







Grass-Roots Effort

A team of unlikely allies is jump-starting eelgrass recovery on the St. Johns River

BY NATALIE VAN HOOSE

bout 20 anglers and homeowners are already anchored at Bayard Point, a conservation area south of Green Cove Springs, when the St. Johns Riverkeeper skiff motors up. It's April 15, a Monday, but the group has opted to volunteer the afternoon to help the Florida Fish and Wildlife Conservation Commission jackhammer T-posts into the riverbed and affix 1,400 feet of steel mesh fencing.

Their goal? Restore eelgrass to the St. Johns River.

Eelgrass underpins
the health of the river,
securing sediment, taking
up nutrient pollutants, and
providing vital food and
shelter for many species,
including young bass,
bream, and perch. Putnam
County's reputation as the
"Bass Capital of the World"
depends on it.

But back-to-back Hurricanes Matthew and Irma in 2016 and 2017, respectively, razed the river's grass meadows and left waters high, dark, and turbid—poor growing conditions.

Eelgrass has struggled to regain its foothold. As shoots emerge, they're besieged by grazers such as manatees and turtles. One study showed grass was 90% shorter and covered 90% less area than pre-Irma levels. Some parts of the St. Johns River have seen a 99% loss.

Now, a team of unlikely allies has

undertaken a locally-run campaign to jump-start the river's eelgrass recovery by building fenced enclosures, temporarily keeping grazers out of select locations to allow meadows to replenish themselves.

"This river is circling the drain unless someone steps up," says bass fisherman Tim Mann, who recruits anglers to assist FWC's enclosure builds. "We have got to get enough fence to take the pressure off the rest of the river."

Leading the enclosure efforts is Dan Kolterman, an aquatic habitat restoration biologist with the FWC. Kolterman is building on his success with boosting eelgrass in Lake George where he started experimenting with enclosures in 2020. Not only did the eelgrass seedlings FWC planted inside the wire fences flourish, but volunteer plants—widgeon grass, southern naiad, Lake George eelgrass, pondweed, and yellow water lily—took root among the new meadows.

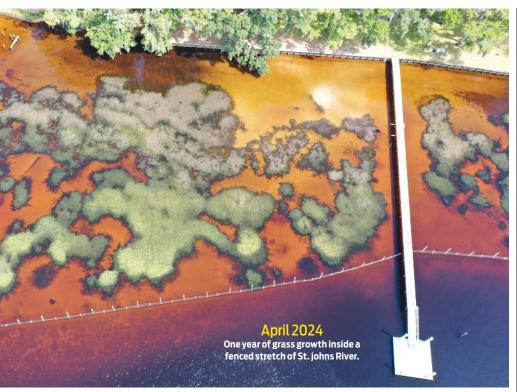
Kolterman also found that grass grew within the enclosures without any planting. Protection from grazers allowed the remaining seeds and rhizomes in the riverbed to skyrocket.

Mann noticed. He had attributed the eelgrass declines to herbicide spraying by the Army Corps of Engineers. But when he saw the Lake George enclosures topped out with eelgrass, "I was a believer. If you look out past the fence, it's a desert." He began assisting Kolterman's team in building and maintaining enclosures and invited other anglers to do the same.

Knee-deep in the river at Bayard Point,

Temporary enclosures keep grazers out to allow

eelgrass meadows to replenish themselves





Aerial photos by B.A.S.S. Others by Natalie van Hoose

Mann points out grazers' bite marks on the stubby shoots on a wisp of eelgrass. Predators can easily pick off small bass in such short, sparse grass, threatening the future of the fishery. "The big fish are not being replenished," Mann says. "We're going to lose our population."

A few feet away, St. Johns Riverkeeper Lisa Rinaman and an angler work from opposite sides of the fence to zip-tie the mesh to a post. The environmental non-profit and local fishermen don't always see eye-to-eye. St. Johns Riverkeeper advocates for the removal of the George Kirkpatrick Dam from the Ocklawaha River to restore its natural flow, which would wipe out the Rodman Reservoir, a

prized bass fishing destination.

