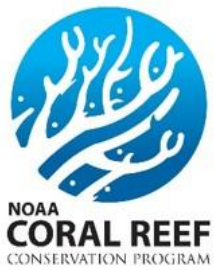


U.S. Regional Caribbean Stony Coral Tissue Loss Disease Workshop  
San Juan, Puerto Rico  
May 9-11, 2023  
Final Report



## Overview:

The 2023 U.S. Regional Caribbean Stony Coral Tissue Loss Disease (SCTLD) Workshop convened disease response participants from the U.S. Virgin Islands (USVI), Puerto Rico, and Florida to promote information exchange, coordinate disease response efforts, and collaborate on projects in the U.S. Caribbean, with a focus on enhancing regional coral rescue efforts and communication.

## Planning Team Members:

- Caroline McLaughlin (Florida Sea Grant)
- Dana Wusinich-Mendez (NOAA Coral Program)
- Leslie Henderson (NOAA Coral Program)
- Matt Warham (USVI Department of Planning & Natural Resources)
- Aurora Justiniano-Santos (NOAA Coral Program)
- Maria Vega-Rodriguez (Puerto Rico Department of Natural & Environmental Resources)
- Dinorah Chacin (NOAA National Marine Fisheries Service)
- Ashley Perez (Puerto Rico Department of Environment and Natural Resources)
- Ashleigh Epps (Florida Sea Grant)
- Kennedy Wall (Florida Sea Grant)
- Courtney Tierney (USVI Department of Planning & Natural Resources)
- Lexie Sturm (NOAA Coral Program)

## Objectives:

- Establish a mechanism to share SCTLD communications materials and products (i.e. shared communications folder) and discuss joint messaging and communications
- Briefly share updates on jurisdictional efforts to develop coral reef restoration plans
- Evaluate challenges in creating a regional rescue coordinator position and identify a new mechanism for establishing the position
- Draft an outline for a regional rescue plan
- Review the NOAA SCTLD Implementation Plan and jurisdictional plan crosswalk documents, identify joint priorities for USVI and PR, and identify potential funding mechanisms
- Explore the possibility of a joint NMFS section 6 grant proposal to support a joint priority activity

## Meeting Notes & Agenda

Related Resources: Includes Florida coral rescue planning documents, coral rescue holding facility management documents, Florida restoration priorities, MPACConnect infographics, NPS Caribbean restoration plan, workshop presentations, and USVI coral disease response and planning documents

## Participants:

- Helena Antoun (NOAA National Marine Fisheries Service)
- Kayla Budd (National Park Service/University of the Virgin Islands)
- Cristina Cabrera (Puerto Rico Department of Natural & Environmental Resources)
- Dinorah Chacin (NOAA National Marine Fisheries Service)
- Caroline Donovan (NOAA Coral Program)
- Ashleigh Epps (Florida Sea Grant)
- Rene Esteves (Puerto Rico Sea Grant)

- Miguel Figuerola (Puerto Rico Department of Natural & Environmental Resources)
- Lisa Gregg (Florida Fish & Wildlife Conservation Commission)
- Leslie Henderson (NOAA Coral Program)
- Edwin Hernandez-Delgado (University of Puerto Rico)
- Fabiola Irizarry (University of Puerto Rico)
- Nilda Jimenez (Puerto Rico Department of Natural & Environmental Resources)
- Aurora Justiniano-Santos (NOAA Coral Program)
- Thomas Kelley (National Park Service)
- Paco Lopez (Arrecifes Por Ciudad)
- Caroline McLaughlin (Florida Sea Grant)
- Sonora Meiling (University of the Virgin Islands)
- Tania Metz (The Nature Conservancy)
- Alana Nunn (National Park Service)
- Ashley Perez (Puerto Rico Department of Natural & Environmental Resources)
- Jason Quetel (University of the Virgin Islands)
- Hector J. Ruiz (HJR Reefscaping)
- Jordan Schneider (Ceiba Strategies)
- Lexie Sturm (NOAA Coral Program)
- Samuel Suleiman (Sociedad Ambiente Marino)
- Courtney Tierney (USVI Department of Planning & Natural Resources)
- Anna Toline (National Park Service)
- Joe Townsend (National Science Foundation)
- Maria Vega-Rodriguez (Puerto Rico Department of Natural & Environmental Resources)
- Kennedy Wall (Florida Sea Grant)
- Jessica Ward (The Nature Conservancy)
- Matt Warham (USVI Department of Planning & Natural Resources)
- Logan Williams (Coral World Ocean & Reef Initiative)
- Stacey Williams (ISER Caribe)
- Dana Wusinich-Mendez (NOAA Coral Program)

Day 1: May 9th, 2023

## Jurisdictional SCTLD Response Updates

**Puerto Rico SCTLD Response Update**, Dr. Maria Vega-Rodriguez (Puerto Rico Department of Natural & Environmental Resources) & Fabiola Rivera Irizarry (Sociedad Ambiente Marino)

