

**Southeast Florida Coral Reef Initiative (SEFCRI) Team  
and Technical Advisory Committee (TAC) Meeting**

August 2-3, 2023  
Long Key Nature Center

**MEETING OBJECTIVES**

- Share the current status of the Coral ECA Plan and provide updates on the 5 Issues included in the plan.
- Provide feedback on Chapter 5 of the Coral ECA Plan Goals, Objectives, and Strategies.
- Identify opportunities for additions to Chapter 5 of the Coral ECA Plan, including specific projects within the 5 Issues.

**MEETING MINUTES**

**Day 1: Wednesday, August 2, 2023**

**SEFCRI Team Primary Attendees:** Griffin Alexander, Archie Ammons, Jennifer Baez, Andrew Bauman, Steve Blackburn, Angela Delaney, Kirk Dotson, Jane Fawcett, Joana Figueiredo, Alastair Harbone, Christie Hurley, Cristin Krasco, Anne Shoffner, Josephina Massa, Amanda Montgomery, Nick Morrell, Erik Neugaard, Patrick Quinn, Melissa Sathe, Stephanie Schopmeyer, Sara Thanner, Lauren Theis, Shelby Thomas

**SEFCRI Team Alternate Attendees:** David Barton Vance, Rebecca Ross, Martha Guyas, Jessica Garland, Katelyn Armstrong, Kirk Kilfoyle, Katy Brown

**SEFCRI TAC Attendees:** Piero Gardinali, Xaymara Serrano, Joshua Voss

**DEP CRCP Staff Attendees:** Mollie Sinnott, Rachel Skubel, Alycia Shatters, Lara Bracci, Maya Bhalla-Ladd, Jessica Price, Patrick Connelly, Taylor Tucker, Elena Kampion, Michelle Baptiste

**Public Observer Attendees:** Sam Cook, Britney Swiniuch, Kathy Fitzpatrick, Mark Hartman, Joanna Walczak

**Virtual listeners:** Lisa Gregg, Judy Lang, Ana Zangroniz, Erin McDevitt, April Price, Zach Boudreau, Jay Grove, Phillip Dustan, Michael Dixon, Arthur Mariano

**Welcome Day 1**

*Rachel Skubel, DEP CRCP*

Rachel welcomed the SEFCRI Team and TAC to Day 1 of the meeting, reviewed the agenda and general housekeeping items. She also reviewed facilitation roles, ground rules, primary vs. alternate roles, and the public comment process. Rachel reviewed the mission and structure of the SEFCRI Team and DEP CRCP staff roles.

## Coral Protection and Restoration Program Overview

*Sam Cook, NSU in support of DEP CPR*

- Florida Department of Environmental Protection (DEP) has 3 coral programs.
  - Coral Reef Conservation Program (CRCP): place-based managers in Southeast Florida.
  - Florida Keys National Marine Sanctuary (FKNMS): co-managed with NOAA, and oversee Aquatic Preserves.
  - Coral Protection and Restoration Program (CPR).
- CPR
  - Established in 2020, takes a reef-wide lens with 3 main focus areas:
    - Guide regional, state, and national coral reef authorities to ensure a unified voice on coral issues.
    - Administer state and federal funding on Florida's Coral Reef (FCR).
    - Provide leadership and programmatic support for disturbance response recovery and restoration initiatives.
  - Management and restoration goals
    - Support passage of the Coral Reef Conservation Act.
      - Included as amendment to defense bill in December.
      - NOAA coral program working on implementation of all elements.
    - Support Everglades restoration and unify with FCR efforts.
      - Florida's Coral Reef Coordination Team was established under the South Florida Everglades Task Force Working Group: focuses on big-picture water quality needs that overlap between the Everglades and coral reefs.
    - Finalize reef restoration strategy and secure seed funding to jumpstart Florida's 'coral restoration economy'.
      - Providing guidance for Restoration Strategy Development, a 3-tiered plan.
      - Working to include coral-specific language in state hazard mitigation plans to allow FEMA funding to be used for certain restoration projects in recognition of shoreline protection and flood reduction that coral reefs provide.
    - Support increased funding for EPA's South Florida Geographic Initiative.
      - Will increase water quality research and monitoring for South Florida.
  - Funding Pots for FY 23-24
    - Resilient Coastlines and Waste Funding - \$9M
      - 4 categories of projects: water quality, disease, restoration and propagation, and other.
    - Biscayne Bay Water Quality Improvement Grant - \$20M
      - Construction projects to improve water quality around the Bay.
    - Coral Reef Restoration and Recovery (FCR3) Initiative Grant - \$9.5M
      - Focus on supporting capacity and infrastructure for restoration and propagation projects.
      - Currently open for applications.
    - <https://FloridaDEP.gov/Funding>