But the enclosures have brought a new level of cooperation between the groups. "When you're out building a fence together, you really get to know people and understand our individual connections to the river, but also our common interest in making sure the St. Johns River is as healthy as it can be," Rinaman says.

Within a few hours, a new 6-foot-tall enclosure encircles 3.5 acres of water—the final build of the season. In about six weeks, the group has set up 14,000 feet of fencing in the lower St. Johns River. Now, 12 enclosures keep guard from Palatka to Green Cove Springs, with another seven in Lake George for a total

of 150 acres. Kolterman estimates that volunteer labor from anglers has cut construction costs by more than 50%.

FWC's goal is to fence more than 900 acres between 2024 and 2027. The hope is that the temporary enclosures will give grass a chance to return to levels that can handle grazing.

"In a way, we're building fences to feed these critters," Mann says. "We're trying to help Mother Nature."

EELGRASS 'FELL OFF A CLIFF TO ZERO'

Snaking 310 miles from Blue Cypress Lake to Jacksonville, the St. Johns is Florida's longest river and one of the few rivers globally that flows from south to north. Its waters are famous for trophy largemouth bass, crappie, bluegill, shiner, and blue crabs. One study estimated Florida residents' recreation in the river basin adds an annual \$209 million to the economy, while another credits the river with providing billions of dollars in flood production and nutrient pollution removal.

Eelgrass, also known as tape grass or wild celery, is the foundation of that wealth. (Although eelgrass shares its name with a kind of seagrass, it's actually a freshwater plant, Vallisneria americana.) For decades, eelgrass meadows had been fairly constant in the St. Johns River, with blades reaching five feet in length, said seagrass scientist Bob Virnstein.

"This place was nothing but eelgrass. It would come and go," said lifelong Putnam County resident and angler Chris Cercy.

Ben Williams, a former commercial fisherman who grew up fishing the St. Johns and lives in Fruit Cove, recalls yearly fluctuations in grass and occasional die-backs after storms or droughts. But after one or two years, "it would come back with a vengeance," Williams said.

Then in 2017, "it fell off a cliff to zero," Virnstein said. Hurricane Irma pounded Palatka with 19 inches of rain and sent three-foot waves rolling over Virnstein's dock. Williams said the downpour was so severe that armadillos and snakes drowned in the woods.

Eelgrass is a prolific seeder, and seedlings began to emerge in 2019, but the meadows still failed to make the kind of comeback Williams had seen in the past. Why?

As Kolterman said in a 2022 presentation, "There's a lot of hungry mouths in the river."

Kolterman's underwater GoPro captured cooters mowing down blades



The St. Johns was losing guides and tourna**ments**. As Lisa Rinaman puts it, "If you don't have grass, you don't have bass."

of eelgrass and invasive tilapia uprooting seedlings to strip them of algae. Williams said the number of turtles, catfish, tilapia, and invasive armored catfish have increased in the river, putting pressure on emerging grass. An uptick in alligator hunting may be driving up turtle populations, he said, a view echoed by Virnstein and Cercy.

Ray Bunton, a retired land acquisition specialist from the St. Johns River Water Management District (SJRWMD), said he has seen manatees grazing on half-inch-

Other potential grass-eaters include mullet, pinfish, and blue crabs.

Combined with sustained high waters, "you've got potentially a multiplicity of stressors that are holding things back," Williams said.

NOGRASS MEANS NOBASS

Local fishing has suffered as a result. As Rinaman put it, "if you don't have grass, you don't have bass."

Eelgrass serves as a bass nursery and concentrates fish in small areas, allowing anglers to work the grass beds with lures during spawning. Without those meadows, bass are now congregating around structures such as docks, debris, ledges, and lily pads.

Locals are adapting accordingly and using sonar to fish deeper waters. Out-of-towners, however, no longer know where to find fish. Mann spoke with a Kentucky angler who spent a week fishing the Bass Capital of the World only to land a lone 10-incher.

"It's very frustrating for new people to come here and figure out where these changes are and how to fish them,"

Kolterman said.

