**Aw, shucks: oyster culture from water to raw bar.**

“I have oyster liquor running through my veins,” declares seventh-generation Louisiana oysterman Mike Voisin. Voisin’s family, who migrated from France in the 1700’s, is part of a long history of oyster culture in the United States. From early Native Americans who harvested wild oysters for food and dumped piles of shells (known as middens) along oyster-abundant waterways, to the proliferation of oyster farms, oyster bars, and oyster shucking contests today, the briny bivalves have been part of American culture for hundreds of years.

The culture surrounding oysters varies from coast to coast, but in all regions, it’s about the relationship between people and place. Oysters’ flavor depends more on location than any seafood, which makes the taste of regional oysters unique, every time they’re eaten.

In this report, we explore different aspects of oyster culture by looking at three major oyster regions in the United States. In the Puget Sound of Washington State, we discuss an oyster’s ‘taste of place;’ in the Chesapeake Bay of Virginia and Maryland, we look at farmed and wild oysters; and in the Gulf of Mexico, we explore the impacts of human development and environmental disaster on oyster populations.

**Puget Sound (Washington State):**

The flavor of an oyster has everything to do with its geography—flavors differ regionally and even from bay to bay and creek to creek. The taste of the sea, and thus an oyster, depends on everything from salinity and water temperature, to the algae they eat, the minerals in the water, the way they’re cultivated, and the time of year they spawn. All of these factors affect taste, plumpness, texture, and sustainability.

The Puget Sound, dubbed by author Rowan Jacobsen in his book *A Geography of Oysters*, as “oyster nirvana,” is home to numerous contrasting shorelines. From the Sound’s calm, sheltered harbors to the expansive fjord of the Hood Canal, the Puget Sound’s varied geography helps to create oysters unique to any other.

**Farming techniques**

The range of aquaculture techniques used for oyster farming depend on the geographic location of the farm and the grower’s preference. Each process gives the oysters different characteristics.

**Beach cultured:** This traditional method of growing oysters happens right on the beach floor in the intertidal zone. Oyster beds are spread with spat (oyster seed) and the bivalves are left to grow. Because they have to protect themselves from predators and from the wind, sun, and tides, beach cultured oysters have thick, tightly clamped shells. Once harvested, the thick shelled varieties are easier to shuck and have a longer shelf life than other types of farmed oysters.

**Rack and bag:** This type of oyster farming also takes place in the intertidal zone, but the oysters are grown in mesh bags, elevated off of the beach floor in racks. Both the racks and bags protect the oysters from predators and because they are elevated off of the beach...
POINT OF ORIGIN
Washington’s North Sound is deep and rocky, making suspended aquaculture the dominant form of oyster farming. Oysters grown here are exposed to high salinity levels, leaving them with a much brinier flavor than Southern Sound oysters. Nurtured by an entirely different environment, the waters of the South Sound produce some of the world’s best oysters, says Seattle oyster expert Jon Rowley. Influenced by the numerous rivers and other nutrient-rich waterways, salinity is decreased while the level of algae that oysters eat skyrockets. An exceptional abundance of food in Totten Inlet, for example, allows oysters to grow “sweet, plump, and perky,” says Rowley.

TASTE OF PLACE
The distinct flavor of regional oysters is “like eating the water,” says Chef Tenney Flynn of GW Fins in New Orleans. It’s the “live sea taste” of each oyster that keeps Flynn excited about trying different regions’ oysters. But it’s an experience, he says, best kept in context. “I want to eat oysters where they’re from,” says Flynn. Brian Kingzett of University of Vancouver’s Deep Bay Field Station agrees. “Whenever you are, [those oysters] are the best in the world.”

Chesapeake Bay (Virginia & Maryland):
The home of some of the country’s largest remaining oyster middens, the Chesapeake Bay was once home to oyster populations as high as 100 million pounds a year. These populations now stand at 1% of those historic harvests. The discussion of farmed vs. wild oysters is front and center in projects aiming to restore oyster populations, both for harvesting and improving water quality.

Is it possible to eat a sustainable, responsible oyster from the Chesapeake Bay? According to chef and sustainable seafood advocate Barton Seaver, “responsibly caught, no; responsibly harvested, yes.”

WILD VS. FARMED
Wild oyster reefs create boundless habitat for other species, including blue crab and menhaden in the Chesapeake. These oysters, when left undisturbed, also create a necessary hard bottom where erosion and sediment are held in place. Once dredged (a process of dragging a heavy frame and mesh bag along the sea bottom), these oyster reefs no longer provide such critical ecological services to the ocean habitat. As author Jacobsen points out, dredging rarely takes place on truly wild oyster beds, but rather on seeded oysters left to grow on public beds or generation old leases. However, these beds provide the same services as truly wild oysters, and when removed can have negative impacts on the greater habitat.

Fertile oysters take it a step further. When they spawn, the result is a new crop of wild oysters that help to repopulate and restore old habitat (Most farmed oysters are infertile and don’t provide this added benefit.). The dual benefits of filtering and habitat restoration make oyster farming an attractive addition to waterways like the Chesapeake that struggle with the impacts of pollution and habitat destruction.

Farmed oysters even look more desirable to eat. Wild oysters are often long and shallow, while practices like tumbling (rotating oysters from low impact areas to the shore or machines that toughen the oyster), help create plump, deep shelled oysters. Rowley describes tumbled oysters “like petals on a flower.”
Gulf of Mexico

With 70% of the US supply of oysters coming from the Gulf of Mexico, —one of the only remaining wild oyster populations in the world—the stakes in the Gulf are high. Environmental degradation and both natural and man-made disasters have made the Gulf oyster industry precarious at best. One issue of particular concern is the Gulf Dead Zone.

