air popping underfoot when we walked

across any beach. Bull kelp, the old growth of the saltwater, anchors itself on the sea floor and grows up to sixty feet long, with a round float on the water's surface and a topknot of waving blades that form the canopy of the saltwater.

In this southeast Alaskan rainforest, plants grew like they were on steroids. Skunk cabbage leaves were four feet tall, their rosettes of giant leaves growing directly from the ground. They grew in all the little seeps that dimpled the forest. Devil's club, a sprawling shrub with nasty spines, was often taller than me. One red elderberry shrub I saw was almost as big as an apple tree.

The forest was dominated by Sitka spruce, often three to six feet in diameter and very wolfy (lots of branches), but only a hundred or so feet tall. Sitka alder grew along forest edges and anywhere an opening gave it enough sunlight to take root. The tangled greenery of the forest was lobed, toothed, and serrated into leaves, needles, fronds, and stems. Shades of green—dark, yellowish, olive, sage, bright, blue-green, gray-green—and distinctive shapes—double-serrated leaves of Sitka alder, twice-pinnate feathery ladyferns, heart-shaped false lily-of-the-valley leaves, and dozens more—let me distinguish patterns and plant species.

Good thing it was a rainforest and perpetually damp, or the fireworks on the ground would have set it all ablaze: the red bursts of five-spurred columbines, pink swept-back shooting stars, sunny buttercups, deep blue harebells, purple vetch, black-lily blossoms of northern rice root, purplish reds of coralroot, and star-burst whites of yarrow and bunchberry.

The forest had lots of windfall trees, often jackstrawed on top of each other, and rocks, boggy ground, thickets of devil's club, and steep slopes, and walking through them was generally difficult. Just inside the forest's edge from the shore, however, an animal trail about the width of a black bear usually followed the island's shore. That trail or the beach itself, if the tide was out, was usually the easiest way to get around.

Tides were the steady metronome of our days. Tides rose and fell, a little more than six hours apart, the moon's pull on the ocean causing two high tides and two low tides every day. At low tide, sea-smoothed pebbles, fragments of clam and crab shells, and scattered pieces of animal bones were exposed. At high tide, everything on the beach was shuffled, floated, or scattered.

The next day, our campfire ashes washed away by high tide, we turned north and began our return loop, paddling up the bay's outer edge. We were lucky, again, to have a sunny day.

In the quiet, as we paddled, we could hear bald eagles calling. We even heard a sea otter pup whining and nagging at its mother—until she pushed its head underwater for a silencing dunk.

One gray-faced sea otter balanced itself upright in the water and watched me intently from about thirty feet away. I realized how clumsy and poorly adapted to the water I was. I needed a kayak and paddle, rubber boots, synthetic clothing, life jacket, and spray skirt, to do what the sea otter did naturally with just its beautiful, dense, fur coat and hind feet shaped for swimming. The sea otter, moreover, could dive deep in these waters and easily catch its own food down there, something I couldn't do at all.

Humpback whales breached out in front of us. Once, twice, again and again, a dozen times. They slapped their pectoral fins on the water and smacked their tail flukes. I had

no idea if the whales were having a fishing frenzy or acting out of sheer exhilaration. I knew it was magical to watch.

The warm days were making my trip a lot pleasanter than it might have been. Although a few 80 °F days in southeast Alaska don't by themselves indicate climate change, long-term weather data show that the average temperatures in southeast Alaska have been rising for the past fifty years, and have increased almost 3½ °F. Winter temperatures are rising faster than summer temperatures, which makes a big difference for spring bud break, species migrations, and insect hatches.

Warmer doesn't always mean dryer. In fact, despite the dry spell during my kayak trip, weather records show that both summer rain and winter precipitation have been increasing in southeast Alaska. Even so, glaciers have been getting smaller, because with rising temperatures, more of the precipitation falls as rain instead of snow.

Melting glaciers and ice caps worldwide should cause sea levels to rise. But in southeast Alaska, the land is still rebounding from the recession of the ice sheets when the last ice age ended. It's unknown exactly how sea level rise and isostatic rebound might offset each other.

Scientists are only beginning to understand how climate change affects the wild ecosystems of southeast Alaska. Trees are at a disadvantage for adapting to climate change because trees can't move like animals can. Trees that live for 500 to 800 years, as many an old-growth conifer does, have already survived some climate variations such as the El Niño-Southern Oscillation and Pacific Decadal Oscillation, but they may not be able to survive the amount and speed of climate change that is coming.

Only in the last six years have scientists pieced together enough data regionally to figure out that one tree species, Alaska yellow-cedar, has been migrating upward and northward for the past hundred years. Mature yellow-cedar are dying at lower elevations, especially in the southern part of its range and on south slopes, and young yellow-cedar are growing at higher elevations and farther north than they did a century ago. What seemed at first to be local patches of dying trees turned out to be part of a regional pattern that is best explained by changing climate.

