Jesse Leach (left), owner of Bagaduce Oyster Company, sorts oysters at his aquaculture lease site on the Bagaduce River.
Inset: Leach prepares to head upriver to his oyster farm.
Upper right: Oyster "grow-out cages" on the Bagaduce.

all photographs by Catherine Schmitt

Maine OYSTER CULT

Oyster cultivation on the coast of Maine is on the increase: our water is clean, cold, salty, and full of nutrients, and our oysters have a delightfully distinctive taste.

BY CATHERINE SCHMITT

AT THE POINT where the Great Salt Bay drains into the Damariscotta River, just above the Route 1 Damariscotta-Newcastle bypass, there are great heaps of ancient oyster shells. One pile—technically these piles are called middens—is 30 feet deep and contains shells as large as 12 inches long. The shells crumble from the steep banks at Glidden Point into the salty shallows of the estuary. In June, mating horseshoe crabs scramble over the calcareous fragments that are evidence of Maine's once-plentiful oyster populations.

While people have gathered shellfish from Maine waters for more than 5,000 years, there was a period when oysters were absent from the coast. Now a growing community of fisher-farmers is again making a living pulling oysters from the sea.

Piles of discarded oyster shells like those in Damariscotta have been found as far north as Nova Scotia. The Damariscotta middens were left by the region's native peoples, who harvested oysters that flourished in the wake of receding glaciers. As rising sea levels moved the coast inland, oysters multiplied in the warm, brackish water, and the natives feasted, but the great harvests didn't last. Around 1,000 years ago, the oysters disappeared and the middens were abandoned.

Anthropologist David Sanger, with whom I discussed oyster history, suggested that as the sea level continued to rise, the salt water brought with it predatory snails known as oyster drills and other marine animals which, in addition to cooling temperatures in the Gulf of Maine, caused the

Above and center:
Chris Davis of Pemaquid Oyster Company rotates oyster trays on the Damariscotta River.

Below: Jesse Leach selects and bags oysters to be shipped to restaurants.

oyster population to crash. Sanger said it is likely that some populations survived in the small creeks around Salt Bay, but not enough to sustain the natives. Later, when the Europeans arrived, they lined the shores of the Damariscotta with brick yards and sawmills and cleared the land of trees. Clay silt, sawdust, and soil washed into the river, making the Damariscotta inhospitable to any oyster that attempted to return.

The eastern or American oyster, *Crassostrea virginica*, ranges from the St. Lawrence River in Canada to the Gulf of Mexico. In Maine, oysters once grew in the upper reaches of estuaries where water was warmer and less salty than the open ocean, but was deep enough to prevent freezing in winter. It is true that Maine never had extensive oyster reefs like those in the Chesapeake Bay, which in the late 1800s produced over half of the world's oysters. But while Chesapeake Bay and other major oyster-producing areas are now troubled by pollution and overfishing, Maine's coastal waters have remained relatively clean, making them the ideal place to attempt to bring back a traditional local food.

With the exception of a few stubborn oysters that survived in the Sheepscot and Piscataqua rivers, Maine's native oysters were all but gone in 1949 when the Department of Sea and Shore Fisheries (predecessor to the Maine Department of Marine Resources) introduced to Maine the European oyster, *Ostrea edulis*, the same species as the legendary Belon oysters of southern France. Because of colder temperatures, Maine was one of the few places on this side of the pond where these flat oysters might survive. While the experiment didn't take off the way the agency had hoped, a few hearty European oysters took hold and established wild populations.

In 1972, Herb Hidu, a professor at the University of Maine, along with Ed Myers and other entrepreneurs, began investigating the cultivation of oysters in Maine waters. With funding provided by the Sea Grant program, Hidu developed methods to culture the European oyster in the Damariscotta River adjacent to the University's Darling Marine Center. In addition to being naturalized in Maine waters, the European oyster was different and uncommon, compared to the American oyster, and thus had market potential.

"Things went well until the parasite *Bonamia* arrived in the mid-1980s and pretty much wiped out the European oysters," said Dick Clime, one of Hidu's graduate students who is now co-owner of Dodge Cove Marine Farm on the Damariscotta, where he grows Pemaquid oysters.