- <https://ProtectingFloridaTogether.gov/state-action/grants-submissions>
- 2023 Technical Workshop Outcomes
  - Stony Coral Tissue Loss Disease (SCTLD) response is evolving. Was created to move forward understanding of the disease and what can be done about it.
  - Primary goal of group is to facilitate the recovery of FCR to a resilient, self-sustaining ecosystem.
    - Disturbance Response arm: focus on ongoing SCTLD response efforts and include new disturbances as they come up.
    - Recovery arm: will focus on broad ecosystem understanding of recovery including threat reduction and ecosystem restoration.
  - Overlaps with FRRP in goals and leadership, so combined to create: Florida Coral Reef Resilient Program (FCRRP).
    - Want to continue to utilize team already built, and encourage team coordination and communication.
  - Cross-cutting needs:
    - Dedicated capacity to coordinate new/expanded initiatives and share information.
    - Effective communication within the structure and with the public.
    - Supporting collaboration across thematic areas.
    - Funding diversification will be necessary.

## History of the Coral ECA Plan

*Mollie Sinnott, DEP ORCP*

- How did we get here?
  - Executive order 1998 established the U.S. Coral Reef Task Force (USCRTF).
  - In 2000 USCRTF adopted the Puerto Rico Resolution that called for the development of Local Action Strategies (LAS).
  - That framework led to the creation of the Southeast Florida Coral Reef Initiative (SEFCRI) Team (first meeting May 2003) that created LAS for the State to implement.
  - DEP CRCP was created to help facilitate and coordinate SEFCRI and to implement SEFCRI's recommendations.
    - Over 100 LAS projects were created in 2004.
    - Our Florida Reefs Community Planning Process (OFR) in 2014 included recommendations from the public.
    - In 2017 more LAS projects were developed.
  - The northern 1/3 portion of FCR was formally recognized in 2018 – the Kristin Jacobs Coral Reef Ecosystem Conservation Area (Coral ECA).
  - The majority of LAS projects have been completed or are ongoing.
  - DEP CRCP staff also work on projects developed as priorities internally and with NOAA partners.
- Coral ECA Action Plan
  - There is a need to better define place-based management through CRCP and to get better guidance on projects that need to be implemented moving forward.

- This is also an opportunity to streamline recommendations and to better engage the SEFCRI Team.
- Past recommendations indicated a desire for additional or more formalized protections for the Coral ECA. This all led to the creation of the draft Coral ECA Action Plan.
  - Internally applied for Aquatic Preserve (AP) designation, but no progress yet.
  - The Action Plan document is modelled after the State’s Aquatic Preserve Management Plan structure.
- Compiled all previous LAS projects, OFR recommendations, and FDOU 52 fisheries recommendations.
- Details goals, objectives, and strategies to guide DEP’s conservation and protection within the Coral ECA.
- Intended for CRCP to be able to implement by working with the SEFCRI Team to develop strategies into projects.
  - Some past recommendations are not projects that DEP can implement alone with out other agencies like FWC. These have been pulled out of the draft plan.
- Originally drafted by University of Miami, and preliminary feedback from CRCP staff, FWC, and Counties has been included in the draft that will be discussed at this meeting.

### **Current Status of the Coral ECA Plan**

*Rachel Skubel, DEP CRCP*

- Today we are bringing the Coral ECA Action Plan to SEFCRI key stakeholders, and will be focusing in on Ch. 5, the strategic planning chapter.
- Feedback will be taken in facilitated group discussions and via an online form.
  - Link to online form for written feedback:  
<https://survey.alchemer.com/s3/7455926/Feedback-on-DRAFT-Chapter-5-Issues-from-the-2023-SEFCRI-Team-Meeting>
- After this meeting CRCP staff will incorporate feedback and will send the draft plan out again for a more formal review.
  - Potential follow-up meeting this Fall for starting thoughts on project development.
- Facilitated group discussions will focus on higher level goals and objectives, but the online form is the place to include feedback on individual strategies and wordsmithing.
- Indirect action words like “support” or “coordinate with” are included in strategies that DEP cannot influence directly.
- A list of all LAS projects can be found at <https://southeastfloridareefs.net/las-project-status/>
  - Table organized by focus area that shows LAS status and links to products
- Overview of Coral ECA Action Plan chapters
  - 1: Introduction
    - FCR as a managed area, complexity in governance, and importance of stakeholder engagement.
  - 2: DEP’s Office of Resilience and Coastal Protection (ORCP)
    - How managed areas tie together.
  - 3: The Coral Reef Ecosystem Conservation Area
    - History, physical and cultural resources, overlapping management regimes.
  - 4: ORCP’s Management Programs