- SCTLD Treatment Dashboard: a tool to display intervention efforts in Puerto Rico
- “Disease progression of SCTLD on *Pseudodiploria strigosa* populations in Puerto Rico” (Irizarry thesis)
  - 2021-2023
  - Study showed decline in coral populations (initial infection with SCTLD-expected), followed by a plateau (survival of resilient corals- expected), followed by another decline (decline in resilient corals- unexpected)
  - Decline potentially due to water quality

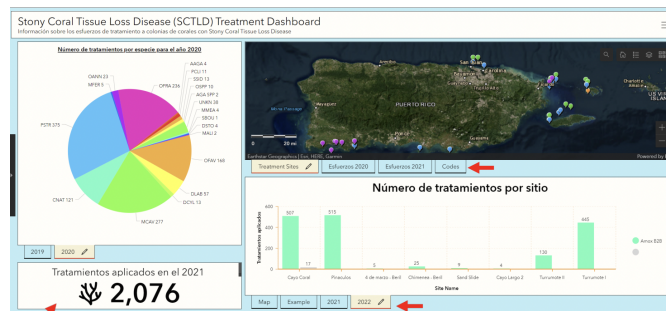


Image 1: Puerto Rico SCTLD Treatment Dashboard

**USVI SCTLD Response Update**, Courtney Tierney (U.S. Virgin Islands Department of Planning & Natural Resources)

- Disease status: Endemic, major coral cover loss, present at all reefs
- Field interventions: Incorporating coral rescue, algae removal, and corallivore culling into intervention dives
- Data: Composing summary report with data from the 2020-2022
- Coral restoration: Finalizing the territory-wide 10-year restoration plan for 6 priority sites
  - Scaling up coral restoration through grant-funded projects
- Communications: Revitalizing the VI-CRAG to incorporate broader coral information

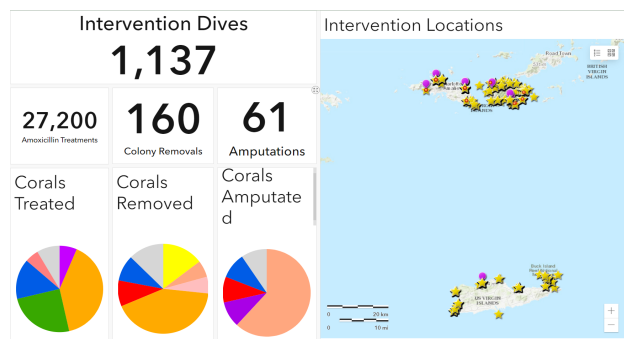


Image 2: [USVI Coral Disease Treatment Dashboard 5-31-23](#)



## Restoration Updates

**Puerto Rico Restoration Update**, (Planned speaker Michael Nemeth, NOAA Restoration Center, could not attend. Notes below were provided after the workshop.)

- Presently there are 2 ex-situ (land-based) coral nurseries operating in Puerto Rico, and several others are planned for development
- The ex-situ coral nurseries propagate SCTLD-susceptible species for population recovery/restoration and can support genotype banking, although space is limited
- In-situ (ocean-based) nurseries in Culebra, Fajardo, Ponce, Guanica, and La Parguera are maintaining and propagating corals of SCTLD-susceptible species
- In-situ and ex-situ (existing and planned) coral nurseries can be utilized to bank genotypes, propagate, and grow out corals for species population recovery
- Genetic tracking in the collection through propagation and outplanting is essential to future population recovery efforts to maximize adaptability to stressors, including SCTLD
- Larval propagation should be developed and implemented in Puerto Rico, to maximize diversity in restoration and minimize inbreeding depression of asexually propagated corals
- The goal of current NOAA Restoration Center projects is to maximize asexual production of SCTLD-susceptible species in ex-situ and in-situ nurseries and outplant these corals to reach age/size of sexual maturity to reproduce and assist in population recovery

**Virgin Islands Restoration of Coral Squad (VI-RoCS) Update**, Leslie Henderson (NOAA Coral Program)

- Formed group in 2020 to develop a territorial coral restoration plan. Draft plan is coming soon!
- Territorial restoration goal: To combat coral reef degradation caused by environmental change and human impacts, we will reestablish and/or maintain the ecological function at several (5-10) priority coral reef restoration sites across the territory within the next 10 years.
- Next steps: Circulate USVI coral restoration plan, develop coral restoration monitoring plan, genetics management plan, find more funding, engage more partners

