

Be A Reef Hero Take Action Patch program

Coral Restoration Foundation

Girl Scouts of Tropical Florida is partnering with Coral Restoration Foundation to spread awareness about the challenges the coral reef in South Florida is facing and how everyone can take action to help save this invaluable resource. To learn more about these challenges and how you can help, check out the activities below to choose which you'd like to do, and then complete them on your own, with your troop or caregiver to earn your patch. If you're a SCUBA Diver, there are activities for you too!

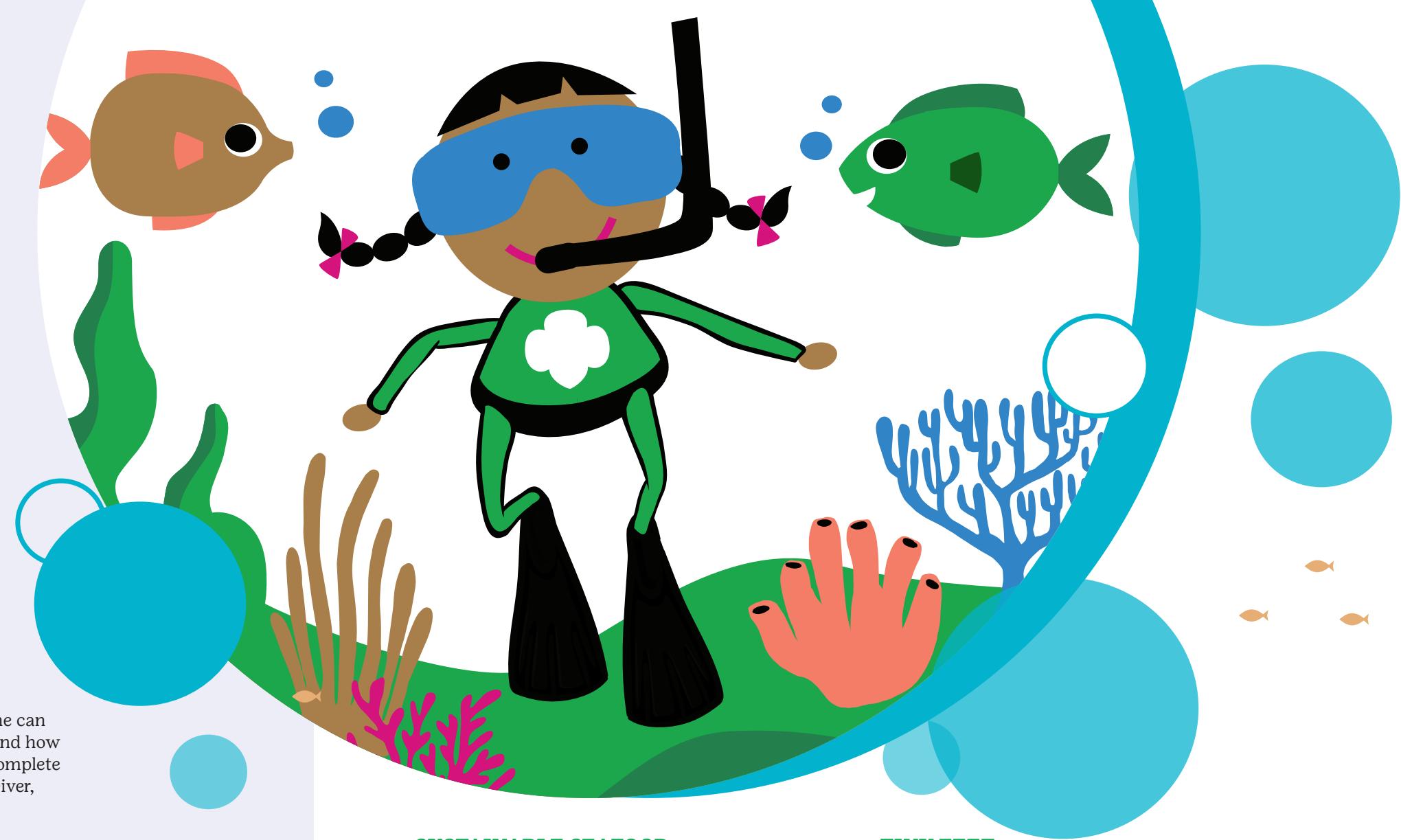
Once Girl Scouts have done the required number of activities they can send an email with recipient name, mailing address and a list of which activities they did to customercare@girlscoutsfl.org. So, get out there — learn about, explore, improve, and take action in your community!