- Existing management programs in ORCP and CRCP.
- 5: Issues
  - Strategic planning chapter with 5 focal issues of issue-based management.
- 6: Administrative Plans
  - Facilities, offices, staff.
- Appendix
  - Lists recommended strategies external to DEP's purview.

### **Overview of Group Discussions**

*Rachel Skubel, DEP CRCP*

Rachel described the small group discussion process that was used to solicit feedback on the 5 Issues in Ch. 5 of the Coral ECA Action Plan, and the associated Goals, Objectives, and Strategies.

### **Small Group Discussion on Issue D: Community Education, Engagement, and Access**

Goals and objectives in Issue D were read to the group by Maya Bhalla-Ladd, DEP CRCP. Attendees then broke into small groups, with a diversity of stakeholders in each group, to provide feedback on the goals and objectives in Issue D. Small group discussions were facilitated by CRCP staff. Attendees were asked to write their feedback on sticky notes that were collected on flipcharts, and to consider the following questions:

1. Is the Goal or Objective appropriate for the Coral ECA?
2. Is the Goal or Objective feasible within a 10-year timeframe?
3. Is there work already being done supporting the Goal or Objective?
4. What are potential roadblocks to completing the Goal or Objective?
5. Other Comments.

Feedback was summarized and reported out at the end of the discussion and that summary is recorded below.

Goal D1: Evaluate access and equity of access to the Coral ECA.

- Is appropriate for the Coral ECA.
- Is feasible in 10 years.
- Roadblocks: language barriers, closing gap in education of access.

Goal D2: Build awareness of what the Coral ECA is and its goals and attributes via education and outreach.

- Is appropriate for the Coral ECA.
- Most think is feasible in 10 years, but all the strategies together are a big body of work that will need significant resources. Some thought this will need to continue beyond 10 years.
- Hard to evaluate success in 10 years, this is a continual effort. Should be measured in milestones at time intervals (5, 10 years...).
- There is plenty of outreach, but there may not be a lot of connectivity among the programs. And no standards on how to close gaps in access or equity.
- Need an increase in coordination among communities.
- Agencies need more pay to decrease staff turnover.

- Funding and capacity for social sciences should be increased.
- Step one to get people to the ECA is to make sure users know how to swim.
- Need to increase engagement from schools and curriculum.
- Access to the reef varies according to county, distance of reef from shore, economic status, if users own a boat, quality and number of access points, etc.
- Terrestrial parks don't have issues providing user access in terms of transportation, but not the same on the water. Ex: pontoon boats funded by grant resources that take people on the water and teach them about the resource.
- Access needs to be defined. Is it actually being in/on the water? Does it include viewing information online? Is access to a beach the same as access to the Coral ECA?
- Need to bring accessibility to the people instead of them going to the reef (i.e. virtual reality).
- Effectiveness of outreach programs should be evaluated.
- Roadblocks to access will increase with increasing population.
- Need to advertise in public areas (airports, BnBs).
- Social media approaches to couple awareness and evaluating effectiveness – providing information about user groups knowledge base levels.
- Western sections of counties are underrepresented.
- Making people care about the reef and helping them understand the importance of reefs is difficult, and there are sometimes cultural barriers.
- Many educational programs are focused on kids, need to make sure to include adults.
- Need to increase access to boats and training to use them while protecting the resources.
- Socioeconomic backgrounds is a big roadblock, should look at recent socioeconomic studies to show increase in awareness.
- One-stop-shop website to show where to access the reef, and all other details like parking, how far to swim out, etc.
- Make it a problem for people so they will be interested.
- Target real estate by showing that waterfront properties are protected by the reef.

### **Public Comment**

*Melissa Sathe, Friends of Our Florida Reefs*

- Quickly introduce FOFR.
- Solicit Board Directors.