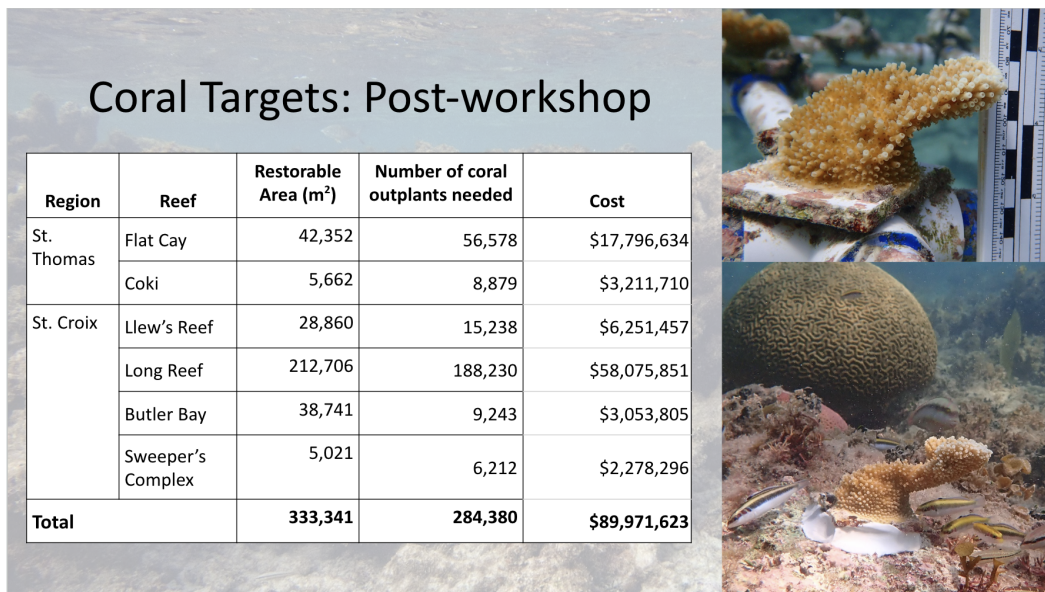


Image 3: Restoration targets and cost estimates for restoration of priority reef sites in the USVI

### **Florida's Restoration Priorities, Lisa Gregg (Florida Fish and Wildlife Conservation Commission)**

- Restoration priority documents
  - [State of Florida Restoration Priorities for Florida's Coral Reef: 2021-2016](#): Document for managers and practitioners
  - [Florida's Coral Reef Restoration Priorities: 2021-2026](#): More public-facing document
  - [Florida's Coral Reef Restoration Priorities: 2021-2026](#): Two-pager
- Priorities:
  - Building a network of coral nurseries and restoring Florida's Coral Reef
  - Establishing large-scale ecosystem restoration strategy and associated infrastructure necessary to preserve the ecological and structural integrity of Florida's Coral Reef

## Regional SCTL D Communications Coordination

### **National SCTL D Communications. Caroline McLaughlin (Florida Sea Grant) & Caroline Donovan (NOAA Coral Program)**

- National communications tools have been developed to support the work of partners in the jurisdictions- please let us know how we can better support your work and if you need more copies of any of our materials
- [SCTL D Prospectus](#): geared toward an external audience, meant to be evergreen. Copies can be mailed out upon request
- [SCTL D Newsletter](#): annual newsletter highlighting key SCTL D accomplishments and updates
- [Transmission Fact Sheet](#): highlights how SCTL D is transmitted, current activities to better understand/prevent transmission, and future priorities
- [Monthly SCTL D Updates](#): sent to a smaller, internal distribution list. Updates include research papers, webinars, and relevant news articles
- AGRRA Coral Disease [Materials](#): available on AGRRA's website.
- [MPA Connect Materials](#): available on GCFI's website/Emerging Issues tab. Include infographics, videos, and dashboards. Resources are available in English, French, and Spanish
- [NOAA's SCTL D Website](#): includes NOAA's SCTL D Implementation Plan, materials, and links to other resources
- [NOAA's Coral Disease & Health Consortium](#): created by Dr. Cheryl Woodley. Includes a section on SCTL D
- National Dissemination Strategies
  - Social media
  - Internal NOAA communications
  - USCRTF Communications Working Group Social Media Toolkit
  - Florida Coral Disease Response Communications Working Group
  - International Coral Communication Community of Practice
- [Distribution Lists](#)