Number of activities required to earn the patch:

Daisies:	4
Brownies:	5
Juniors:	6
Cadettes:	7
Seniors:	8
Ambassadors:	8

THE BIG FIVE

- One of the biggest preventable causes to Climate Change is the release of Greenhouse Gases and CO₂
- Research online who the biggest Greenhouse Gas emitters and biggest CO₂ emitters in your state or county.
- A great source to discover this is the EPA Flight website (<https://ghgdata.epa.gov/ghgp/main.do>)
- Once you have found these facilities, write your local state representation, show them your findings, and explain how Climate Change impacts coral reefs.



SUSTAINABLE SEAFOOD

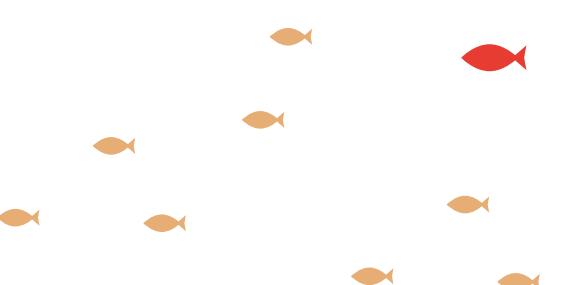
- Research sustainable seafood available in your area.
- Create a brochure that lists which seafood in your area is locally caught, and has sustainable fishing practices.
- Bring these brochures to local fish markets, seafood restaurants, and other locations where a large amount of ocean produce is bought and sold.
- Present your brochure and success with getting the word out about sustainable seafood to your troop, class, school, church, friends, family, or community.

REDUCE PLASTIC USE

- Plastics will break down into micro-plastics, which corals accidentally feed on.
- Reduce the use of everyday plastics that you use in your life. (Examples include bottle-free shampoo, bamboo toothbrushes, reusable grocery bags, metal straws, and so on)
- Keep track of how much less plastic you use, the present how much plastic that you have reduced to your troop, class, school, church, friends, family, or community.

TINY FEET

- One possible way of helping reduce ocean acidification is by reducing your carbon footprint.
- Go online and find a carbon footprint calculator and discover the amount of carbon dioxide you produce per year. An example website can be found on the EPA website (<https://www3.epa.gov/climatechange//kids/calc/index.html>)
- Now, recalculate with changes you would be willing to make in your life to help the coral reefs
- Present your findings to your troop, class, school, church, friends, family, or community, and see if they will make the pledge to reduce their carbon footprint.



WATER CONSUMPTION

- Keep a daily diary of all the food/drink you consume in a day.
- Calculate the amount of water necessary to produce all that food.
(<https://www.watertcalculator.org/water-use/the-hidden-water-in-everyday-products/>)
- Extrapolate from this the amount of water you use in a year. Then calculate the amount your city would use.
- What are some ways that you, or your city, could reduce your water use?
- Present your findings to your troop, class, school, church, friends, family, or community, and see if they are willing to change to help the coral reefs.

WATER TREATMENT

- Research different types of water treatment that occur where you live.
- What are the pros and cons to this type of water treatment. Are there economical concerns? What about environmental ones?
- Visit your local water treatment plant. If you cannot do this, then take a virtual tour online.
- Present your findings to your troop, class, school, church, friends, family, or community about the type of water treatment in your area.



