

A River Runs Through Cape Cod

Bass River, beset by pollution and collapsed infrastructure, finally finds a friend in a new nonprofit organization dedicated to bringing the river back to health.



JIM KINSELLA/CAPE COD REVIEW

By RICH HOLMES of the CAPE COD REVIEW

Dipnet in hand, a woman stood in shallow water on the south side of the North Dennis Road bridge over Crab Creek in Yarmouth Port, eyeing the water flowing out of the bridge's square concrete culvert for blue crabs.

"Any luck?" I yelled down to her from a gravel patch by the east end of the bridge.

"Just small ones," she replied.

"You'll get bigger ones later in the season," said Rick Bishop, standing beside me. She nodded her reply.

Bishop is executive director of the Friends of Bass River, a non-profit organization working toward environment improvement of Cape Cod's biggest tidal stream. The section of the river near North Dennis Road goes by the name "Crab Creek"

The scene before us seemed a slice of bucolic beauty, as sunlight illuminated the creek run-

ning through the forested conservation area.

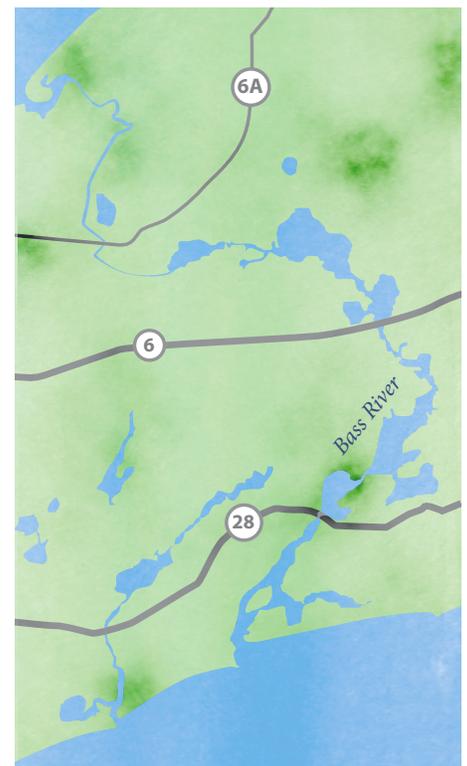
But to Bishop, the same scene displayed damage done to the upper part of Bass River.

He pointed to the creek's wide banks. Erosion, he said, had washed away soil and toppled trees so the once 18-foot-wide streambed is now 58 feet across.

In 2018, the railroad bridge built in the 1800s, which crossed Bass River a short distance south of the four-lane Mid-Cape Highway, Route 6, was replaced with a bike and pedestrian bridge. That allowed stronger tidal surges to come up the river.

At North Dennis Road, these watery forces met the precast 6-foot-square culvert, a pinch point, causing erosion on both sides of the bridge.

Installed in 2010, the culvert is one of several physical barriers the Friends of Bass River hope to rectify in its attempt to restore the upper reaches of the river to a more natural state.





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The upper estuary, west of Follins Pond

The North Dennis Road bridge traverses Crab Creek upstream from Follins Pond. Going further up, the creek flows west to become Mill Pond. Continuing on from Mill Pond, Hamblins Brook heads toward Weir Road.

There, another crossing forms another bottleneck, caused by a collapsed culvert. It hampers passage of fish and limits water flow in and out of the surrounding 57 acres of wetlands and old cranberry bogs, which are crisscrossed with drainage ditches, berms and water controls.

Bishop's organization wants to replace the Crab Creek culvert with a single-span bridge or add more precast culverts to increase flow while lowering the pressure that's scouring the banks.

It also seeks to remove the collapsed Weir Road culvert and create a meandering stream through the old bogs, now owed by the Town of Yarmouth, and connect to Miss Thatcher's Pond, which he identified as the historical spawning grounds for herring, and the true spring-fed headwaters of Bass River.

The pond and surrounding wetlands lie between Weir Road and Union Street in Yarmouth Port.

The Crab Creek culvert might even be reused if replaced, as it's "nearly a perfect fit" to replace the fallen Weir Road culvert, according to the Friends' website.

Hamblins Brook, as a natural stream, "no longer exists," Bishop said, but "in the 1870s, it was the second-largest herring run in all of Massachusetts."

The Friends of Bass River are starting by focusing on the upper part of the estuarine system because changes there could be done relatively quickly with great effectiveness, Bishop said.