### **Small Group Discussion on Issue B: Sustainable Economic and Recreational Use**

Goals and objectives in Issue B were read to the group by Alycia Shatters, DEP CRCP. Attendees then broke into small groups, with a diversity of stakeholders in each group, to provide feedback on the goals and objectives in Issue B. Small group discussions were facilitated by CRCP staff. Attendees were asked to write their feedback on sticky notes that were collected on flipcharts, and to consider the following questions:

1. Is the Goal or Objective appropriate for the Coral ECA?
2. Is the Goal or Objective feasible within a 10-year timeframe?
3. Is there work already being done supporting the Goal or Objective?
4. What are potential roadblocks to completing the Goal or Objective?

## 5. Other Comments.

Feedback was summarized and reported out at the end of the discussion and that summary is recorded below.

Goal B1: Characterize the different uses and use trends in the Coral ECA.

- Need to focus education on groups that actively using and/or damaging the reef. Also need to focus on stakeholders that want to be involved.
- Emphasis on how to promote reef use. Think about rotating reefs or overwhelming one area (like an artificial reef), to protect another area. Mooring buoys on natural reefs.
- Repercussions to damaging the reef, like the Keys program that charges for rental boats returned with prop damage. Incentivize companies and de-centivizes reef damage.
- Increase CRPA awareness.
- What does it mean to characterize different uses? Are use trends characterized already? Some information exists, but how much is needed?
- Objectives could be streamlined.

Objective B1.1: Update stakeholder studies on uses, use patterns, crowding (social acceptance of other activities and stakeholder groups), areas of use conflicts, and impacts on Coral ECA resources by various resources users.

- Existing use surveys, fishing in particular, are not sufficient to provide information specifically about the Coral ECA. Getting at that level will be challenging for several reasons.
- Need more fishery-independent data. Have NCRMP and might be able to look at data from commercial vessels.
- What studies does 'update stakeholder studies' refer to?

Objective B1.2: Establish monitoring programs and protocols for uses and use patterns and impacts in the Coral ECA.

- This objective is not appropriate for the ECA, likely new monitoring programs will not be established.
- All strategies are related to fisheries rather than encompassing all the uses.
- There is a lot happening already, this should be to 'Support', not 'Establish'.

Goal B2: Reduce impacts from fishing, diving, and other uses (recreational and commercial) in the Coral ECA to support ecosystem integrity and function.

- Depending on what level of reduction is needed, may not be feasible in 10 years.
- Missing objectives, just focused on fishing and diving and not other uses like boating.
- Target looking at different groups within wider uses, like fly fishing or spearfishing within the "fishing" user group.
- Very ambitious goal. Reducing impacts includes a lot of different aspects like monitoring. Can have many regulations to reduce impacts, but that doesn't ensure they will be followed. Also takes a long time to change a regulation within an agency.
- Roadblock: lack of enforcement.
- Ecosystem function needs to be defined.

- Good effort to coordinate with all agencies.

Objective B2.1: Support evaluating management options to reduce fishery use pressure on benthic habitat.

- A theme throughout this series of objectives is that using the terms fishing and diving use pressure doesn't match with overall goal of reducing impacts of fishing/diving. Reducing pressure is not the same as reducing impacts.
- Some user groups are protective of specific sites.
- Data on impacts of lobster traps is needed.

Objective B2.2: Support evaluating management options to reduce diving use pressure on affected resources.

- Feasible in 10 years.
- Obj B2.1 and B2.2: One mentions benthic resources and the other mentions affected resources, should be consistent.
- Enforcement and staffing would be a challenge.
- There are roadblocks with rotating sites, but if one site is used a lot, there is less pressure at other sites.

Objective B2.3: Evaluate and implement approaches to minimize pressure at high use areas and intra- and/or inter-group conflicts over resources.

- A challenge would be funding for mooring buoys in the 4 counties.
- This is a long laundry-list, need to narrow down what is most important.
- Use artificial reefs for beginner diver use to alleviate pressure.
- Should spearfishing be allowed on wrecks?

Goal B3: Increase stakeholder and public awareness on use-resource linkages, use impacts, and best practices.

- Push concern for economic valuation of reefs.
- Bringing Blue Star-like programs to an individual level. Could incorporate environmental education in boaters card classes.
- Do we need to repeat outreach and awareness in every issue, or should it be pulled out into a cohesive issue that includes all the 5 areas? It is currently repeated within each issue.
- Need to better define/clarify the language or some of the words used.
- Strategies are a little redundant and could be streamlined.
- Roadblock: lack of enforcement.