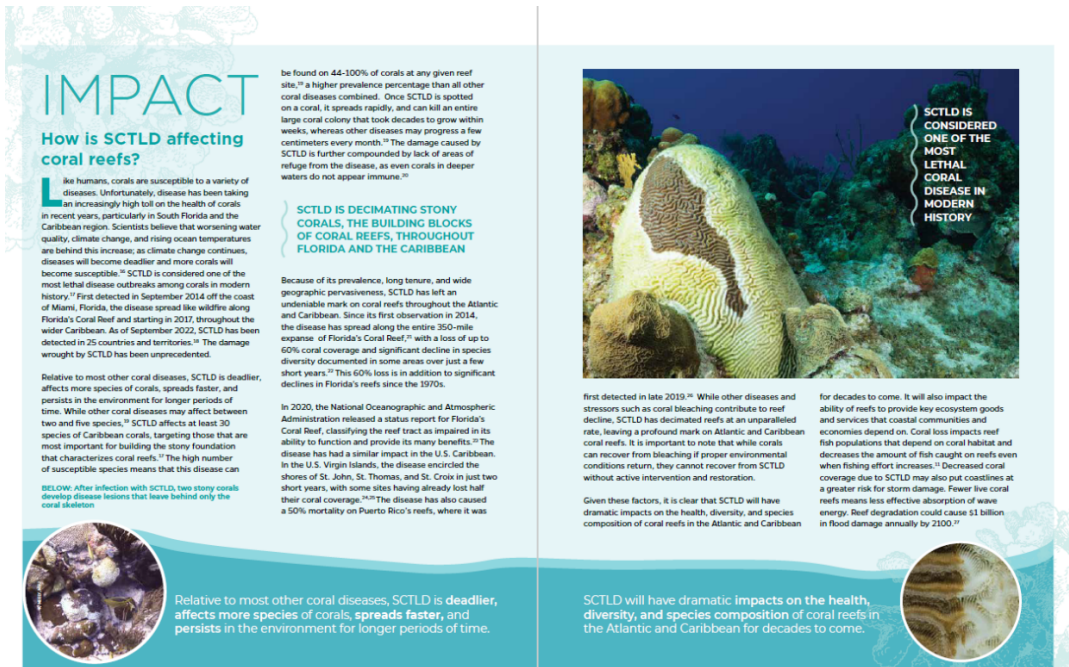


Image 4: Screenshot from the SCTL D prospectus

**USVI Communications Materials, Courtney Tierney (USVI Department of Planning & Natural Resources)**

- Response plans
  - [Coral Disease Outbreak Response Plan for the US Virgin Islands \(2020\)](#)
  - [USVI Bleaching Response Plan \(2020\)](#)
  - [Priority Action Plan for USVI Coral Disease Response \(2023\)](#)
  - USVI Coral Reef Restoration Plan (expected June 2023)
- Materials for practitioners: response plans, decision trees, shared reporting databases
- Materials for non-practitioners: infographics, fact sheets, resources from partner organizations
- Other tools: social media, virtual events, in-person events



Image 5: Brain coral-shaped cookies that children applied icing to as a way to teach them about how SCTL D-affected corals are treated with amoxicillin paste

**Puerto Rico Communications Materials**, Ashley Perez (Puerto Rico Department of Natural & Environmental Resources)

- Puerto Rico monthly SCTLD meetings: new disease reports, interventions, logistics, research, education, outreach
- [Puerto Rico Sea Grant website](#): disease description, impact, image gallery, articles, dashboard (available soon)
- Social media (Instagram, Facebook, YouTube)
- Google Group
- [DNER Puerto Rico Coral Reef Conservation & Management Program website](#)

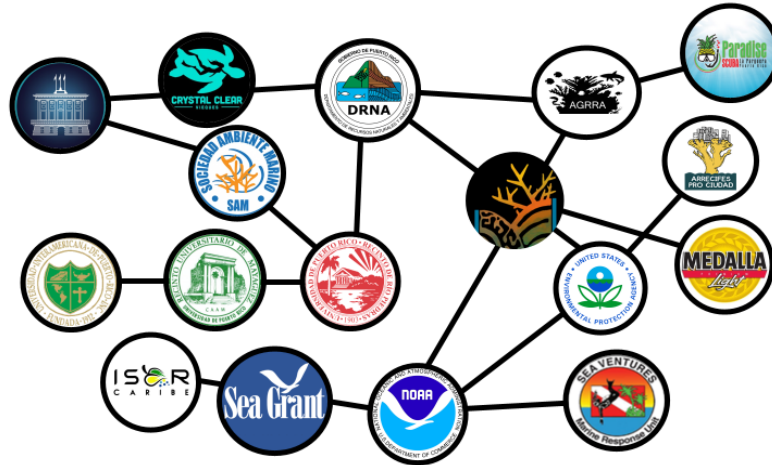


Image 6: Puerto Rico coral disease response and restoration partners

**Key Takeaways from Discussion:**

- Consider creating a unified dataset from PR and USVI disease dashboard
  - Determine audience, intended use, and platform
  - Make layers shareable on ArcGIS
- There is a need to develop a formal national SCTLD communications plan, articulating communications goals, audiences, actions, and timeframes
  - Consider organizing through U.S. Coral Reef Task Force Communications Working Group
- Communications strategies to consider:
  - Increase partnerships with NGOs and advocacy groups
  - Identify strategies to target decision-makers
  - Include a long-term component in communications plan
  - Work with grassroots entities
  - Benefits of cause marketing partnerships
- Lack of resources to translate materials into Spanish
  - Consider creating a team of Spanish speakers to help translate communications materials

**Next Steps:**

- Caroline M.- compile resources from monthly updates and make available online
- POC TBD- follow up on need to create unified dashboard/dataset and shareable layers
- Caroline M. & Caroline D.- initiate development of national SCTLD comms plan
- Caroline M. - gauge group interest in translating documents, distribute documents for translation



[Volunteer Training & Treatment Application in Puerto Rico, Lessons Learned](#), Dr. Nilda Jimenez (Puerto Rico Department of Natural & Environmental Resources)