Attempts to reduce nitrogen entering the watershed by installing sewers in the residential areas around the upper part of the river is "decades away," he said. "This could be done in five years."

A \$253,779 grant from the U.S. Environmental Protection Agency's Southeast New England Program, awarded last year to the organization, has helped the Friends of Bass River sample, study and plan the restoration effort.

Bishop said the organization recently applied for the another SNEP grant to complete the second phase of the project.

The group paid for all the engineering work, he said.

The battle is personal for Bishop, a Cape native who grew up swimming at Windmill Beach in the Bass River section of Yarmouth, and used to harvest scallops as far up the river as Follins Pond, northwest of where Route 6 passes by Kelleys Bay.

Those scallops disappeared along with the eelgrass that grew on the river's bottom, he said, killed off by rising levels of nitrogen, primarily from septic systems around the river. Eelgrass is vital to the scallops, which find their first home on the slender blades of grass and can hide amongst them as they begin to grow to maturity.

Too much nitrogen in coastal waters causes algae blooms and oxygen-starved dead zones, along with fish kills and smelly, slimy areas.

"It was loaded (with scallops) when I was a kid - loaded," he said.

By the mid-1980s, scallops could still be had between the Bass River bridge (Route 28) and High Bank Road bridge, Bishop said, but no longer.

"I'm so passionate about the river - it's part of my life," he said.

Taking on the problem

In 2017, a handful of residents concerned about the river's degradation formed the Friends of Bass River.

In 2020, they hired Bishop, a member and former chair of the Yarmouth Conservation Commission, as executive director.

"I immediately started a testing program in six locations," he said.

Water samples taken weekly during the summer by a team of 12 volunteers go to the Center for Coastal Studies in Provincetown for nitrogen analysis.

Ten years ago, the Massachusetts Estuaries Project estimated the total amount of nitrogen in Bass River estuarine system at 338 kilograms a day.

Five years ago, the state Department of Environmental Protection recommended levels be lowered to 206 kilograms a day.

With all the development that's occurred in the past decade, imagine what the total nitrogen load is now, Bishop said. Because of the impaired water flow, the upper reaches of the system are more subject to the harmful effects of nitrogen loading.

The sampling now being done by the Friends will provide the first new data on nitrogen levels in a decade or more. Bishop said results should be known in a few weeks.

The Friends of Bass River want to increase tidal flushing and recreate historic wetlands to lower nitrogen levels in the river and improve the habitat for fish, shellfish and other native wildlife.

Revising the culverts at Crab Creek and Weir Road would help accomplish this.

Once the project design and plans are complete, the group will raise funds to do the restoration.

“We like holistic projects—projects that have a broad impact,” said Tom Ardito, administrator of the Southeast New England Program’s watershed grant program.

He said the Bass River project received a grant because it seeks to improve conditions for both habitat and wildlife, and ameliorate the effects of flooding. Plus, it’s backed by the Town of Yarmouth.

Yarmouth voters placed about \$95,000 in community preservation funds toward the project, Bishop said, and the town’s conservation commission been involved “since the beginning.”

Yarmouth conservation administrator Kelly Grant said town staff from conservation, natural resources and public works departments regularly attend meetings on the project’s progress.

The grant program looks for commitment from all involved parties, Ardito said.

“You had very strong support from the municipality,” he said.

Ardito said the grant requires a 33 percent match in non-federal funds. The grant funds are being administered for the Friends by Cape Cod Foundation, a larger organization better suited to handle the accounting responsibilities, Ardito said.

Despite the pandemic, the Friends managed to keep to its project schedule, Bishop said. Ardito praised the group as “one of more timely grantees” in accomplishing the work set forth its grant application.

He said he couldn’t speak about the merits of the Friends’ second grant request, but its fate will be decided in mid-August and this year’s grants will be announced in September.

Other local organizations that have received SNEP grants include the Association for the Preservation of Cape Cod, Buzzards Bay Coalition, Pleasant Bay Alliance and the Falmouth Rod and Gun Club, which is restoring old cranberry bogs on the Childs River to natural wetlands, and improving the waterway to allow fish to travel upstream.

A shared problem for Dennis and Yarmouth

While the initial project lies within Yarmouth, the Friends’ interests extend to the entire river. The eastern half of the waterway from the middle of Follins Pond to the river’s mouth on Nantucket Sound falls within the town of Dennis.



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Erinn McCarty, the group’s vice chair, said she would like to see a similar project in the area of Weir Creek in West Dennis where she lives.