Objective B3.1: Assess stakeholder and public awareness on use-resource linkages, use impacts, and best practices.

- Need to define use-resource linkages.

## **Brainstorm Session**



Attendees were asked to identify anything they felt was missing from Ch. 5 of the Coral ECA Action Plan by writing ideas on sticky notes that were organized by similarity on flipcharts. Ideas are summarized below.

#### Issue D: Community Education, Engagement, and Access

- Access and education are mixed across issues, disambiguate and have separate goals for access, outreach, and education.
- Strategy should be added regarding sharing educational resources more broadly and directly to school boards to share with their staff.
- Provide education to insurance actuaries on how real estate property values depend on reef condition, wave action, mangroves, etc.
- Standardize exit surveys and language to evaluate awareness regarding reef knowledge and resources already available at state parks, on dive trips, etc.
- Expand media resources/virtual access – streaming, social media.
- Partnership with Visit Florida to offer information about ECA to reach tourists before arriving in Florida.
- Develop VR or video games for students in school about the ECA.
- Summer camps for marine biology, expand on existing ones to include coral education. Run by grad students?
- Identify priority audience and illustrate why they are a priority to help inform community partners, outreach strategies, and funding sources.
- Engage more with Frost Museum.
- Acknowledge the realities of class segregation/systemic challenges that still exist and how this effects access.
- Develop first and secondhand access for communities that don't have access to the beach. First tell them about the reef, then take them there.
- Define access: direct use of the reef through diving or fishing? Does access include virtual indirect access?

#### Issue B: Sustainable Economic and Recreational Use

- Need a lot of data to identify use patterns.
- More consistency in data collection.
- Drones used for recreational and commercial use data collection.
- Get data from satellite/radar programs.
- Concentrate use of central reefs vs returning use.
- Incentives for safe boating courses; discounts to encourage more use.
- Need to gather data from other sources than fisheries.
- Make reef awareness part of dive certification training.
- Include reef awareness education in boating training.
- Use a similar service as mobile phone companies to determine traffic patterns to track activity on reefs.
- Phone notifications for when you are in an MPA or regulated area.
- Incentivize commercial fishing charters to use an AIS. Can this be enforced?

## **Coral Champion 2023 Announcement**

*Maya Bhalla-Ladd, DEP CRCP*

Maya announced Keri O'Neil as the 2023 SEFCRI Coral Champion and presented her with a certificate of appreciation. Keri works as the senior coral scientist at the Florida Aquarium where she cares for corals rescued from SCTL and oversees the coral spawning lab that was able to induce spawning of the threatened pillar coral. Florida Aquarium shared a short video that showcased the work being done by Keri and her team.

## **Wrap Up and Adjourn**

*Rachel Skubel, DEP CRCP*

Rachel thanked everyone for a good first day and let everyone know the rest of the issues will be covered in Day 2 of the meeting.

## **Adjourn Day 2**

### **Day 2: Thursday, August 3, 2023**

**SEFCRI Team Primary Attendees:** Griffin Alexander, Archie Ammons, Jennifer Baez, Andrew Bauman, Steve Blackburn, Troy Craig, Angela Delaney, Jane Fawcett, Joana Figueiredo, Alastair Harbone, Christie Hurley, Jocelyn Karazsia, Amanda Montgomery, Nick Morrell, Stephanie Pravata-Clark, April Price, Patrick Quinn, Melissa Sathe, Stephanie Schopmeyer, Sara Thanner, Lauren Theis, Shelby Thomas

**SEFCRI Team Alternate Attendees:** David Barton Vance, Rebecca Ross, Martha Guyas, Jessica Garland, David Moss, Katelyn Armstrong, Kirk Kilfoyle, Katy Brown, Dan Clark

**SEFCRI TAC Attendees:** Piero Gardinali, Dave Gilliam, Kurtis Gregg, Xaymara Serrano, Joshua Voss

**DEP CRCP Staff Attendees:** Mollie Sinnott, Rachel Skubel, Alycia Shatters, Lara Bracci, Maya Bhalla-Ladd, Jessica Price, Patrick Connelly, Taylor Tucker, Elena Kampion, Michelle Baptiste

**Public Observer Attendees:** Britney Swiniuch, Thomas Quintero, Alexa Pavan, Kathy Fitzpatrick, Mark Hartman, Henry Briceno

**Virtual listeners:** Phillip Dustan, Cristin Krasco, Chris Bergh, Joey Massa

## **Welcome Day 2**

*Rachel Skubel, DEP CRCP*

Rachel welcomed the SEFCRI Team and TAC to Day 2 of the meeting and reviewed the agenda and general housekeeping items. She also reviewed facilitation roles, ground rules, primary vs. alternate roles, and the public comment process. The microphone was passed around the room for everyone in attendance to introduce themselves and say what their affiliation is.