- Volunteer training curriculum: general biology, coral ID, SCTLD ID, hands-on training
- Challenges with recreational divers: scientific skills, could only train two divers at a time
- Challenges with partnerships with dive companies: two spaces for volunteers was a big cost, no commitment to return to the same dive sites
- Successes in partnership developed (Medalla) and sites treated
- Lessons learned: need to develop new messaging strategies; concentrate on training a few volunteers, not necessarily an army

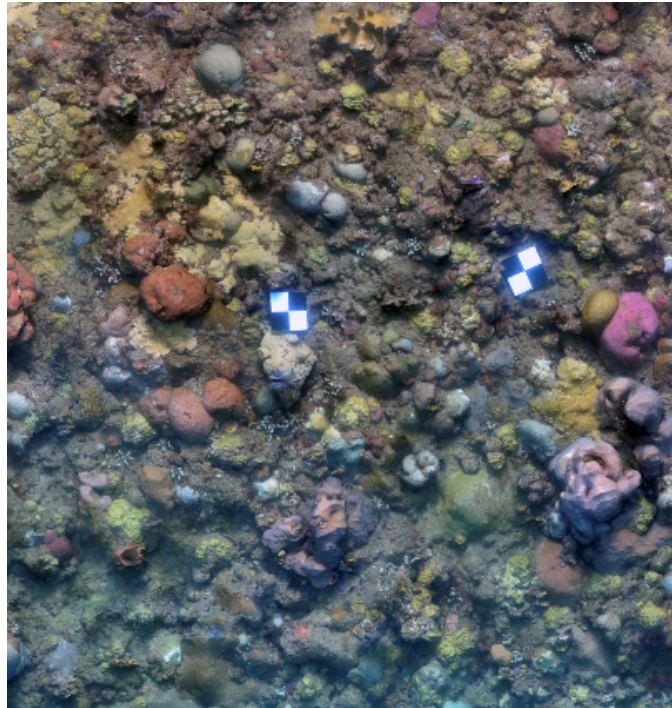


Image 7: Tres Palmas reef treatment site in Puerto Rico (HJR)

[Key Takeaways from Discussion:](#)

- USVI volunteer strategies: paying people for their work (\$150); working with core group also used for restoration; developed a sense of community among volunteers
- Shared challenges: cost of boat rentals, dependence on weather, lack of funding

Day 2: May 10th, 2023

Site Visit: [Institute for Socio-Ecological Research \(ISER\) Center for Research and Restoration of Marine Organisms \(CIROM\)](#)

[A More Holistic Approach to Improving Coral Reef Restoration in the Caribbean](#), *Dr. Stacey Williams (ISER)*

- We should take a more holistic approach to coral reef restoration by simultaneously outplanting corals and enhancing herbivory
- Sea urchins, *Diadema antillarum* and *Tripneustes ventricosus* are effective herbivores and have been successfully restocked at some reefs in Puerto Rico
- In two months, *D. antillarum* significantly reduced *Dictyota* abundance by 77% and *Ramicrusta* by 53% in two months after restocking in experimental cages
- Other species of sea urchins like, *T. ventricosus*, are as effective in reducing benthic algae, and should be considered for restocking
- Restocked sea urchins enhance the survivorship of outplanted coral fragments



Image 8: The coral and sea urchin nursery at ISER

## Scoping US Caribbean Regional Rescue Plan

[Florida Coral Rescue & Propagation](#), *Lisa Gregg (Florida Fish & Wildlife Conservation Commission)*

- Goals: Remove coral colonies from the reef and hold them in land-based facilities to prevent them from becoming SCTL D infected, preserve genetic diversity, and have tissue to use for future propagation/restoration efforts.
- Targeting 20 high and medium-priority species, prioritized based on their SCTL D susceptibility, ecological contributions, and conservation/population status
- Rescue areas are selected based on coral reef monitoring program data and local knowledge



- Genetic management is important to this project:
  - Need to over-target the number of colonies collected to maximize number of unique genets (some colonies may be cloned)
  - Developing suites of genetic markers and genotyping all rescued colonies
- Long-term holding of these colonies across 25 Association of Zoos & Aquariums (AZA) affiliated facilities.
- AZA holding facilities and rescue teams are advised by multiple teams and working groups, have to use unified documentation methods (“Tracks” management system), and are subject to independent audits
- Efforts focused on sexual and asexual propagation of offspring from rescued corals, need to transition to continue working with restoration teams to coordinate future outplanting efforts

#### **USVI Coral Rescue Approaches, Logan Williams (Coral World Ocean & Reef Initiative)**

- USVI coral rescue approach differs from Florida’s
  - Since they could not collect coral in advance of the disease line, they would collect colonies that were visually diseased (although not with >50% mortality)
  - Diseased portion of the colony would be amputated and remaining tissue would be treated with 100 mg/liter amoxicillin in-water dosing
- Have seen high success rates
- Next Steps:
  - Implement NFWF funding to expand coral treatment system
  - Find highly susceptible species survivor to target for rescue

