save

Crystal River

RESTORE OUR WATERS

Eliminate

Maintain

Kings Bay Restoration Project
For Outstanding Florida Waters
ANNUAL REPORT
2018–2019

REMOVE•RESTORE•MAINTAIN•PREVENT

What Happened to the Water in Kings Bay?

During the 1993 "No-Name" storm, salt water killed acres of invasive *hydrilla* that was choking the bay. But, when it died and fell to the bottom, it completely covered the native grasses. The dead material decayed and bacterial decomposition created a low oxygen environment. This was the perfect condition for the invasive blue-green algae called *Lyngbya* to invade and quickly cover the river bottom with its slimy filaments and prevent the native grasses from returning.

Toxic Blue-Green Algae Suffocates Kings Bay

You may not recognize the name *"Lyngbya"*, but if you swim, boat, or watch manatees in Kings Bay you know what it looks and feels like. *Lyngbya* looks and feels like dark, slimy, strands of hair that seem to grow from canal bottoms and get tangled in long, floating mats.

Lyngbya, pronounced "Ling-bee-ah", isn't a plant at all ... it's an invasive blue-green algae that thrives in low-light conditions and has been darkening our waters. Besides the look and feel – there are many more reasons to be concerned about it:

- *Lyngbya* mats are clogging the springs which reduces fresh spring water from flowing into Crystal River allowing salt water intrusion.
- Native plants and eelgrasses cannot grow because *Lyngbya* is blocking sunlight. Even underwater plants need light to grow.
- Manatees, turtles and other animals are suffering as *Lyngbya* kills off the native eelgrasses.
- *Lyngbya* causes skin irritations, eye infections, and breathing problems to some swimmers.
- For manatees and pets, it's worse: *Lyngbya* is **TOXIC** if eaten!

So what does all of this mean? We must clean up the suffocated, toxic canals. Our economy and our quality of life depend on our waterways.

Restoring the Bay

Lyngbya is vacuumed from the bottom of the bay and is mechanically separated from other suspended material. The remaining liquids are filtered through Geotube bags where a polymer mixture is added to facilitate removal of nearly 100% of the phosphorus and about 50% of the nitrogen from the water. Clean water is filtered through tiny mesh holes and is returned to the river.

How Does Native Eelgrass Help Solve this Problem?

Once the *Lyngbya* and dead detrital material is vacuumed from the bottom of a restoration area, a native variety of eelgrass called "Rock Star" is planted in the clean sand.

Rock Star Eelgrass plants are planted in small groups and covered by cages to protect them from predators until their roots become established. The plants will grow up to 7 feet in all directions. The roots intertwine to secure eelgrass in the soil. Areas that are too shallow for the use of cages are planted using a specially developed pelletized plant with a patented vessel called a Jeb Boat.

Once the planted eelgrass begins to flourish, the habitat begins to change:

The eelgrass produces large quantities of oxygen into the water which is needed by aquatic animals.

Oxygenated water inhibits *Lyngbya* growth because *Lyngbya* can't survive in high oxygen conditions.

Eelgrass outcompletes *Lyngbya* for nutrients in the water taking up nitrogen and phosphorus – improving water quality.

Native grasses provide food and shelter for thousands of aquatic organisms.

Once roots are established and interwoven, it is difficult for herbivores to damage and remove the grass beds. The result is a meadow of beautiful, undulating grass that creates a healthy habitat in the clear, clean water.

Environmental Asset

Kings Bay comprises more than 600 acres and is fed by 70 larger identified springs – the second-largest group of springs in Florida. The Kings Bay Restoration Project has increased the number of spring outflows by unclogging over 372 spring vents as of January 2019! Fresh groundwater flow has increased from the spring vents into Kings Bay. This increase of spring water helps to drive out the algae blooms.

Crystal River has been named an Outstanding Florida Waterway and supplies critical fresh water to St. Martins Marsh, one of the principal seagrass beds and estuaries in the state. The Kings Bay Restoration Project reduces nutrient runoff pressure on St. Martins Marsh, the National Wildlife Refuge and the Outstanding Florida Waterway by improving the water quality upstream. The eelgrass plants from the Kings Bay Restoration Project uptake nutrients which improves water quality.

Without oxygen there is no life; without plants there is no oxygen.

- Candy Murphy

Partnerships in Protecting Kings Bay

When it rains where does the water go? Answer: Into Kings Bay!

Have you ever wondered where the rain goes when it falls on to the ground? If you live on the waterways and canals of Kings Bay, then the stormwater will run directly off your lawns and into the water without proper landscaping design. Even if you don't live directly on the waterways, stormwater runoff eventually ends up in the Bay. The important part that we can control as good stewards of the environment is to control the water quality of this stormwater runoff.

If you live near Crystal River, FL, then you live in the Kings Bay springshed. A springshed is the surrounding land areas and underground flows of water that contribute to the springs. These areas are often much larger than the land immediately surrounding the spring. In some cases, a springshed can extend hundreds of square miles across multiple counties. As water in the springshed makes its way to the spring, it picks up and carries pollutants degrading the quality of the aquifer and much of Florida's fresh drinking water. We must all actively seek to control the water quality of stormwater runoff as that drastically effects the water quality of Kings Bay!

Fact:

Globally, an area of seagrass the size of two football fields is lost every hour. This devastates our oceans and lessens their ability to support our fisheries and fight climate change.