## **Data Analysis of Long-Term Southeast Florida Offshore Water Quality Monitoring**

*Henry Briceño, FIU*

- Presenting data on the offshore water quality monitoring program from 2016-2021.
  - This data set includes samples taken at the 9 Inlet Contributing Areas (ICAs) along Southeast Florida and was analyzed at two different laboratories for 10 analytes.
  - One issue with this dataset is that it includes many non-detects, which can make running statistics challenging especially for management needs.
- Goal of Phase I was to evaluate and prepare the data for assessment.
- Phase II tried to answer the same questions as previous analyses, but included more recent data and used a different methodology for data analysis for comparison.
  - Prior analysis of the data used imputed values for non-detects. These values don't necessarily correlate to a sample taken at a specific location.
- Several different analyses were conducted to look at the data;
  - Principal Component Analyses
    - Generally, reef, inlet, and outfall sites grouped together. Notable exceptions were that Lake Worth inlet samples were most similar to the reef samples, and St. Lucie reef samples were more similar to inlet samples.
  - Cluster Analysis of the ICAs and site types showed similar groupings.
  - Multidimensional Scaling (helps deal with missing values), also showed similar groupings.
  - Paired t-tests were conducted for site types to look at difference between ICAs and Surface vs. Bottom samples.
- Water Quality Benchmarks were estimated using several different approaches to see how they compare. In the end the values created from each approach were similar.
  - A literature review was conducted to determine how the measured water quality values in the Coral ECA compare to relevant published benchmarks, focusing on Southeast Florida.
    - 24 relevant annotated bibliographies were provided.
    - A table of benchmarks found in the literature was created for relevant analytes, which was then used to estimate benchmarks.
  - Used the EPA 75<sup>th</sup> Percentile Approach was used to estimate benchmarks for each ICA using the offshore dataset.
  - Used CUSUM Approach developed at FIU to look at benchmarks in relation to drivers of environmental change such as Chlorophyll a
- Questions Answered
  - Water quality is different among the ICAs.
  - Water quality is different among site "types" (inlet vs. reef vs. outfall).
  - Water quality is typically significantly different between surface and bottom samples from the same site.
  - Comparable water quality benchmarks for relevant analytes were generated using 3 different approaches.
- The final report for this project will soon be posted on the DEP CRCP website.

**Small Group Discussion on Issue A: Water Quality**

Goals and objectives in Issue A were read to the group by Alycia Shatters, DEP CRCP. Attendees then broke into small groups, with a diversity of stakeholders in each group, to provide feedback on the goals and objectives in Issue A. Small group discussions were facilitated by CRCP staff. Attendees were asked to write their feedback on sticky notes that were collected on flipcharts, and to consider the following questions:

1. Is the Goal or Objective appropriate for the Coral ECA?
2. Is the Goal or Objective feasible within a 10-year timeframe?
3. Is there work already being done supporting the Goal or Objective?
4. What are potential roadblocks to completing the Goal or Objective?
5. Other Comments.

Feedback was summarized and reported out at the end of the discussion and that summary is recorded below.

Goal A1: Improve water quality both within and entering the Coral ECA to meet the needs of natural resources.

- It is a good idea but challenging.
- Roadblocks: growing population, research capacity, funding.
- Standardize offshore and inshore sampling for water quality issues with respect to corals.
- Look at different aspects of nutrients, not just inputs. For example, what is being resuspended.
- Add strategies to this section aimed at establishing benchmarks for water quality, including literature reviews.
- Do not think its achievable in the 10-year timeframe, what does “improved” really mean? Will this meet our ecological goals, are we looking at nutrients and chemicals?
- Upland pollution is very hard to address, funding is different for each area.
- Need better methods for determining water quality, including saltwater.
- There are multiple projects out there, for example SECREMP.
- Use SMART goals to create an action plan for nutrients.

Objective A1.1: Maintain, expand, and coordinate a unified monitoring program and support data analysis to detect and identify sources of pollution flowing through inlets (N-71).