#### **Scoping a US Caribbean Regional Rescue Plan, Dana Wusinich-Mendez (NOAA Coral Program)**

- Based on the Coral Rescue workshop at Reef Futures 2022 Kennedy compiled information from the [USVI](#) and [PR](#) on:
  - Current management capacity
  - Access to aquarium facilities
  - Coral rescue approaches of interest
- Common goals of a regional coral rescue response:
  - Mitigate population decline and preserve the biodiversity of SCTLTD-affected species
  - Collect important reef-building species and use micro-fragmentation to restore reefs in the future
  - Improve the resilience of degraded reefs and promote healthy coral reef ecosystems
  - Increase coral diversity and cover

#### **Key Takeaways from Group Discussion:**

- Differing outbreak dynamics and differing response capacities have led to different approaches in coral rescue between Florida and the USVI, but perhaps more coordinated rescue efforts can occur between USVI and Puerto Rico
- Both Florida and the USVI have had trouble maintaining *Meandrina* species in rescue facilities, so much so that they are not targeting them for rescue anymore
- Discussion on varying rescue approaches that will best work for the USVI and PR:
  - Need to decide on if we are going to target only healthy colonies or include diseased colonies too
  - Potentially conducting “partial rescue” or bringing in fragments of large parent colonies
- Discussion of the potential effects of transferring rescued colonies between USVI and PR, and genetic management

- Logistically challenging, coral survivorship across transport
- Genetic implications of moving coral colonies between islands, are they panmictic (well-mixed) populations? Working to address this with population genetic studies
- Overall need to maximize space with holding facilities across different islands
  - AZA facilities working with FL rescue are at capacity already
- Need to consider maintaining a network of facilities that each have their own fragments of coral genets so that we have backups in case of holding facility issues (e.g. hurricanes)
- Maintaining near-natural levels of genetic diversity is key to not only addressing the effects of SCTLD but maintaining resilience to bleaching and other diseases
- Need to integrate rescue planning into long-term restoration goals

#### Next Steps:

- Courtney and Maria: Invite representatives from PR and USVI onto each other's monthly meeting calls where they discuss coral rescue efforts and share notes/information
  - Would be helpful to have bilingual participants since PR meetings are held in Spanish.
- Jason: Serve as POC to evaluate current rescue holding facility capacity
- Dana to follow up with Beth: Find potential holding facilities across the Caribbean using the AZA affiliate list
- TBD/Regional Rescue Coordinator: Start researching and developing lists of logistical/paperwork considerations: MOUs, transfer agreements, permitting requirements
- TBD/Regional Rescue Coordinator: Develop estimated coral rescue costs and identify a point person to secure funds including long-term financial support for holding facilities.
- Dana: Follow up with Lisa to get Coral Rescue Coordinator Scope of Work and share it with Matt & Maria
- Caroline/Courtney: Hold time on June/July Affected Jurisdictions Team agenda to discuss funding opportunities for the Regional Rescue Coordinator
- Courtney: Facilitate regional coral rescue calls

## Regional Coral Rescue Coordinator Position

### **Florida Rescue Positions, Lisa Gregg (Florida Fish & Wildlife Conservation Commission)**

- Coral Rescue Coordinator: Coordinates land-based partners with the Association of Zoos & Aquariums (AZA) who participate in Florida's coral rescue program, focusing on finding homes for Florida's rescued corals
- Coral Propagation Coordinator: Coordinates propagation planning for the State of Florida

### **Regional Coral Rescue Coordinator Position Goals & Challenges, Matt Warham (USVI Department of Planning & Natural Resources) & Maria Vega-Rodriguez (Puerto Rico Department of Natural & Environmental Resources)**

**Scope of Regional Coral Rescue Coordinator Position:** Tasked with establishing and collaborating with coral rescue in PR and the USVI; assist with the planning and execution of coral rescue based on coral disease in the USVI and PR; lead the development of a regional coral rescue plan; develop a standardized coral rescue and restoration database across PR and the USVI; emphasize engagement of PR and USVI with FL and other regions; ideal length- 3 years

**Regional Coral Rescue Coordinator Position- Desired Qualifications:** Bilingual, experience working in USVI and/or Puerto Rico, Bachelor's (Master's preferred) in coral reef ecology, data management, general management

#### Potential Options for Housing Position

- Jurisdictional governments
- Puerto Rico Sea Grant: potential issues with match and administration
- Florida Sea Grant: no funding available but willing to house position to be based in USVI or PR
- TNC

#### Potential Funding Options

- Jurisdictional Cooperative Agreements: challenge is that because of funding cycle, position wouldn't start until FY26
- University of the Virgin Islands: restrictions on funding made it difficult to identify an appropriate candidate
- Emergency NFWF funds: problem is that disease is endemic and no longer an "emergency"
- NOAA Restoration Center: covers both USVI and PR, but past issues with representation
- Caribbean Fisheries Council: need to talk to council, DPNR, and DNER. Leftover funds may exist
- FEMA Mitigation funding
- [Philanthropic opportunities](#)
- CZM
- NPS IRA funds