Map of Kings Bay Springshed

Fact:

One acre of seagrass can absorb 3,500 miles worth of carbon emitted by an average car each year.

PARTNERSHIPS IN PROTECTING Kings Bay

PARTNERSHIPS IN PROTECTING Kings Bay

High nitrogen and phosphorus levels cause algae blooms including *Lyngbya* in the Bay. Nitrate levels in Kings Bay and Hunter Springs are tracked by SWFMD. Pictured right, we see that nitrate levels have been trending upwards over the past decade. About 15% of nitrate loading into Kings Bay is attributed to urban fertilizer (Draft FDEP, 2017). Typically, lawns don't need fertilizer. Water quality of stormwater runoff can be actively improved by all of us taking small steps. By planting acres of eelgrass, the Kings Bay Restoration Project is working to reverse this trend.

Steps to improving water quality in Kings Bay:

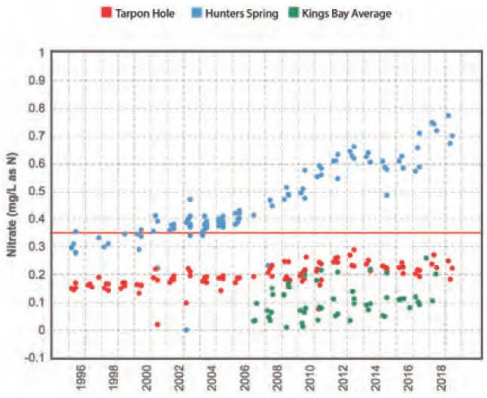
- Understand that stormwater runoff on your front and back lawns will eventually end up in Kings Bay. Treat both lawns the same.
- Don't fertilize your lawns. The nitrogen and phosphorus that will runoff in the stormwater can fuel the growth of algae blooms (ie *Lyngbya*), which creates low-oxygen dead zones that suffocate marine life. Algae blooms also reduce the sunlight that is needed by the underwater grasses.
- Pick up pet waste on both your front and back yards. This waste contributes to algae blooms as well.
- Eliminate any pesticides, leaking fuel or motor oil and other chemical contaminants that can be picked up by stormwater runoff that will go into the Bay.

Nitrate Concentration

Tarpon Hole: 0.22 mg/L (11/6/2017)

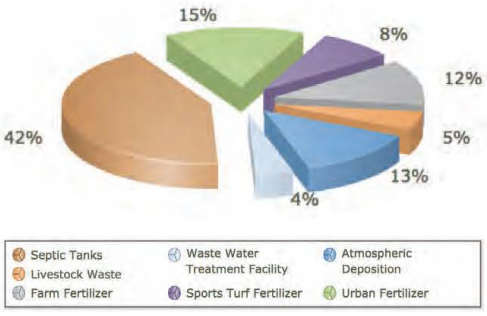
Hunter Spring: 0.72 mg/L (11/6/2017)

Kings Bay Average: 0.20 mg/L (1/23/2017)



Data source: SWFWMD

Nitrate Loading



Data source: Draft FDEP, 2017

Fact: One acre of seagrass can support 40,000 fish and 50,000,000 invertebrates.

Our community is collectively focused on this restoration effort for the future generations. From top to bottom, east to west, north to south, we're working in neighborhoods and in our own homes and businesses to make sure that our resources are restored and protected.

A Snapshot of what has been done for the economic future of Crystal River:

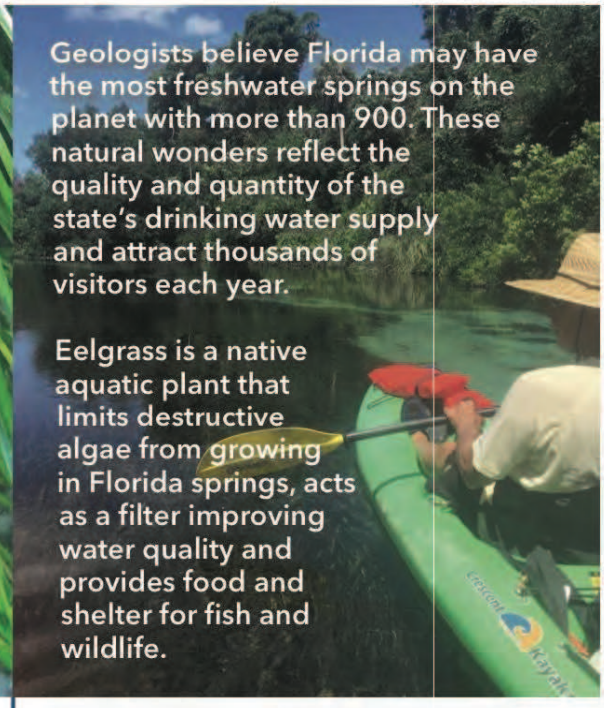
- Citrus County Commissioners passed a stronger fertilizer ordinance.
- City of Crystal River has eliminated septic tanks along waterfront properties & installed a central sewer system throughout the city.
- Stormwater projects have helped control run-off into the bay.
- A pipeline from the City of Crystal River water treatment and re-use project will transport wastewater to Duke Energy to eliminate pumping thousands of gallons of water every day from the aquifer.
- New construction laws require homeowners to build swales preventing yard debris and runoff from discharging directly into the river.
- Dive shop owners are putting aquariums of eelgrass in their businesses to help educate the public about the restoration project.