Total live-tree biomass in the southeast Alaskan rainforest is increasing, although some individual species such as shore pine are showing a decline. But the same climate change that's causing trees to grow more is also allowing the northward migration of dwarf mistletoe, bark beetles, and possibly other forest pests.

Wilderness is supposed to offer refugia for wild ecosystems, areas protected from civilization's impacts where wildlife and wild plants can flourish. Southeast Alaska's incredible array of wilderness areas would seem to be large enough to protect all the wildness in its forests and waters, from masked shrew to humpback whale. But climate change crosses boundaries, and lines on maps are no barrier to the rising heat.

The climate change so far is setting ecosystems on new trajectories that we haven't seen before. We thought that forests changed as slowly as the mountains, over long geological eras. We were wrong. Scientists don't know which tree species will replace yellow-cedar where it drops out, or how other tree species such as Sitka spruce will shift their range. We don't know what changes in forest trees will mean for birds, amphibians, mammals small and large. Both people and wildernesses are on pathways they haven't traveled before, leading somewhere unknown.

Plastic litter we collected during our kayak trip, and took out with us:
Five-gallon plastic bucket.
Orange fishing float.
Doritos bag, with its text printed in Spanish.
Gallon milk jug.
Various plastic water bottles.
What I found in the forest on the trip's last day, and left where I found it:
Partial skeleton of a fairly large bird, possibly an eagle, including big talons.
Moss spattered with bird whitewash at the base of a large tree—probably an unseen nest somewhere in the branches.
Small animal skull with four little incisors in its upper jaw—sharp teeth, but not enough to defend itself from the raptor that caught it.

After a night on Clamshell Island, we paddled to our final campsite, a long spit jutting out of Kuiu Island at Happy Cove. On our two-way radio, the marine weather forecast predicted eighty to eighty-five degrees, which would be record highs for the day in most parts of southeast Alaska. The forecast continued with a detailed warning about how to avoid heat exhaustion and sunstroke. I smiled to myself; in Oregon, those temperatures meant summer was just starting to warm up.

In the afternoon Karisa and Vince paddled out to pick up a stray orange fishing float bobbing in the cove, find a freshwater stream and filter more water, and check some Happy Cove campsites for use.

I stayed at the campsite, explored the forest nearby, and wrote in my journal. Over the eight-day trip, the swelling had gone down in my left hand and the lacerations were healing well. My hand still ached, but was improved enough that I could write detailed notes about things I'd noted briefly earlier in the trip.

"Climate change and its effects are writ large across wilderness landscapes." – David Cole, in "Beyond Naturalness: Adapting Wilderness Stewardship to an Era of Rapid Global Change."

"Instead of speculating about it, we are witnessing and studying how landscape changes take place." – David D'Amore, in Science Findings 150.

When it comes to climate change, wilderness areas are in no way "untrammeled by man." Their ecosystems are already changing and adapting. In the Arctic, permafrost is melting. Thousands of small lakes, where enormous numbers of wild geese, ducks, and other waterfowl nest, are disappearing. Small woody shrubs are replacing tussocks of tundra sedges, mosses, and lichens in some places. In southeast Alaska, tree species are shifting their ranges. Natural seasonal rhythms are changing, but not in sync: some bird species may return earlier and not find food because insect hatches they depend on for food have not emerged. We don't know yet exactly what all the changes will be, and how they will play out in complicated ecosystems.

In terms of ecological wholeness, the 1964 Wilderness Act was a triumph. In the first fifty years, Congress designated a total of nearly 110 million acres of wilderness areas, an assemblage of stunning wild places from the Florida Everglades to arctic tundra. It was a valuable first step, to keep these areas from being roaded, logged, and mined. It has been a huge accomplishment benefiting both wild ecosystems and people who visit wilderness.

However, looked at from the twenty-first-century understanding of ecological dynamics, the Wilderness Act seems naïve. Wilderness areas couldn't just be set aside, like campfire-flavored preserves on a shelf. We excluded fire, often predators were missing, invasive plants and insects moved in, and the ultimate anthropogenic influence, climate change, cannot be kept out. Scientists are no longer just forecasting climate change. Scientists are now studying how ecosystems are already responding to climate change. Observant people who are not scientists can see many of these changes.

Since we can no longer claim that any wilderness, no matter how remote, is unaffected by people, we have to let go of arguments about never intervening in wilderness ecosystems. We worry—and we should—that if we intervene, we will make matters worse. But we are already affecting every wilderness on the planet. Let's consider how we might intervene in ways respectful of wilderness.

David Cole, a scientist and wilderness expert, recommends that we rethink the several meanings of "natural." If we let climate change happen, those effects are not natural because human-caused climate change is outside the normal range of variation. If we intervene, it's also not natural, but in a different way.