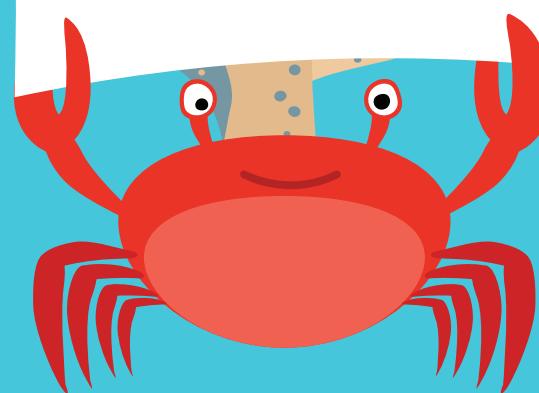
TRULY REEF SAFE SUNSCREEN

- Research the effects of certain chemicals, contained in sunscreen, have on coral. What does it do?
- Create a list of sunscreens that are safe while diving in coral reefs. Remember, just because it has the words, "Reef Safe" on it doesn't mean that it is actually safe for the reefs.
- Present your list, as well as your findings, to your troop, class, school, church, friends, family, or community about the ingredients within sunscreen, and how to pick sunscreen that is safe for the reefs.

CORAL EXPLORATION

- See corals in real life!
- This can be done by going to an aquarium, snorkeling, or diving
- Learn and document as much as you can on this visit! Do you notice biodiversity with the corals? Is there evidence of many types of corals, including hard and soft corals? Can you get close enough to see the polyps? Any evidence of bleaching or spawning? Is there evidence of pollution or ocean acidification?
- Report what you observed to your troop, class, school, church, friends, family, or community.

I am a Reef Hero



VISIT THE EXPLORATION CENTER

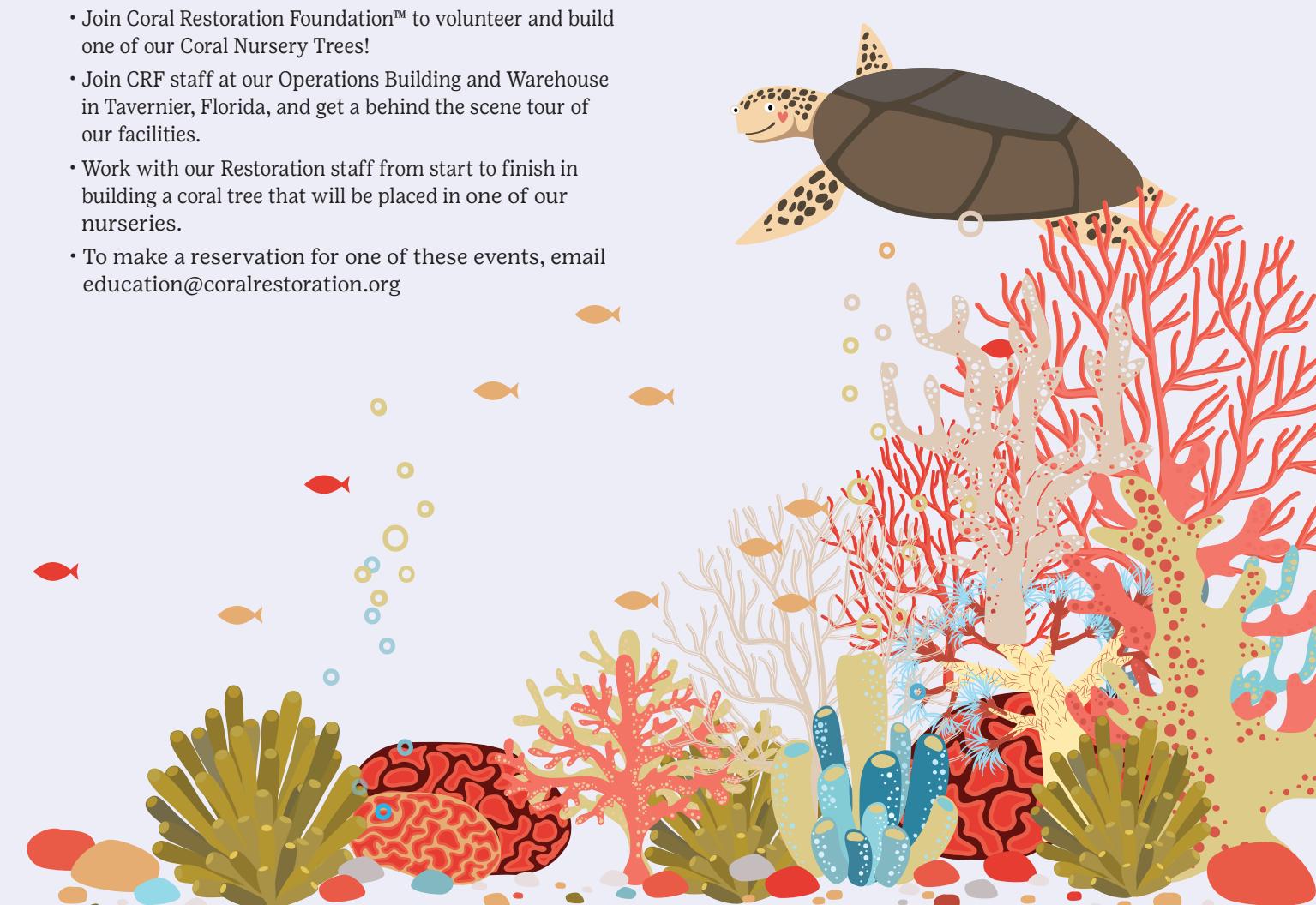
- Visit Coral Restoration Foundation's Exploration Center in Key Largo, Florida, with your troop, class, school, church, friends, family or community.
- While on your visit, ask a staff member for a presentation or workshop within Coral Restoration Foundations' Exploration Center classroom. Workshops and presentations include topics such as the history of CRF, coral anatomy, climate change, and so on.