The Community Gets Involved

A man, a kayak, and a rake. This evolved into the "One Rake at a Time" project, which eventually evolved into a community service project led by Save Crystal River.

Today, the popular project continues attracting hundreds of students, visitors and local volunteers to remove *Lyngbya* from Kings Bay. Volunteers fill barges and kayaks with the algae, which is taken to shore and removed by truck.

Do Your Part to Support Eelgrass Beds in Florida Waterways



Geologists believe Florida may have the most freshwater springs on the planet with more than 900. These natural wonders reflect the quality and quantity of the state's drinking water supply and attract thousands of visitors each year.

Eelgrass is a native aquatic plant that limits destructive algae from growing in Florida springs, acts as a filter improving water quality and provides food and shelter for fish and wildlife.

save Crystal River

SCR, Inc. a 501 (c)(3), is a coalition and partnership of friends and neighbors, parents, retirees, career professionals, business owners, residents and community leaders who are united by their commitment to maintain and protect the unique quality of life for all people in communities of Crystal River and Citrus County. Tourism and fishing provide billions of dollars of economic impact to the areas annually, and must be protected for future generations. To learn more, visit www.savecrystalriver.com.

DUKE ENERGY®

Helping to restore Florida's natural springs is an essential component of Duke Energy's environmental stewardship. Duke Energy's Crystal River Mariculture Center is a two-story, 8,100 square-foot multi-species hatchery that cultivates and releases approximately 100,000 fish fingerlings, including redfish, pigfish, pinfish and spotted seatrout, into the Gulf of Mexico each year. In 2014, Mariculture Center staff started growing eelgrass in ponds and other locations at the center through a partnership with the Southwest Florida Water Management District. **To learn more, visit www.duke-energy.com/environment.**

DON'T POLLUTE FLOWS TO WATERWAYS

Fact:
One acre of seagrass can generate $35,000 in ecological services every year.

Kings Bay Restoration a Scientific Success — Again!

Every year, Save Crystal River commissions scientists to study how well our Kings Bay Restoration methods work. An independent science firm is used because it guarantees those paying for the restoration know their money is well spent. The Kings Bay Restoration Project is working. This article explains the project, telling how a group of citizens has managed to transform over 23 acres from stinky muck with virtually no plants or animals into a thriving, healthy ecosystem once again.

What is the Kings Bay Restoration Project?

The Kings Bay Restoration Project's ambitious goal is to restore over 92 acres of King's Bay, a fresh water inland bay in Citrus County, FL. The bay is fed by the Floridian Aquifer, and is a vital spring-shed. Save Crystal River (a 501(c)(3) nonprofit of local concerned citizens) created this project. As of January 2019, over 10 Million Dollars has been invested to restoring this damaged ecosystem, and the restoration is working. This area is called Crystal River for a reason. It was once crystal clear and filled with native eelgrass and wildlife. However, invasive species, declining water quality, increased nutrients, runoff, and an out of control filamentous algae called *Lyngbya*, have all done incredible damage to this bay.

Yet the Restoration Project shows that this damage can be reversed. This study shows just how well these restored habitats are doing. The Kings Bay Restoration Project is about 25% complete, and finished its fourth year of restoration in November 2018. The Project removed over 161,000,000 (161 Million!) pounds of muck from the bottom of just over 23 acres of waterways!! That is a LOT of muck. Those 23 acres have now been replanted with eelgrass and have been caged providing protection for a year. Each year those eelgrass meadows grow more dense and spread further downstream.

Where is Kings Bay?

Kings Bay is at the head water of Crystal River. The river runs westward, and after about four miles discharges into the Gulf of Mexico. The entire river suffers from a lack of healthy habitat. The factors mentioned earlier lead to the decimation of the eelgrass and an increase in algae. These high volume springs serve as a crucial winter refuge for the federally- threatened manatee. The loss of vegitation directly impacts these migratory sea mammals. With no local food source, manatees must travel out into the Gulf to graze.

Source: US Fish and Wildlife

By planting acres of eelgrass, we increase the amount of local food available to these amazing animals. By planting around the bay, we reduce grazing pressure on any one patch of grass when the manatees winter over at the springs. During the summer months most of the manatees migrate south. With fewer manatees present, there is plenty of grass to go around! But there still isn't enough grass to support our increasing wintertime population of manatees. Yet with every year of planting, we gain acres and acres more of this valuable food source for wintering manatees. And even though it looks like they eat all the grass in the winter, the roots remain, and the eelgrass returns in the spring.

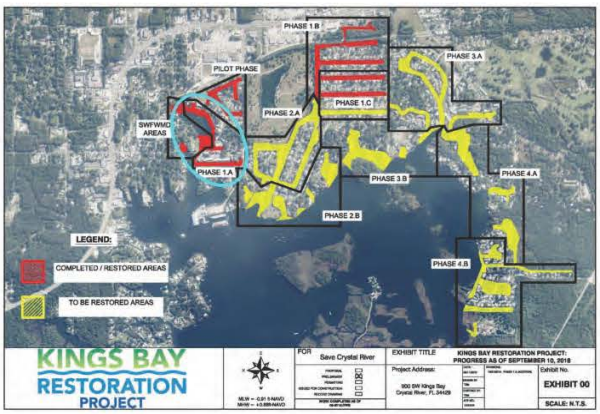
Hot Off the Presses: 2018 Study Results

Johnson Engineering, an independent leader in environmental research, completed their 2018 biologival assessment of the Kings Bay Restoration Project. At the end of each restoration season, we ask these scientists to research how this project is doing. Their previous 2017 study compared an unrestored canal to a restored canal. This study helpd us understand the difference between these two different habitat types. They found a huge difference in the critters – with a much higher number of species living in the restored areas. Keep reading to learn what they studied in 2018 and how they measure success.