- Goal and objective should reflect establishment of benchmarks.
- Define “unified” – is this referring to unified criteria?
- Not enough NELAC certified labs for water quality monitoring in Miami-Dade.
- Consider how to change existing infrastructure so cleaner water is entering Biscayne Bay. Currently a RAP process is happening, should every area do one?
- Milestones need to be revisited, for example sediment transport.
- Regional hydrodynamic modelling recently done.
- Need to increase the number of monitoring stations.

Objective A1.2: Coordinate with municipalities and local governments to reduce point and non-point land-based sources of pollution that enter into the Coral ECA.

- Programs in place already, but can always be expanded.

- Roadblock: A lot of trash and debris end up in storm drains, a lot of local communities working on these programs, legislation doesn't tend to keep up with these issues.
- Appropriate for ECA and feasible in 10-year timeline.
- Need updated utility area studies, septic to sewer, roadblock = various approaches/stakeholders and various contributing areas when looking at water quality considerations.
- Who controls what water? DEP as state agency could help coordinate understanding.
- More being done for salinity, include local governments and municipalities.
- Roadblock: New, more specific stormwater rule coming out in DEP in 2024.
- Spell out with more definitions for LBSP, like emergent contaminants such as PFAS, relating to coral reefs.

Objective A1.3: Coordinate with municipalities and local governments to reduce wastewater, stormwater, and groundwater pollution to watersheds associated with priority reef areas to improve water quality and reef condition (N-78 and FDOU 52).

- Can be expanded upon, resources are a main roadblock, updates on process of closure of sewer plants.
- Broward purchased plots of land to treat water for irrigation/account for 2025 shutdown.
- Changing human behavior is difficult.
- Different ways to reduce (trace?) concentrations of pharmaceuticals.
- What are priority reef areas? Keep in mind reef condition and location when establishing priority reef sites.
- Make local government and municipalities aware of funding/project opportunities, for example the Biscayne Bay Water Quality Improvement Grant, to help fill in gaps where cities and counties don't have funding for projects.
- Comments regarding fertilizer enforcement.
- Turbidity is already underway, maybe combine with above objectives.

Objective A1.4: Reduce vessel-based discharges.

- No-discharge zones is a good idea. Need to identify what is already in place for vessel discharge, tremendous number of vessels in South Florida.
- Enforcement is very difficult for vessel discharges, so focus on direct education to owners – how much it impacts them and their boats/property - rather than environmental impacts.
- Appropriate to the ECA and feasible within 10 years to investigate vessel-based discharges, important consideration.
- Consider the cruise industry and ballast water dumping.
- What is a vessel-based discharge (ballast water?), identify specific standards for each type of discharge.
- Support Coast Guard, enforcement is difficult for massive vessels offshore.
- Potentially fell short – why not 'eliminate' instead of 'reduce' vessel discharges.
- What else is included besides ballast water?
- Energy infrastructure is unclear, using energy technology on ships. Challenges involved with corals have to be considered.

Goal A2: Increase public and industry awareness about water quality issues in the Coral ECA and actions that can be taken to improve water quality.

- Not just education, need to provide the public with actual solutions they can use.
- Education and awareness are constant, but things are always changing. Need to define audience and what individuals can do to help the reef, use financial incentives.
- Educate on green infrastructure alternatives.
- Add elected officials to the target audiences.
- Don't just focus on LBSP, also focus on pollution from vessels.
- Make it more convenient to the public to use alternative other than fertilizers.
- Need more enforcement.
- Need more outreach to the central part of the state.
- Living shorelines are difficult to do, need permits, more partnership with FWC.

Objective A2.1: Educate the local community and visitors on the effects of land-based sources of pollution to encourage reduction of the amount of pollutants entering storm drains and waterways (N-1).

- Objectives talk about water quality, seems specific to LBSP - does this include vessels? If not, that component needs to be called out in the awareness portion of this Issue.
- Markers identifying storm drains that lead to the bay, cheap + effective. Include information on how much pollution a day enters the bay.
- Definition of 'reduction' needed.