Lower County Road and Loring Avenue both cross the creek, which widens near the West Dennis Yacht Club to pass by “The Fingers,” a neighborhood of homes on short canals, and then empties into the river just north of its mouth.

The Weir Creek area suffers from the same issues as the upper river, she said.

Improvement of the river’s nitrogen levels isn’t just a nice thing to do for the environment. All Cape towns are under legal pressure to reduce nitrogen pollution of their coastal waters to become compliant with the federal Clean Water Act, as laid out under the county’s 208 Plan.

An effort to create a regional plant in Dennis that would treat wastewater from Yarmouth, Dennis and Harwich foundered last month when Harwich officials decided to pull out. McCarty said Dennis residents should know that the town still has to clean up its nitrogen problem, whether or not a regional plant is built.

“Dennis has to have a comprehensive wastewater plan,” she said.

The 208 plan places the responsibility for nitrogen reduction on towns, but looks at the problem by watershed. Of the 53 watersheds identified in the plan, 32 lie within two or more

towns, so cooperation would seem to be the name of the game. Dennis officials are aware of the Friends’ project, McCarty said, adding she has discussed it with members of the select board.

She said the Friends of Bass River has quickly grown to about 1,300 members, with many from Dennis. The group plans a “state of the river” meeting in October at which it will try to get representation from all levels of government.

George Macdonald, chairman of the Dennis Conservation Commission, said that he has not been involved with the Friends’ project, but supports the goals of restoring wetlands, clearing waterways and lowering nitrogen water levels.

“In a general way, I certainly would be in favor of all of them,” he said, noting he had worked on a similar project on Sesuit Creek back when he was the town natural resources officer.

Both Bishop and McCarty stressed the need for more public education on threats to the river and what local residents, summer visitors and businesses can do to help out.

The Friends’ website encourages maintenance of septic systems, organic lawn care, use of boat pumpout facilities, and proper disposal of hazardous wastes. The group’s newsletters have discussed Styrofoam pollution from boating, and how low tidal flushing encourages the growth of invasive plants into salt marshes.



ROBERT SCOTT BUTTI

Why restoring Bass River matters

Bass River may be the Cape's largest tidal stream, but it's far from the only one, and those other estuaries shares its flow and pollution problems.

Work has begun on some of those waterways, including the Herring River in Wellfleet and the Coonamessett River in Falmouth.

"Cape Cod's small estuaries, like the Bass River, are incredibly important for residents and visitors—for swimming, boating, fishing, birding and aesthetic enjoyment," Ardito said.

"By restoring cleaner water to the Bass River," the program director said, "this project will ensure that present and future generations can continue to enjoy the unique beauty of Cape Cod's coastal environment."

Alternative septic systems may help address the pollution

All of 15 of Barnstable County's towns have been on notice to reduce nitrogen pollution of coastal waters since 2011, when the Conservation Law Foundation sued the Environmental Protection Agency over the matter. In response, the Cape Cod Commission created the 208 Area Wide Water Quality Management Plan.

Horsley worked as a water resources consultant on that plan and is now working with the Friends of Bass River and other like-minded groups, including the Barnstable Clean Water

Coalition, as well as the Town of Wellfleet.

Horsley said while it's taken years, Cape towns and local organizations are making steps to cut nitrogen pollution.

"There's been way too many plans developed and not enough action," he said. But now, "it's happening," he continued, citing sewer projects moving forward in Mashpee and Barnstable.

Big sewer projects typically serve downtowns and other densely developed areas, such as along Route 28 on the Cape's south side. Alternatives to traditional septic systems could provide relief for less densely settled areas, like those around the upper section of the Bass River system, Horsley said. The technology is simple, less expensive than sewers and natural.

After leaving the first tank in a traditional

septic system, where solids settle out, the effluent would then be aerated and sent into a tank of wood chips, where bacteria (using carbon from the wood chips) remove nitrogen before the treated wastewater is dispersed through a leaching field. The technology has improved to the point where it gets rid of 80-90 percent of the nitrogen, he said, and it can be scaled up to serve several buildings.

The technology may become part of the state's Title V septic regulations. Horsley said he sits on an advisory committee to the Department of Environmental Protection that's considering adopting the technology as part of an update of the existing rules. It's already being tried on Cape Cod in projects in Wellfleet and Barnstable, he said.



friendsofbassriver.org

Please consider supporting the Friends of the Bass River and the Cape Cod Foundation.