BUILD A TREE

- Join Coral Restoration Foundation™ to volunteer and build one of our Coral Nursery Trees!
- Join CRF staff at our Operations Building and Warehouse in Tavernier, Florida, and get a behind the scene tour of our facilities.
- Work with our Restoration staff from start to finish in building a coral tree that will be placed in one of our nurseries.
- To make a reservation for one of these events, email education@coralrestoration.org

VISIT A LAND-BASED CORAL NURSERY

- Take a trip to a Land-based coral nursery!
- Take photographs of the location and discover what species of coral they are attempting to restore to the reefs.
- Interview an expert at their facility and learn about the pros and cons with this type of nursery.
- Report your findings to your friends, family, church, community, or troop.

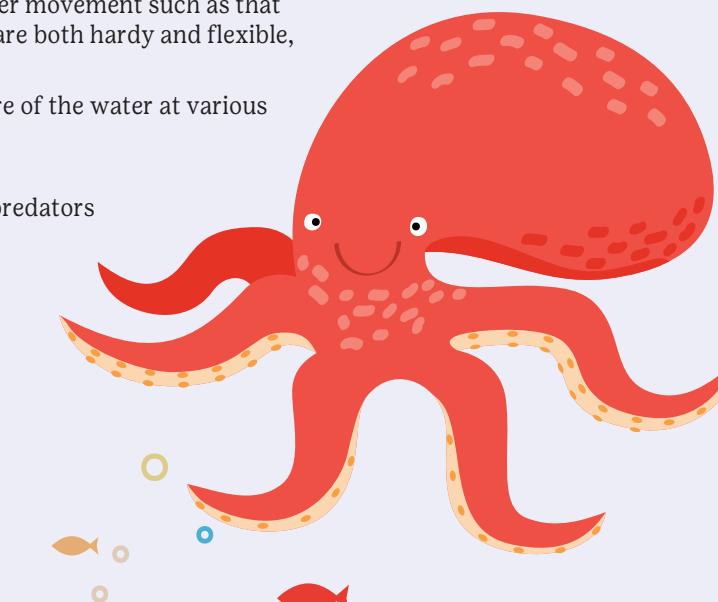


TALK TO A CRF EXPERT

- Through a joint venture with Girl Scouts of Tropical Florida, have a virtual conversation with a member of the staff of Coral Restoration Foundation.
- Learn what it is like to work for the largest coral restoration non-profit in the world
- Ask questions to the experts who take care of Coral Tree Nurseries on a daily basis
- To schedule a virtual conversation, please email: education@coralrestoration.org