How do you measure success in an ecosystem?

This year, Johnson Engineering studied our restored areas at two different seasons. The two seasons studied helps us understand how wildlife uses these areas differently across the year. They took samples in May when many species slowly start returning to spawn, and again in October when the eelgrass is at its peak in the growing season. The area labeled "Phase 1A" on the first map was studied. It is located in the canals surrounding Hunters Spring.

See the highlighted area on the map



The assessment's goal: identify aquatic faunal communities (fishes and macro-invertebrates such as snails, worms, insects, and other creatures). In addition, eelgrass was measured in randomly selected areas. These ongoing studies track the long term progress of the Kings Bay Restoration Project. The studies verify the success of project efforts, and to identify which species are the most useful indicators when measuring success.

SCIENTIFIC SUCCESS

Scientists used several methods to sample the Bay's organisms. They scooped samples of the bay bottom (muck), and used various traps and nets to collect fishes and small animals. They even used artificial habitats that attract various small critters. Studying samples collected different ways allows for the widest variety of habitat types to be analyzed. These methods ensure we get the largest sample of the different species present. Some macro-invertebrates like worms, bury in the mud so only scooping a sample off the bottom will find them. Traps and nets catch fish an aquatic insects. Samples taken generated over 42 different species in the newly restored area! We know from a previous Johnson Engineering report that compared to an unrestored canal to a restored canal, that there are far fewer species present in the unrestored areas. The level of species diversity tells us if we have a healthy ecosystem.

Hyalella azteca is an important indicator of a healthy ecosystem. One of the most important species for differentiating an unrestored area from a restored area is the amphipod crustacean called *Hyalella azteca*. This creature is an important prey item for many fish and birds. It is only present in our cleaned and replanted canals. Additionally, there were 12 other species that area also good indicators of restoration success. Knowing which species are the most important for measuring success makes it easier to conduct targeted studies in the future. We are planning to monitor the health of Kings Bay long term!

One fish, two fish tell a success story...

Fish species also show increasing numbers and diversity in the restored areas, an excellent indicator of a healthy ecosystem. Sport fish, such as largemouth bass and sunfishes, are becoming more abundant now that they have suitable nesting areas (clean white sand and meadows of eelgrass as opposed to muck and *Lyngbya* (filamentous blue-green algae). Species of bluegill, redear and spotted sunfish, and hogchokers were also found, which are positive indicators of a thriving ecosystem. Readear sunfish are also known as shellcrackers because they feed on snails. So their presence means there is also a healthy snail population nearby too.

Dense meadow of flowering eelgrass plants (the flowers are the spiral stalks that reach up into the water surface)

How Rock Star Eelgrass got its Name

Scientists measured the eelgrass in May and again in October and showed that in Phase 1A the plants expanded from 12% coverage to 35% coverage. Which isn't bad for the first year of growth. They also took a look at the pilot project again (see "Pilot Phase") in the map on page 7), after several years of growth. Eelgrass coverage increased from 35% to 89% in this area! (You can see how much the Pilot Project has matured since the last report). This shows it just takes some time for the grass to fully cover canal bottoms. Much like re-seeding your lawn, it can take a few years for the turf grass to fully fill in and look great.

This eelgrass survived quite well despite continual grazing from our summertime manatee population. In fact, light grazing is good for the plants because it encourages them to expend their energy making new plants rather than growing tall. This means our summer manatees help encourage the grass to spread faster.

A Scientific Success

This year's biological assessment is another glowing report on the success of the Kings Bay Restoration Project and each year these restored areas get better and better. The eelgrass fills in more and more and the fish and wildlife continue to return. More native species are returning, and the diversity of wildlife is increasing. Eelgrass is thriving and flowering, and every indicator is that this is a healthy, functioning ecosystem once again! We can't wait to see what the next four years of restoration brings to the Kings Bay ecosystem.

Want to learn more about how to support our efforts?

Visit **www.SaveCrystalRiver.com** for more information about ways to make a difference!

Fact:

One acre of seagrass can absorb enough nutrients to treat the amount of sewage created by 100 people annually.

Eelgrass Event with Duke Energy

Duke Energy is continuing its support of clean coastal water. They have partnered with Save Crystal River on events that educate and engage the public. During these events, volunteers taught students how to harvest, grow and plant Rock Star eelgrass that was grown at the Duke Energy Mariculture Center.

The day begins with the students being educated on the benefits of planting eelgrass. The students planted eelgrass with the assistance of volunteers from the USFWS, a local dive instructor and Douglas Dodd, a member of the Citrus County School Board, and Save Crystal River.

After the eelgrass is planted it is covered by the protective cages allowing the grass time to take root. This sign is visible from the boardwalk at Hunter Springs Park so visitors can also become familiar with the student project.

