

## AQUACULTURE

# Sowing lessons

RWU professor a guru for aspiring shellfish farmers

By Alex Kuffner Journal Staff Writer

BRISTOL, R.I. — If you want to become a shellfish farmer, a good place to start isn't in a South County salt pond or a cove off Narragansett Bay, but in a class on dry land.

This winter and spring, in a lecture hall at Roger Williams University, as he has done here for the past decade, and on Cape Cod for the decade before that, Dale Leavitt is teaching both aspiring shellfish farmers and those with deep experience in aquaculture the ins and outs of growing oysters, quahogs, scallops and mussels.

The course, Applied Shellfish Farming, is, as far as Leavitt knows, the only one of its kind in New England. There were similar classes in Maine and New Jersey, he says, but neither is taught anymore. A federally funded effort that Leavitt was involved in last year to start a regional program fell through. So it's no surprise that among the 20 or so students in this year's course, there are people from Massachusetts, New Hampshire and Connecticut who are trying to stake a claim in the region's growing aquaculture industry.

Even with a snowstorm approaching on a recent Tuesday night, John Pinkowski made the three-hour trip from Branford, Conn.

"Dale's a wealth of information," said Pinkowski, who is setting up an oyster farm in Long Island Sound. "We're always learning."

Leavitt, an assistant professor of biology, easily stands out on a university campus, with what amounts to an aquarium tattooed across his arms. The octopus with blurry tentacles stretching over one forearm is only the most obvious.

Leavitt is a scientist, but he can also wax poetic about the marine animals he's studied since the 1980s. On this night, he showed the class a photo he took on a trip last summer to Tasmania of a Pacific oyster with a lustrous pink-and-white shell.

"That's a beautiful oyster," he said. "Look at all the ornamentation. It has a nice fluted edge around it."

But, this being a class rooted in the practicalities of growing mollusks, he added, "Of course, all of this is razor-sharp. They're a pain to handle."

Leavitt started the course about 20 years ago when he was at Woods Hole Sea Grant and taught at the Massachusetts Maritime Academy, in Bourne.

In 2003, David Alves, at the time the aquaculture coordinator at the Rhode Island Coastal Resources Management Council, asked him if he could start a similar class in the Ocean State, which was just starting to see a revival in oyster farming. Leavitt came to Rhode Island and ended up a tenured faculty member at Roger Williams.

These days, he teaches undergraduate students, but he spends much of his time in the field or in the basement of the Marine and Natural Sciences Building, where a shellfish hatchery is located. It's the only one of its kind in Rhode Island.

He does research on shellfish disease and biology but also conducts studies on new farming methods, such as using clay pellets to bury quahogs instead of sand.

He has also helped lead efforts to revitalize Rhode Island's stocks of Eastern oysters, the state's native species that was diminished by disease and contamination and then decimated by the Hurricane of 1938.

From the mid-1860s until that historic storm, Narragansett Bay had a thriving oyster industry, with annual revenues at the peak of production equivalent to more than \$50 million today.

But when Leavitt came to Roger Williams, Rhode Island's oyster population was miniscule and modern aquaculture was still in its infancy in the state. Although the local industry isn't as large as it once was, it has grown exponentially in recent years, from 10 farms covering 26 acres in 1998 to 52 farms totaling 177 acres as of 2013, the most recent year of data from the CRMC.

Just as it was a century ago, the bulk of the business is in oysters, with more than 6 million farm-grown oysters sold in Rhode Island in 2013 as compared with 38,500 clams. The total value of aquaculture products was up to \$4.2 million, a staggering 49 percent increase over the previous year.

"It's a sustainable farming practice that produces a good quality product," Leavitt said. "It's something that people can get into without a lot of startup. And people are making money at it. That's important."

The revival in oyster populations is not just good for the economy. The bivalves are also a boon for the environment. Oysters act as filters, eating free-floating algae, reducing harmful nitrogen levels and improving the overall water quality of Rhode Island's bays and inlets.

Enrollment in Leavitt's course has mirrored the growth of aquaculture in Rhode Island. For years, he would have classes of about a dozen students. But three years ago, attendance skyrocketed to 60 people and for the past two years it has hovered between 20 and 30.

On this night, a former Roger Williams undergraduate who now works for a big oyster farm in Duxbury, Mass., attends the class. The topic is raising quahogs.

Also in class is Paul Carson, a third-generation fisherman who grows oysters in New Bedford and is also a partner in a farm in Barnstable started by one of Leavitt's former students.

Carson says the future of seafood is in aquaculture. Even though he's spent years in the industry, he doesn't skip Leavitt's classes.

"Things are changing," he said. "You have to keep your finger on the pulse."

Pinkowski, a former clam-boat captain and seafood wholesaler, and his wife have plans for a 15-acre oyster farm all drawn up, but he makes the long trip to class from his home near the Connecticut shore because they want to do everything right.