#### Next Steps:

- Follow up on discussions/strategy on June/July Affected Jurisdictions call

## Day 3: May 11th, 2023

### Identifying Regional SCTL D Priorities for 2023/2024

#### NOAA SCTL D Implementation Plan, *Caroline McLaughlin (Florida Sea Grant)*

- November 2020: NOAA released its [SCTL D Strategy](#)
- September 2022: NOAA released the [Implementation Plan for its SCTL D Strategy](#)
- The Implementation Plan outlines a detailed, 5-year course of action for SCTL D response and prevention
- Total budget: \$125 million over 5 years
- The plan is not fully resourced. Some activities are underway and can be completed with existing resources but additional funds are needed.
  - Caroline working on a spreadsheet to capture progress on implementing the plan
  - There is a need to communicate support for the plan
- Crosswalks of NOAA Implementation Plan with jurisdictional SCTL D and coral management plans: [USVI](#), [Puerto Rico](#), [Florida](#), [crosswalk of USVI & Puerto Rico crosswalks](#)

#### Key Takeaways from Discussion on Potential Regional SCTL D Priorities:

- Joint population assessment of species to document species that are in decline
  - Consider implications for management strategies
  - NSF could have funds to support
  - Add SCTL D species to NCRMP surveys
  - Include data on NOAA Coral Reef Assessments- ensure assessments highlight impact of SCTL D
- Increase regional coordination on research
  - NSF has a research coordination grant that could help support
- Water quality information for both Puerto Rico/USVI is a high priority as it relates to SCTL D prevalence and for choosing ideal coral outplanting sites
  - USVI has water quality samples/data they can share; Puerto Rico wants to start building a water quality monitoring program based on USVI protocols
  - Investigate regional differences in species susceptibility: it doesn't appear that anyone in the group has the capacity for this type of analysis at the moment
- Increase research coordination among jurisdictions

#### Next Steps:

- Sonora: Touch base with Kim Foley about adding SCTL D species to NCRMP surveys
- Caroline: facilitate discussion on the need for increased research coordination among jurisdictions and need for regional coordination on data management on the next Affected Jurisdictions Team call

### Section 6 Proposal

The purpose of Endangered Species Act (ESA) Section 6 Species Recovery Grants is to give funding to states and territories to support management, research, monitoring, and/or outreach activities that have direct conservation benefits for listed species under the ESA within that state.

**Puerto Rico Section 6 DCYL Project**, Miguel Figuerola (Puerto Rico Department of Natural & Environmental Resources)

- Presented a project proposal on Section 6 funding focused on *Dendrogyra cylindrus*, which has faced localized extirpations, is the only highly susceptible SCTL species listed under the ESA, and is an iconic/charismatic coral species
- Proposed two-year project main objectives:
  - Characterize and map the distribution and population structure of *D. cylindrus* across Puerto Rico
    - Demographic surveys will georeference live and dead colonies of *D. cylindrus*
  - Assess the impact of SCTL on *D. cylindrus* populations.
  - Characterize the genetic variability of the *D. cylindrus* population across Puerto Rico and relate it to the status of SCTL in each site
  - Conduct antibiotic treatment, evaluate effectiveness, and rescue different genotypes by removing representative colony fragments of apparently healthy colonies of *D. cylindrus* and placing them in in-situ water column nurseries
    - Survivorship of mid-water coral nursery fragments of *D. cylindrus* higher than wild colonies on reef substrate
    - Establishing new *in situ* coral nurseries
- Potential project outcomes:
  - Revise the conservation status of *D. cylindrus* to critically endangered
  - Use information to help inform and develop a local *D. cylindrus* restoration plan

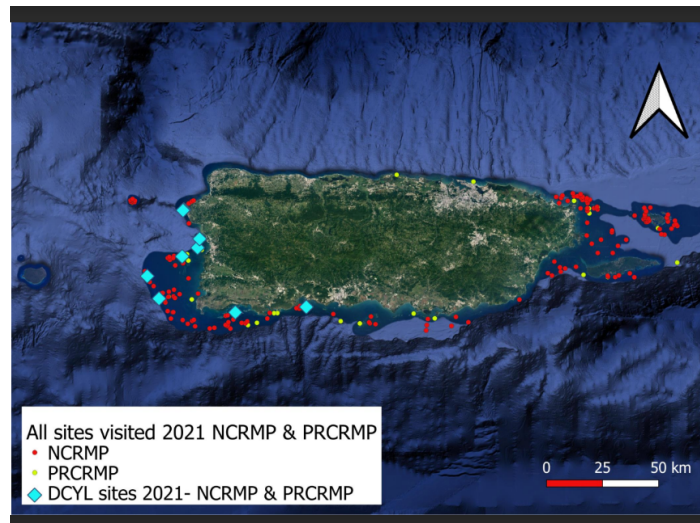


Image 9: Map of coral reef monitoring sites across Puerto Rico including sites with known *D. cylindrus* populations