In addition to planting eelgrass, the students are educated about the effects boat propellers can have on our river and planted Eelgrass beds.

The planting day activities also consisted of the students using the virtual reality goggles to view eelgrass growing from previous planting days.

Primary School EcoWeek

During the 2017-18 school year, Save Crystal River again partnered with Duke Energy to grow Rock Star eelgrass in every classroom at Crystal River Primary school as part of the National Wildlife Federation's EcoSchools USA Award Program.

Save Crystal River Executive Director, Michelle Sivilich demonstrates the Pasco Water Sensor for the Crystal River Primary School students.

Duke Energy and Save Crystal River take part in the morning show at Crystal River Primary School

Educating Future Generations

Since 2015, Save Crystal River has worked with Crystal River Primary Teachers and Students to become environmental stewards of Kings Bay!

For the past two years, students have watched eelgrass grow and learned how to plant it in Hunter Springs. Now, other children can have the same joy and engagement when teachers use the Rock Star Eelgrass Curriculum. The Rock Star Eelgrass Curriculum is designed to guide Florida elementary schools to become stewards of their natural resources. Students participate in lessons that focus on environmental impacts. They grow Rock Star Eelgrass (or other native submerged aquatic vegetation) in their classrooms and engage in hands-on activities. These lessons can be replicated in other schools in Citrus County and other counties across the state.

Below is an example of the Kindergarten Curriculum:

Lesson Title: Rock Star Eelgrass Farm	
Grade Level: K	Life Science
SC.K.N.1.1	Collaborate with a partner to collect information.
SC.K.N.1.2	Make observations of the natural world and know that they are descriptors collected using the five senses.
SC.K.N.1.3	Keep records, as appropriate, - such as pictorial RECORDS - of investigations conducted.
SC.K.N.1.4	Observe and create a visual representation of an object which includes its major features.
SC.K.N.1.5	Recognize that learning can come from careful observation.
SC.K.L.14.3	Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.
SC.K.P.8.1	Sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light), and texture.

This curriculum began as a collaborative effort between Duke Energy, Crystal River Primary, and Save Crystal River. In 2017, a grant provided by the Duke Energy Foundation allowed for every class at the primary school to plant and grow a tank of Rock Star Eelgrass. This helped to incorporate the hands-on science experience into all aspects of their curriculum from math, to biology, to art class. The students at Crystal River Primary have benefited from the collaboration between school and community members. Save Crystal River has lead efforts to engage students in ways that they can make a difference in local waters. Duke Energy has supported the Rock Star Eelgrass Program by funding projects at the school. Save Crystal River and Duke Energy have joined the students in planting Rock Star Eelgrass in every classroom aquarium (i.e. eelgrass farms).

Community Connection

Save Crystal River was honored to be named the Grand Marshall at the Crystal River Annual Christmas Parade on December 1, 2018. Pictured below are members of Save Crystal River along with some students from Crystal River Primary School.

Fact:

One acre of seagrass can produce 50,000 liters of oxygen per day.

Michelle Sivilich presented information regarding our restoration project to participants at the Womens Health and Wellness Expo in Crystal River. We also took part in providing hot dogs and other snacks for the event.

SCR was also present at the Crystal River Manatee Festival which draws thousands of visitors to the area each year.

SUPPORT

Local & State Support

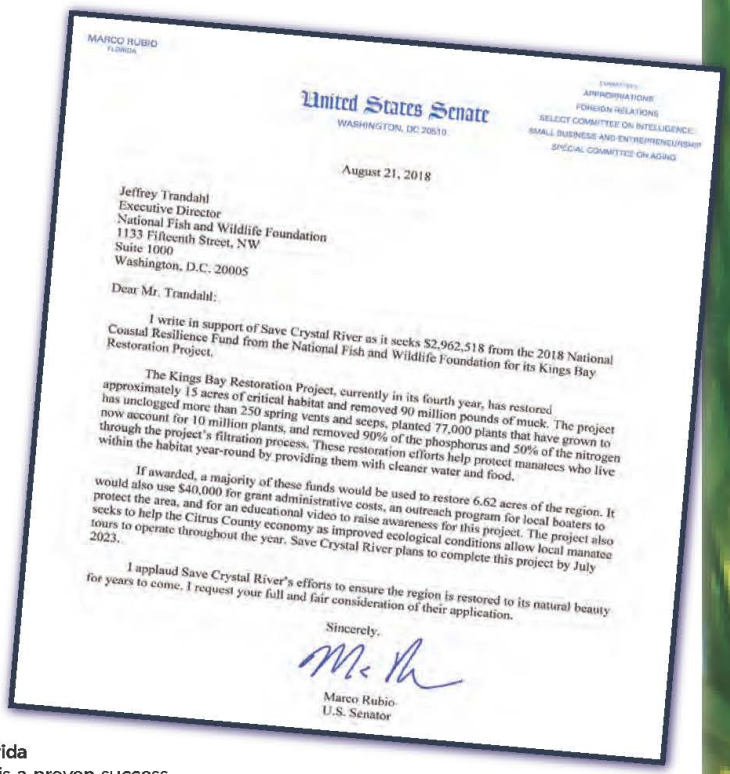
On January 23, 2018, Save Crystal River had the opportunity to join fellow Citrus County Citizens for Legislative Days in Tallahassee, Florida. SCR representatives were able to share the great improvements we have been making with our restoration project with our states government officials.