"If we can start out small and get people interested, then we'll grow," he said.

Many of Leavitt's students have gone on to start their own operations. On his website, one oyster farmer in Westport who took the class describes Leavitt as a friend who's always willing to share his knowledge.

Leavitt points to oyster farms in Mount Hope Bay and off Hog Island that were started by former students. He says that the owner of the newly opened Bristol Oyster Bar, who farms oysters in Portsmouth, didn't take the class, but one of his employees did.

"One day I should sit down and figure out all the businesses I've helped out," Leavitt said.

—akuffner@providencejournal.com

(401) 277-7457

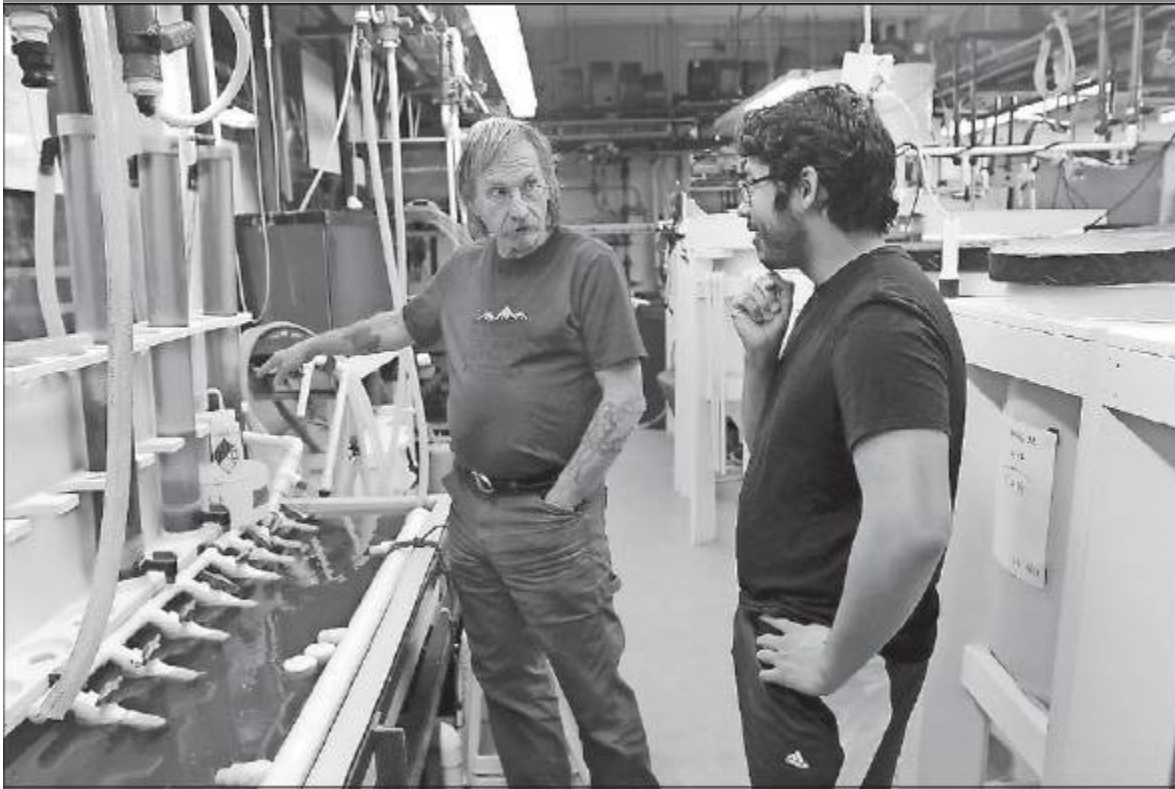
On Twitter: @KuffnerAlex

# Planting quahog seed

- Obligate infaunal clam
- What does that mean?
  - Needs to be in sediment at some point in their life.
- Usually planted sometime after they get to 8 mm (0.3 in)
  - Normally get up to 15 mm (0.6 in) over the first summer (in nursery)
  - Have growout nets as small as 3 mm (0.11 in)
  - If he gets much beyond 20 mm (0.75 in) then get
  - Deeper
  - In
- Need enough mud for life



Dale Leavitt, a professor at Roger Williams University, teaches a class on shellfish farming that draws students from all over New England. While this recent class was on quahogs, his usual focus is on oysters.  
**THE PROVIDENCE JOURNAL / KRIS CRAIG**



Dale Leavitt, Roger Williams University associate professor of biology, left, talks with senior Josue Garcia at the shellfish hatchery. ***THE PROVIDENCE JOURNAL/GLENN OSMUNDSON***

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Roger Williams University Prof. Dale Leavitt displays an adult American oyster in the hatchery at the school's Marine and Natural Sciences Building.