So let's argue less about what "natural" is, and consider several possible approaches to wilderness stewardship, as suggested by Cole.

One is not to intervene at all, even to compensate for human impacts such as climate change. We'll see how ecosystems adapt on their own, but in many places, we may end up watching ecosystems unravel.

Another approach is intervene to keep wilderness ecosystems the same as they were historically. That's probably like trying to push the tide back out to the sea.

Another is intervene to keep ecological functions intact. That opens up possibilities such as using prescribed fire in the West, and putting lime in eastern lakes to counterbalance acid rain.

Another is intervene to increase resilience, or the ability of ecosystems to adapt. That might mean assisting species migration, helping species hopscotch across farmlands and mountain ranges to other wilderness areas and making jumps that might otherwise be blocked by civilization. In Pacific Northwest wilderness areas, it might mean planting blister-rust resistant white pine seedlings in places where the introduced disease is killing the white pines.

Wilderness boundaries never were and never will be lines that can't be crossed. Everything from wildlife to bark beetles, climate change to thistle seeds, flows across wilderness boundaries. We never thought that we, the human species, were powerful enough to cause the Arctic to melt and forests to move. But we are. Now we have to go beyond the boundaries of our old ideas about stewardship of the wild, and begin consciously, thoughtfully, to practice stewardship differently.

"If throughout time, the youth of the nation accept the challenge the mountains offer, they will help keep alive in our people the spirit of adventure. That spirit is a measure of the vitality of both nations and men." William O. Douglas, in "Of Men and Mountains."

"I reckon I got to light out for the territory ahead of the rest, because Aunt Sally she's going to adopt me and sivilize me, and I can't stand it." Huckleberry Finn, in Mark Twain's "The Adventures of Huckleberry Finn."

On our final evening at Happy Cove, we disassembled our kayaks. We unclipped the hinged wooden frameworks of the Klepper kayaks and pulled off the red cloth skins. My yellow Folbot kayak had a lightweight, tubular metal framework that also came apart. We folded the frameworks and canvas skins and packed them in duffel bags.

While we worked, humpback whales were swimming about a hundred feet offshore. There was no breaching or fin slaps, just an occasional curved back showing and a quiet whale blow. A pair of bald eagles perched in separate trees on the tip of the spit and talked to each other. I let these voices of wilderness sink deep into my memory.

We packed our gear in duffels and dry bags; we packed our experiences in stories. My story began as a simple narrative of there-and-back-again, a loop around beautiful Tebenkof Bay. During my trip, I found other storylines: the decline and rise of humpback whales, rise and decline of fur farms, disappearance of the Tlingit people, migration of Alaska yellow-cedar, and gradual winking-out of remote homesteads, were some of those stories. Those stories deepened my mental map of Tebenkof Bay Wilderness. They became a layered text as intricate as the spruce and hemlock rainforest itself. I would remember those stories more clearly than I would recall, a year from now, the names of islands where we camped.

Wilderness allowed the stories to unfold at their own quiet pace, to the soothing rhythm and slow, steady progress of paddling a kayak. On different islands and different stretches of saltwater, Karisa shared her knowledge about the people, animals, plants, and land. I explored, observed, wrote in my journal, and had time to think. Big stories demand this kind of uninterrupted time to be lived and to be told. Little stories can be tweeted, flickered, and flashed, but big stories have depth, richness, and nuance. Big stories can change our lives.

In 1964, the Wilderness Act made wilderness not just the romantic idea of radicals, poets, and the insane, but actually institutionalized the idea and put the full weight of the federal government behind it.

Wallace Stegner, Roderick Nash, and others have written about how wilderness shaped the American character. Gary Snyder wrote that we need wilderness, or the practice of the wild, to learn "the etiquette of freedom."

So many stories of Tebenkof Bay were disappearing. In less than a hundred years, some stories were already barely remembered. Few people, especially young people, were connecting to this wilderness through the slow discovery and self-discovery of a days-long wilderness trip. They were not creating their own stories of the wild.

We were in danger of "de-storying" the wilderness—it would continue to be legally protected, but we would lose it as part of our common human experience. That loss, I am convinced, would be significant for us and for wilderness.

The more the wilderness is de-storied, the more likely it is to be destroyed because it will have no constituency. If we want wilderness to have a constituency in fifty years—so people can live their own adventurous stories, see wildlife, argue about what is good stewardship—we need to find ways to connect or reconnect more people to wilderness.

If we keep wilderness adventures as part of our personal stories, and connect other people to wilderness so it becomes part of their personal stories, I think we as the American people are more likely to protect wilderness for all the values it offers, and in all the ways it needs protecting.

That's a legacy we can be proud to leave.

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