Pictured above from left to right: SCR representatives Marie Bienkowski, Susan Wells, Michelle Sivilich, Steve Lamb, Adam Putnam, Former Commissioner of Agriculture, Lisa Moore, Lisa Vandeboe, Joanne Copp, Lisa Stearns.

Pictured above from left to right: SCR representatives Joann Coop, Marie Bienkowski, Carter Henne, Michelle Sivilich, Lisa Moore, Ralph Massullo Jr., District 34 House Representative, Steve Lamb, Lisa Stearns, Lisa Vandeboe, Susan Wells.

Joe Meek, Mayor, City of Crystal River, Florida
Save Crystal River's work is a cross between heavy construction and aquaculture. It's amazing what they are achieving and the difference it makes to our community.

Jeff Kinnard, D.C. Citrus County Commissioner, Florida
This process of vacuum, clean, plant, and protect is a proven success. The return of grass beds, many species of fish, and the lyngbya-free oxygenated water that attracts them, is an environment that will yield dividends for Citrus County and its residents for decades to come.



MARCO RUBIO
FLORIDA

United States Senate
WASHINGTON, DC 20510

COMMITTEES:
APPROPRIATIONS
FOREIGN RELATIONS
SELECT COMMITTEE ON INTELLIGENCE
SMALL BUSINESS AND ENTREPRENEURSHIP
SPECIAL COMMITTEE ON AGING

August 21, 2018

Jeffrey Trandahl
Executive Director
National Fish and Wildlife Foundation
1133 Fifteenth Street, NW
Suite 1000
Washington, D.C. 20005

Dear Mr. Trandahl:

I write in support of Save Crystal River as it seeks $2,962,518 from the 2018 National Coastal Resilience Fund from the National Fish and Wildlife Foundation for its Kings Bay Restoration Project.

The Kings Bay Restoration Project, currently in its fourth year, has restored approximately 15 acres of critical habitat and removed 90 million pounds of muck. The project has unclogged more than 250 spring vents and seeps, planted 77,000 plants that have grown to now account for 10 million plants, and removed 90% of the phosphorus and 50% of the nitrogen through the project's filtration process. These restoration efforts help protect manatees who live within the habitat year-round by providing them with cleaner water and food.

If awarded, a majority of these funds would be used to restore 6.62 acres of the region. It would also use $40,000 for grant administrative costs, an outreach program for local boaters to protect the area, and for an educational video to raise awareness for this project. The project also seeks to help the Citrus County economy as improved ecological conditions allow local manatee tours to operate throughout the year. Save Crystal River plans to complete this project by July 2023.

I applaud Save Crystal River's efforts to ensure the region is restored to its natural beauty for years to come. I request your full and fair consideration of their application.

Sincerely,

Marco Rubio
U.S. Senator

In the NEWS

Second annual 'Be a Rock Star! Grow Eelgrass' event was success

Dr. Michelle Sivilich/Executive director, Save Crystal River May 29, 2018

Doug Dodd of the Citrus County School Board and Marie Bienkowski of SCR plants grass with the fifth-grade class from Crystal River Primary School. Special to the Chronicle

Save Crystal River (SCR) partnered with Duke Energy and the Crystal River Primary School on a year-long science endeavor that culminated in a field trip for the fifth-grade class to Hunter Springs Park to plant eelgrass on May 18.

For the past two years, Save Crystal River has received grant money from Duke Energy which allows every classroom in the school to grow a tank of rockstar eelgrass, which is then incorporated into lessons about science, ecosystems, biology and even the art classes doing eelgrass-related projects. This project started back in December when the school celebrated EcoWeek and SCR helped every student in the school plant a rockstar eelgrass plant, donated by the Duke Energy Mariculture Center, in their classroom tank.

SCR also assisted with a variety of educational activities that discussed the ecosystem and the importance of eelgrass throughout EcoWeek. The Duke Grant and a Splash Grant from the Southwest Florida Water Management District allowed for technology to be purchased to be used in conjunction with this project.

This year, Save Crystal River was able to purchase a 360-degree underwater camera and virtual reality goggles to allow students to experience the eelgrass in its natural habitat, as well as water quality sensors and a weather station that provides data on the water in King's Bay. This allows students to make comparisons about what they see in their rockstar eelgrass tanks to what is happening in the real world. This year, Save Crystal River also helped to take the second grade on a boat tour around King's Bay so students could experience this vital habitat firsthand.

Students learned what damage dragging an anchor across the eelgrass meadows can do and how some are more damaging than others. Special to the Chronicle

Students are so excited to learn about rockstar eelgrass that they, and their teacher Brian Hengesbach, have written songs about the eelgrass. Additionally, several students have done their science fair project on eelgrass.

This is one of Save Crystal River's favorite activities of the year — seeing the students get excited to help the environment while learning at the same time is priceless. Teaching the next generation of environmental stewards is one of our goals and we even hired Friends with Fins to film an episode about the Kings Bay Restoration Project that is geared toward children and is available on the website at www.kingsbayrestorationproject.com/the-education.

For more pictures and videos, visit the Facebook page: Save Crystal River-The Crystal River, communities, and our manatees.

Save Crystal River has caught the attention of local media. See the news articles that were published in the Citrus County Chronicle documenting our community activities.