With the European oysters devastated by disease, Hidu and the next generation of students reconsidered the native species.They continued their research into the 1990s, this time focused on *Crassostrea virginica.*

Jesse Leach is one of the 27 licensed oyster grow-

ers in the state. Unlike Chris Davis, a partner in the Pemaquid Oyster Company who earned his Ph.D. by studying ways to breed oysters that grew faster and were better adapted to Maine's cold waters, Leach came to aquaculture from a working background. Ten years ago, he was a lobsterman, occasionally diving for scallops and sea urchins. He lost a finger while hauling traps. Fearing declines in the fishing industry, and not anxious to lose any more appendages, Leach signed up for a fishing industry retraining program directed by Davis and others to see if he had other options.

"Aquaculture would keep me on the water," said Leach. "Once you get saltwater in your veins, its tough to get it out." Eight years ago, he obtained a lease from the state to grow oysters in the Bagaduce River near his home in the town of Penobscot.

A few houses and blueberry fields line the banks of the Bagaduce River, but for the most part the shoreline is unbroken spruce and granite. The tide drifts past uninhabited islands and through lustrous beds of eelgrass before tumbling through the reversing falls that flow beneath Route 175/176. Leach's oyster farm is located just upriver from the falls, which help to aerate the water and restrict the tidal range, preventing wide fluctuations in water level that would strand the oysters on exposed mud flats.

Since Maine waters don't always get warm enough for oysters to spawn, most growers, including Leach, buy oyster "seed" from one of seven hatcheries in the state. Seed oysters are about the size of a grain of sand. Leach places the seed in plastic mesh trays that float on the water's surface. He turns the trays daily to prevent fouling by sponges, sea squirts, and other organisms. Most growers place their shellfish on the river bottom to continue growing, but Leach keeps his on the surface until they reach market size, which for him is about two to three inches, when they are about three years old.

Leach has built the Bagaduce Oyster Company from a shoestring operation into a 200,000-oysters-per-year company. He has encouraged his son Stuart to pursue the business: the USDA recently awarded Stuart a $5,000 loan to start his own operation. Leach also raises hard-shell clams and tends a 19-head herd of cattle, though he makes most of his living from the oysters.

Chris Davis, who in addition to raising oysters at Pemaquid Oyster Company directs the Maine Aquaculture Innovation Center, thinks that Maine will see more small oyster farms like Jesse Leach's. "Oyster aquaculture is very amenable to small start-ups," he says, "because you don't need a lot of capital investment." He estimates that oysters represent a $3 million per year industry in Maine, an industry that produces wild, local, fresh, healthy food that is in demand by top restaurants around the continent.

What is it about oysters?

To taste an oyster is to taste the sea, and to taste a Maine oyster is to taste the cold, clean, salty waters of the Maine coast.

Oysters feed by filtering algae and other particles from the water, and so they take on the characteristics of the place where they live. The taste of oysters varies from river to river depending on the food they eat, and the temperature and salinity of the water. So a Damariscotta River Pemaquid or a Glidden Point oyster differs from a Cousins River Flying Point, and a New Meadows River Winterpoint has a different taste than a Mill River Oak Point, which differs from a Bagaduce.

In colder regions like Maine, oysters filter water more slowly, and so they have more time to rest in their shell and develop the flavor of their home. As winter approaches, Maine oysters begin to stockpile glycogen in preparation for a sort of hibernation. Glycogen makes them fat and sweet, and as a result fall and winter are considered the best time to eat a Maine oyster. The cold also keeps away the diseases that plague oysters of more southerly waters.

To taste a Maine oyster is to taste the cold, clean, salty waters of the Maine coast.

Water quality is one of the biggest concerns of the oyster farmer. While the filter-feeding oysters themselves actually help to keep the water clear, pollution can shut down oyster-growing areas for months. In 2005, a red tide caused by the toxic single-cell algae *Alexandrium* kept the coast of Maine closed for much of the summer. If a restaurant has oysters on the menu, you can be sure they are safe to eat, however, as the Maine Department of Marine Resources monitors levels of toxins in shellfish regularly during the red tide season.

In *A Geography of Oysters*, Rowan Jacobsen wrote that oysters "have a *somewhereness* to them, like great wines, and in a mass-produced society where most foods don't seem to be from *anywhere*, this makes them special."

Maine oysters are even more special, says oysterman Jesse Leach. He says they are the best-flavored oysters in the world.

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