DESIGN YOUR OWN CORAL TREE

- At Coral Restoration Foundation™, we work hard to ensure that our practices are as environmentally friendly as possible. We reuse and recycle as many of our materials as we can, including our monofilament line, and we strive to source the most eco-friendly products that we can find.
- We are now working on trying to develop plastic-free versions of the Coral Trees™, but we know that more heads are always better than one and that young minds have incredibly creative (often surprising!) ways of solving problems
- Design a coral nursery tree that uses environmentally-friendly materials (i.e. no plastics or toxic substances) but has the same benefits as the Coral Tree™ design.
- The benefits of our current design include:
 - Corals having 360-degree access to nutrients, which helps accelerate their growth
 - The ability to support at least 50lbs (roughly 23 kgs) of coral
 - Corals are free from sedimentation, suspended in the water column, away from the seafloor
 - Structures are capable of withstanding a high degree of water movement such as that generated by storm event – i.e. the structure's components are both hardy and flexible, and the tree is not likely to be “uprooted” or displaced
 - Trees can be raised or lowered depending on the temperature of the water at various depths
 - corals need an optimal temperature to survive
 - Lower risk of predation, as the corals are less accessible to predators
 - Reasonable cost per tree
- Report your design to education@coralrestoration.org



For SCUBA Divers OKCORAL

- You can then enter this information directly to the app, or you can write it on a slate and enter it into OkCoral later. OR, you just can take a photo of the cluster and its tags, and send them to CRF through the app!
- Download the free OKCoral app from the App Store and submit data to Coral Restoration Foundation™. Make sure that you have your parents' permission before downloading.
- Using the fun, easy-to-use smartphone app, OkCoral, you can use your recreational dives on our restoration sites along the Florida Reef Tract to help Coral Restoration Foundation™ answer vital questions about the health and survivorship of our coral outplants.
- This data will make a significant contribution to the success of our mission! Your data will help us begin to answer things like “which reef habitat has greater coral survivorship?” or “are there differences in genotype performances?” and many other questions. Coral Restoration Foundation Citizen Scientists can be snorkelers or divers.
- OkCoral quickly brings you up to speed using three intuitive swipe-based games. These games will train you to:
 - Identify the differences between staghorn and elkhorn
 - Spot the difference between living and dead corals
 - Identify corals that have grown together and fused, and those that haven't
- Once you've passed all three games, you don't need any more special training; you will be ready to head out and start gathering data for CRF.
- OkCoral will teach you exactly how to find the data CRF needs – the app guides you through the process, step-by-step. This information you will send to us includes:
 - Your name
 - The reef name
 - The mooring ball number
 - The date
 - Whether the corals are dead or alive and fused or not fused
 - The corals' cluster number and genotype ID
- You can submit this data in the form of photos, by recording information on a slate, or even directly into the app if you have an underwater housing for your phone!
- If you're sending pictures, OkCoral connects directly to your phone's picture gallery and prompts you to submit the information that needs to accompany each one.
- The genotype and cluster numbers are included on the tags that CRF attaches to each coral cluster that we plant on the reefs. All you need to do is find them.

MONITOR WITH CRF™

- Join Coral Restoration Foundation™ for one of our Recreational Monitoring Dives. This can be done as a Scuba Diver or Snorkeler.
- This fun, interactive dive program includes an educational lesson at Coral Restoration Foundation Exploration Center, followed by a dive in one of their outplant sites or nursery.
- You will learn how to monitor the corals using the OkCoral app as well as identifying difference between staghorn & elkhorn, alive & dead, fused & not fused, and basic disease identification. The data you collect on your dive will continue Coral Restoration Foundation™ mission of restoring the Florida Reef Tract.
- To reserve a spot at one of these events, or to schedule a private event with you and your troop, school, church, family, or community, please call (305) 453-7030

DIVE IN WITH CRF

- Joining Coral Restoration Foundation™ out on the water during a hands-on, tailored, SCUBA diving or snorkeling program is an experience you will never forget in one of our Florida Nurseries!
- This program begins with a morning classroom discussion about Coral Restoration Foundation™, our nurseries, and the current state of the Florida Reef Tract.
- Following this, you will dive in one of our nurseries, possibly the world's largest Coral Tree Nursery, the Tavernier Nursery, with over 500 coral trees!
- To reserve a space on one of these trips, visit <https://www.coralrestoration.org/dive-programs>, or, for a private trip for you and your friends, family, troop, church, or school, email volunteer@coralrestoration.org