Students plant eelgrass during Eco-Week

Julie Gorham Dec 14, 2017 Updated 15 hrs ago

Duke Energy's Crystal River Mariculture Center hatchery technician Justin Branch aids Crystal River Primary School kindergartener Jasmine Kennedy, 5, as she plants Rock Star eelgrass Thursday morning. Matthew Beck

Crystal River Primary School students screeched out loud while planting Rock Star eelgrass on Thursday while celebrating the second annual Eco-Week.

"It's so cold," said kindergartener Chastene Davis. "But it's fun."

As primary school students of every grade level made a procession onto the school's athletic field on Thursday, they couldn't contain their excitement to see Duke Energy and Save Crystal River Inc. representatives there to help plant 1,200 Rock Star eelgrass plants.

Over the course of Eco-Week, which began Monday, students heard all about water quality initiatives through members of Save Crystal River (SCR), who talked about the problem of Lyngbya algae in local waterways. Rock Star eelgrass is known to help purify waters in nature and combat nuissance Lyngbya.

SCR member Marie Bienkowski noted this is the second Eco-Week, and it is the second time that Duke has brought 1,200 plants for students to plant in the classroom. Each plant is valued at $4.99; 1,200 of them makes for a generous donation from the Duke Energy Mariculture Center, north of Crystal River. Duke has put its support behind Save Crystal River Inc., providing a $10,000 grant.

"This year the grant is buying a 360-degree underwater camera, so we are going to put it in at Hunter Springs Park to check out how the grass is growing throughout the year," Bienkowski said. "They are also purchasing a water quality sensory machine."

Duke spokeswoman Dorothy Pernu said all of the data collected through the camera and sensory machine will provide live data for the students to measure over the years.

"It will all get uploaded into the Smart Table, which was a part of the grant last year, and then students will be able to see how eelgrass is progressing," Pernu said. "This is important to Duke's mission, the focus we have on environmental stewardship. We are privileged and fortunate that we have another partner in the community that wants to further that message."

The entire day was a community effort to ingrain a love for local waters, while giving student the opportunity to be part of the change.

"K-5 grades get to experience the backstory — the reason why we plant eelgrass. They get to see the effects of the pollution in our waters and the human impact if we don't take care of our environment," said CRPS Principal Donnie Brown.

To make this day happen, she said, it is indeed a community effort.

"All the water was brought to us by the Citrus County Fire Rescue from our bay, and all the sand was used from the leftover sand donated by Gator Dredging from last year," Brown said.

Once every grade got the chance to plant their eelgrass, one by one the containers were transported to their classrooms so students can measure the length the of the grass throughout the year.

In the final act, the entire fifth-grade class will plant the eelgrass in the water around Hunter Springs Park.

Brown said last year the manatees did eat some of the eelgrass, but many plants survived, which is having a positive impact.

"We need to protect these waters more now than ever, and these are the ones that need to know that. It's our children. If we don't teach them, they're not going to respect the environment, they aren't going to know any better," Brown said.

JULIE GORHAM
Reporter

TESTIMONIALS

Save Crystal River has a very active and engaged audience of over 5,400 followers. We reached out to them and asked them to share their support for this wonderful community project. We were touched by the responses we've received and we hope you will enjoy them as much as we have...

WATERGOAT This (KBRP) is a pivotal project with far reaching repercussions. The data being gathered will be invaluable going forward with the many watery challenges Florida faces. WATERGOAT/BigwaterCouncil fully endorse past, present and future success with this project.

Like · Reply · Message · 18h · Edited 1

Zoe Buckingham Kings bay is an outstanding Florida waterway and should look that way. This project will improve the ecosystem and the habitat and food source of all the creatures that make kings bay home. It also is important for our local economy including all businesses as well as homeowners whether they rely on the water or not.

Like · Reply · Message · 19h 1

Lisa Lincoln Kings Bay Restoration project is a vital part to saving our beautiful area! The work they do not only is improving our waters and helping the animals now, but will continue to improve things for many many years to come! Thank God their are dedicated people and organizations such as this that do such wonderful work. They deserve all of the funding they can get to continue improving our river for us all!!!

Like · Reply · Message · 20h · Edited 1

Kelley Reynolds 13 eelgrass plants provided by Duke Energy last year and planted in the muck just to the inside of my dock on the canal to Hunter Springs has turned into a bed of sea grass and is spreading under the dock into the canal. I have lived on this canal for 3 years and the clarity of the water has markedly improved each year. Saw an otter for the first time the other day, and crabs and lots of fish in the canal now. It is working! Please provide the funding to continue.

Like · Reply · Message · 20h 3

Lori L Weinfurt It's a big part of the ecosystem and it's also very important for the manatees. Thank you all for your hard work on this project.

Like · Reply · Message · 22h 1

Wendy Friday The Kings Bay Restoration Project's commitment to improving the water ecology of King's Bay has been impressive. Combined with their field work, the public outreach and engagement has magnified their restoration impact, and brought awareness to how individuals can make a difference on their own.

Like · Reply · Message · 22h 2

Debbie Sperandeo We LOVE King's Bay!! Thank you from our family for all you are doing for our waters!!