The Gulf’s impressive ecosystem is built with 165 million years worth of sediment from the Mississippi River, as far north as Chicago. But the influx of nutrients which created the Gulf may also be its destruction. Excess nutrients from farming and residential communities all along the Mississippi (in the form of agricultural and domestic runoff) may be more than the delicate marsh coastline can handle.

EXCESSIVE NUTRIENTS

Agricultural runoff can intensify along with boosts in crop production. As crop prices or government subsidies increase, so does the amount of land under production. This land is often of inferior quality or at high risk for soil erosion, increasing the amount of fertilizer and other nutrients used to maintain high crop yields.

But agriculture is not the only source of runoff. Sprawling human development may also contribute more than agricultural runoff on a per acre basis, according to Russ Brinsfield, executive director at the Center for Agro-Ecology at the University of California, Santa Cruz.

The nutrients that flow into the Gulf cause algae blooms that deprive the water of oxygen and make it hard for marine life to survive. The process, known as eutrophication, results in what’s commonly called the Gulf Dead Zone. An area approximately the size of New Jersey, the Dead Zone has hit the oyster industry especially hard. While many marine species in the Gulf can move further out from shore, avoiding the Dead Zone, oysters are connected to the shore—both physically and in their need for specific conditions such as mix of salt and fresh water.

Gulf oystermen have always been both blessed and cursed, says oysterman Mike Voisin. “Mother Nature has been good to us… we’ll be here for a long time,” admitting though, that the industry was “tackled hard” in the past few years.

EFFECT ON THE OYSTER INDUSTRY

While other Gulf fishermen have struggled to afford the longer journey to their bounty, oystermen have found most of their catch nearly eliminated in the areas affected by the Dead Zone. First discovered in 1985, the Gulf Dead Zone has lead to greater management of oyster populations. Mark Schexnayder, from Louisiana Sea Grant at Louisiana State University in Baton Rouge, notes that oyster beds are kept closed and regular stock assessments taken in order to responsibly maintain oyster populations in the Gulf.

Farming techniques (continued)

floor, they filter less sand and are able to eat more efficiently and grow faster. But their faster growth also means a more delicate, brittle shell that can shatter easily when shucked.

Longline: Longline oyster farming is similar to the rack and bag method except the oysters are grown in bags suspended from long ropes. Like rack and bag, the oysters are protected from predators and from the elements—they grow quickly and feed efficiently. But the suspension method requires some effort on the oyster’s part to stay in place, and their shells thicken accordingly.

Suspended tray: This method suspends bags of oysters in deep waters where they grow until harvest. Suspended tray oysters are protected from predators as well as exposure to the elements, and they tend to have very delicate, tender meat and shells.

Additional resources:

BOOKS

The Big Oyster: History on the Half Shell, Mark Kurlansky
Oyster, Rebecca Stott
Sex, Death, & Oysters: A Half-Shell Lovers World Tour, Robb Walsh
Although the Dead Zone may remain the largest contributor to degraded oyster populations, oysterman Voisin reminds us of the constant barrage of environmental disasters in the Gulf that threaten the oyster fishery. “Gulf oystermen have always been both blessed and cursed,” he says. The bountiful ecosystem is also a fragile one. Hurricanes Katrina, Rita, and Ike; the Deep Horizon Oil Spill in 2010; and flooding from the Mississippi River in 2011 are all reminders of the delicacy of the region.

In the Restaurant

Since the creation of oyster middens, “oysters have become a more sensory, cultural experience than a protein experience,” explains Deep Bay Field Station’s Kingzett. As one of the last wild and living creatures humans eat, New Orleans chef Flynn describes the experience as a truly individual one.

Creating this experience requires a close relationship between restaurants and oyster growers, unique to the industry. At Rappahannock River Oysters in Topping, Virginia, this relationship is especially important, explains Travis Croxton, who resurrected the family oyster business with his cousin Ryan in 2002. “Chefs want us to think creatively,” says Croxton, making it critical for the cousins to “visit their kitchens and have them come to [our farm].”

These relationships have allowed Rappahannock River Oysters to “move beyond sustainability and into restoration,” says Croxton. Their most recent project, a shell recycling program, gives chefs and restaurants the chance to take an active step in recreating severely depleted oyster populations by returning their used shells to the cousins for restoration projects. “Chefs are early adopters,” says Croxton. “They really got behind us [on this project] It’s a game changer for us.”

When farms like Rappahannock River Oysters work directly with restaurants, they rely on chefs and restaurant staff to pass their message of restoration on to diners. One crucial step is knowledgeable servers and oyster shuckers. Jeremy Sewall, chef/co-owner of Island Creek Oyster Bar in Boston, the staff needs to be able to answer any question posed by guests about the food on their plates. Sewall’s staff is introduced to each oyster through tastings, discussions with the grower, and fact sheets. “It is a simple process that connects the staff to the product,” says Sewall.

A BOUNTY OF BENEFITS

“There is no negative to tell,” when talking about oysters, says Seaver. Oyster traditions have spanned centuries, and today, their storyline includes sustainable economic development, ecological restoration, and the continued connection of chefs and diners to unique and specific tastes of place. We hope chefs and restaurants will continue to play a role in spurring oyster culture forward for many centuries to come.

Chefs Collaborative works with chefs and the greater food community to celebrate local foods and foster a more sustainable food supply. The Collaborative inspires action by translating information about our food into tools for making sustainable purchasing decisions. Through these actions, our members embrace seasonality, preserve diversity and traditional practices, and support local economies.