**Key Takeaways from Discussion:**

- There are so few *D. cylindrus* left that information sharing about remaining colonies is critical as we need as many replicates as possible for population genetics studies
- Past outplanting of *D. cylindrus* back onto reef with no active disease was not successful, consideration of the disease status on outplanting sites is critical

**USVI Section 6 Efforts**, Matt Warham (USVI Department of Planning & Natural Resources)

- Multiple Section 6 projects have been supported:
  - 2019-2022: USVI *Acropora* Monitoring Program

- Reestablished a long-term monitoring program started in 2011
- Monitoring outplanted *A. palmata* and *A. cervicornis* in addition to natural populations
- Measuring genetic diversity and correlating to outplant success
- Supporting education, outreach, and citizen science programs
- Developing an *Acropora* data portal, securing CRCP funding
- 2020-2023: Coral Disease Response and Restoration Coordinator Position
  - Hired Courtney Tierney who coordinates with USVI coral disease and restoration groups and is an active diver across USVI programs.
- 2023-2026: Population Status and Distribution of ESA-Listed Corals
  - Estimating population size and structure of surviving ESA-listed colonies across USVI, focused on shallower than 10 m habitats
  - Rescuing surviving ESA-listed colonies
  - Raise awareness of ESA-listed and disease-susceptible populations, ESA listing of more disease-susceptible species?

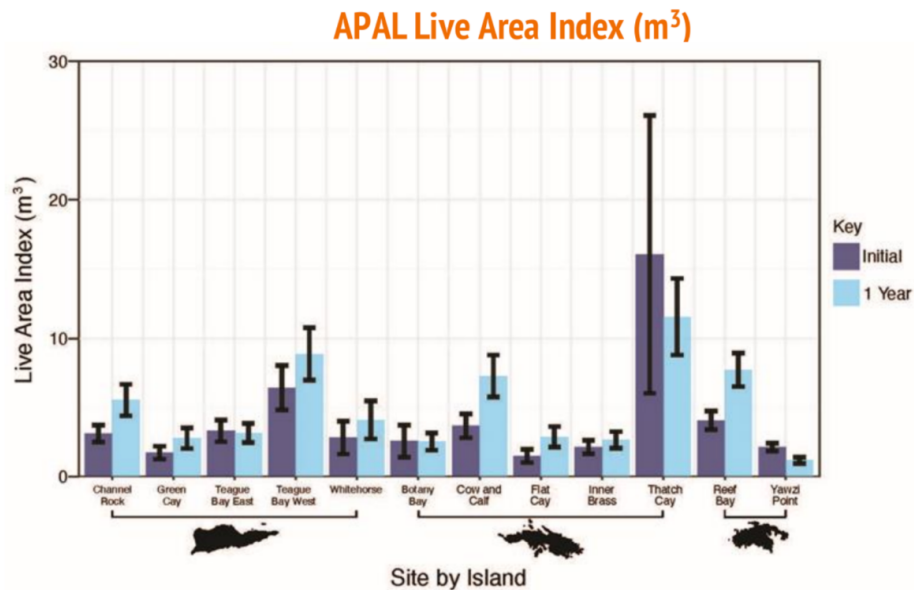


Image 10: *Acropora palmata* live tissue area across monitoring and restoration sites in the USVI

**Key Takeaways from Discussion:**

- Regional coral rescue coordinator position incorporated into the proposal
- Cannot list non ESA-listed species in a Section 6 Proposal but can incorporate project efforts that also benefit other, non-listed species
  - *Orbicella* spp. complex could be a good target for proposal- why are some colonies resilient to SCTL? Is it something about the colony (microbiome/genetic/symbionts) or perhaps their locations (microcurrents)?
- “Spawn-a-thon party” between Puerto Rico and the USVI, producing offspring from parent colonies across the region to increase genetic diversity

**Next Steps:**



- Matt/Miguel: Combine datasets across PR/USVI on the distribution and population structure of ESA-listed species
- Matt/Nilda will align priorities and get information from the *Acropora* Implementation Team following their meeting in Florida
- TBD: Contact Alice (Berg?) and Jen Moore (NMFS-OPR) for assistance on Section 6 proposal
- See what the ESA Section 6 funding priorities are (announced in May)
- Matt W., Miguel, Maria, and new regional rescue coordinator (if selected) will be the leads on regional Section 6 proposal

### National Science Foundation & Coral Disease, *Joseph Townsend (National Science Foundation)*

- NSF Mission: to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense; and for other purposes
- SCTL research can fit under many NSF departments, including: Ecology and Evolution of Infectious Diseases (EEID), Organismal Response to Climate Change (ORCC), Biodiversity on a Changing Planet (BoCP), Building Research Capacity (BRC-BIO), and Major Research Instrumentation (MRI)
- The best way to find an agency fit is to reach out to NSF, typically with a 1-page project summary. For most projects, [bioOce@nsf.gov](mailto:bioOce@nsf.gov) is a good start.
- NSF is a no-deadline program- submit proposals any time of year