FWC surveys showed a dramatic drop over the past four years in how many largemouth bass anglers caught per minute in Lake George, with 2023 being particularly rough. Electrofishing surveys also turned up fewer bass throughout the river and Lakes George and Monroe, Kolterman said.

Local guide Scooter Goodson has to move more frequently to find fish. "If you catch an 8-pounder, it's like catching a 12-pounder used to be," he said. "Five years ago, you could catch a 30-pound-plus limit in this enclosure [at Bayard Point]. You can't do that anymore."

At a mid-April Bassmaster Elite tournament, many bags weighed in at just 8 pounds, Mann said. "It's just a tough fishery right now."

LOCALS PUT MONEY. **SWEAT TOWARD** GRASS RECOVERY

After the success of the Lake George enclosures, Kolterman approached the **Putnam County Commission** in November 2022 with a pitch: to put fences in the lower St. Johns River using a portion of the county's Fishing Improvement Fund,

which is sustained through local fishing license sales

Kolterman clicked through photos and data demonstrating the grass revival in the lake and highlighted the volunteer labor contributed by concerned anglers. The St. Johns was losing guides and tournaments as a result of the grass declines, he said, and the cache of remaining seeds wouldn't stay viable forever. If grazers mowed down eelgrass before it could produce the next batch, the local seed bank was at risk of being pushed past a tipping point.

"If we don't act soon and we don't act together. I don't think we're going to see the grasses return," Kolterman said.

Retired SJRWMD biologist and Palatka resident David Girardin watched in frustration as the board shot Kolterman's proposal down. So, Girardin came up with his own plan. He would pay for wire mesh out of his own pocket and round up a few homeowners willing to host an experimental enclosure on their waterfront if FWC could supply the rest









of the equipment and labor.

I joined Girardin and homeowner Ray Bunton to see the end result: a 2.6-acre enclosure at Dancy Point lush with eelgrass, some of it three-feet long. The fencing was constructed in February 2023, with the help of Mann and his angler recruits. Bunton estimates eelgrass now covers 60% of the area-all volunteer plants.

"To see [the river] change so radically has been troublesome," Bunton said. "It's been very satisfying to watch how something as simple as fencing works."

Under a noon sun, we watched as schools of finger mullet cruised between long, undulating ribbons of eelgrass. A blue crab scuttled into the shadows. Bunton said the enclosure is loaded with grass shrimp and draws osprey, herons, and anhinga. The eelgrass recently blossomed, and he was hopeful seeds would float outside the enclosure and take root in the stretches of bare sand on the other side.

"We had no idea how this would

Clockwise from above: Lisa Rinaman helps secure new fence at Bayard Point; Tim Mann holds fragments of eelgrass clipped short by grazers; map of area where 19 enclosures now exist; Dan Kolterman (L) and local angler Phil Baker hold sign for new enclosure.

work," Girardin said. "It was purely an experiment, and it's just taken off."

GROWING INTO THE FUTURE

The Dancy Point fence proved enclosures could work in the St. Johns River and served as a model for the others FWC. St. Johns Riverkeeper, and volunteers erected in the lower St. Johns this year. Rinaman's team collects data on the grass, salinity, temperature, and other factors at the sites to better understand stressors that may limit eelgrass growth.

More enclosures could be on the horizon. The Riverkeeper is co-permitting additional structures on its sites, and Girardin awaits permits to help

other interested homeowners construct fencing on their waterfront. Kolterman is working to secure funding to continue FWC's enclosure efforts.

Lake George habitat restoration will also benefit from a recent \$200,000 donation from the Bass Pro Shops/Cabelas Outdoor Fund, with a \$200,000 match from company founder Johnny Morris.

A key question remains: What happens when the fences comes down?

Bunton joked it might be like the buffet at Golden Corral. Turtles already patrol the perimeter of his enclosure, looking for mouthfuls of eelgrass they can reach through the mesh.

Scientists haven't pinpointed the threshold that grass recovery in the St. Johns River needs to reach to sustain grazing pressure. "Whether it's 500 acres or 5,000 acres... I don't think anybody knows." Virnstein said.

There are no hard-and-fast rules for how to restore a river, Kolterman said. "We're essentially writing the book on this as we go." FS