Like · Reply · Message · 22h 2

Carole Mason Kings bay is an important part of the eco system. Preserve or lose

Like · Reply · Message · 23h 2

Joshua Schultz Kings Bay is a vital area in this community. From residents to foreigners alike, enjoy what Kings Bay has to offer. I've lived her for 18 years and still visit frequently. This current project is only helping preserve what we love.

Like · Reply · Message · 1d 2

Donna Davis I love that we at Duke Energy have partnered with your organization on not only rallying our employees to help clean up Hunters Springs but also to help grow the eel grass! Thank you so much for all the research and effort that has gone into this project to help restore our bay! I look forward to our river re-earning her name of CRYSTAL River!

Like · Reply · Message · 21h 2

Tracy Cabrera Kings Bay is such an important part of our ecosystem. We want this to continue, so we have healthy rivers for all the animals, mammals and people. It's one of the best reasons to live here. We appreciate all your doing.

Like · Reply · Message · 22h 1

Josh Wooten The Citrus County Chamber of Commerce is proud to stand shoulder to shoulder with you in restoring our beautiful bay. We are beyond grateful for the work that you are doing.

Like · Reply · Message · 22h 1

Pete Langlois We are seeing the return of bass, blue crabs, and even otters. The area where the pilot project was implemented is now a tape grass meadow. This is working.

Like · Reply · Message · 22h 3

KINGS BAY RESTORATION PROJECT - 2019

RESTORE

Healthy ecosystems will be replanted into clean canals

372 new, previously unidentified spring vents opened and flowing

116,084 native "Rock Star" grasses planted

REMOVE

Invasive algae that has overtaken native grasses and habitats

23.9 acres of canals cleaned ... roughly equivalent to 9 football fields

80,901 tons of Lyngbya removed

95%+ amount of phosphorus pollution removed from treated water tested

50%+ amount of nitrogen pollution removed from treated water tested

MAINTAIN

Newly planted grasses to prevent recurrence of algae overgrowth

Improve water quality

Provide food & shelter for native species

1084 manatee friendly patented exclusion cages protecting the grasses

Pilot Project withstood Hurricane Hermine and significant saltwater intrusion

WHAT'S NEXT?

About 68.06
acres still to be cleaned and restored

July 2, 2023
target completion date -
Crystal River's 100th Year Anniversary

save Crystal River

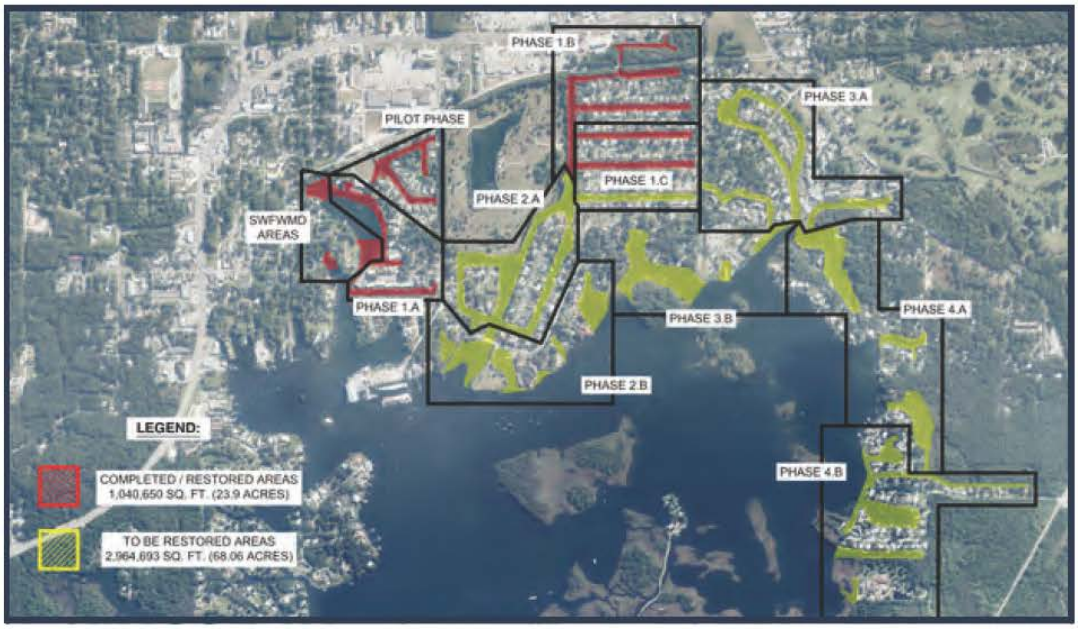
Clean Water Means Business

www.kingsbayrestorationproject.com

The Next Phase of Restoration

What's Next?

Save Crystal River's restoration project includes approximately 9 acres of residential canals. To date, we have complete the restoration of approximately 23.9 acres in the Hunter Springs Basin area and surrounding canals. The next phase of restoration scheduled is Phase 1.C, 2.A, adjacent to Three Sisters Springs, a major first magnitude springs and a primary manatee wintering site.



Next Stage 2019 through 2020

THANK YOU

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Manatee Ecotourism Association (META)
Homosassa River Restoration Project

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Thank You to All Private Donors for Your Time and Donations

In Loving Memory of Frank Fusick
A dedicated advocate for the outstanding waters of the great state of Florida.
Board member and in-house Engineer for Save Crystal River, Inc. and
the Kings Bay Restoration Project.

THANK YOU!!


KINGS BAY
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