### **Coral Reef Restoration Plan for the KJ ECA**

*Chris Bergh, TNC*

- Coral reef restoration work has been ongoing in the Coral ECA for 20 years. The restoration plan is about coordinating efforts for those doing and funding restoration.
- Resilience Action Plan for Florida's Coral Reef
  - Coordinated by TNC on behalf of coral reef managers.
  - Goals
    - Enable resilience-based management of Florida's Coral Reef.
    - Support public policy that creates the enabling conditions for reef recovery.
    - Enable stakeholders to support the future of the reef and those who depend on it.
  - <https://www.nature.org/content/dam/tnc/nature/en/documents/Resilience-Action-Plan-for-Floridas-Coral-Reef-2021-2026.pdf>
  - Focuses on threat reduction to reefs, but includes restoration goals and objectives.
- Restoration plans would also achieve goals at the entire reef scale, leverage funding, and avoid duplication of efforts.
- Restoration plans are needed not to supplant current efforts, but to create an opportunity to coordinate among them.
  - FKNMS Mission Iconic Reefs
  - National Parks
  - Ongoing efforts in ECA
- Statewide Coral Reef Restoration Strategy

- Ecological goals of restoration.
- Restoration principles.
- Maps using coral data to predict where key species are more likely to survive and contribute to overall recovery of FCR.
- Guidance on how to use the Strategy to inform detailed planning.
- ECA Restoration Planning – Draft
  - Goal 1 focused on coral populations and ecological attributes.
  - Goal 2 focused on ecosystem services and benefits that people derive from reefs.
  - Developing “neighborhoods”: geographic areas that represent high value habitat and high value as a source of larvae.
  - Defining exclusion zones not good for restoration.
  - Will include a menu of intervention options.
  - Working on unified metrics to measure success. Compare restoration results with natural population dynamics/conditions. Will all be rolled into adaptive management.
- Next steps:
  - Finalize Statewide strategy maps – new coral larval connectivity data.
  - Develop maps to refine site selection in the ECA.
  - Develop metrics for monitoring of restoration success.
  - Long-term: Conduct ground-truthing exercises to choose sites and build out detailed plans for each site.

### **Small Group Discussion on Issue E: Building Ecosystem Resilience**

Goals and objectives in Issue E were read to the group by Taylor Tucker, DEP CRCP. Attendees then broke into small groups, with a diversity of stakeholders in each group, to provide feedback on the goals and objectives in Issue E. Small group discussions were facilitated by CRCP staff. Attendees were asked to write their feedback on sticky notes that were collected on flipcharts, and to consider the following questions:

1. Is the Goal or Objective appropriate for the Coral ECA?
2. Is the Goal or Objective feasible within a 10-year timeframe?
3. Is there work already being done supporting the Goal or Objective?
4. What are potential roadblocks to completing the Goal or Objective?
5. Other Comments.

Feedback was summarized and reported out at the end of the discussion and that summary is recorded below.

Goal E1: Evaluate the effects of environmental change on Coral ECA resources.

- Appropriate for the ECA.
- Maybe feasible within 10 years: ECA has jurisdiction but little agency.
- Roadblocks: having political will to tackle climate change issues, scaling up, money/resources.
- Need to pull information from scientific literature, no clear baseline, conditions are constantly shifting.
- Change is already happening and accelerating, so framework needs to be established.
- Goal should focus on climate change.

- Current monitoring is in place to evaluate the effects environmental change, but need to incorporate climate change as a metric.
- Important but not clear in literature review.
- Issues are accelerating therefore programs should too.

Objective E1.1: Establish a framework to assess climate change effects on ecosystem function within the Coral ECA over time.

- Select a few species and include genetics.
- Partner with all agencies.
- Need to define ecosystem function – not enough studies to define this yet.

Goal E2: Evaluate and implement adaptation measures that promote coral reef ecosystem recovery and resilience.

- Feasible within 10 years, but will always be evaluating and implementing adaptation measures.
- May not be feasible in 10 years because studies quantifying function may take longer than 10 years.
- Focus on restoration infrastructure, finding financial resources, and what will work for restoration long-term.
- Simultaneously look at fish data.
- Benthic systems are very different between adult coral cover vs. frag trees, need adult coral sexual reproduction.
- Benthics need more analysis, need to investigate more eco-communities (more than SAVs and Scleractinia).
- We are missing turf algae, which effects quality of habitat. Bottleneck effect – limited recruitment because we have so much EAM (epilithic algal matrix) in Florida.
- Need to address the lack of larvae settling on the reef.
- Collaborate more with FWC.
- The term adaptation is strange, restoration is more of a reaction to what is happening. But do recognize that adaptive management needs to be included in restoration planning.
- Many strategies in Goal 2 don't include options to evaluating set of education success.
- Increase partnership with FWC.
- Improve restoration strategies, and include use of octocorals in propagation.
- Merging of FRRP and disturbance response network, FCRRP, should be incorporated in this issue.
- Take a whole ecosystem, multi-pronged approach considering in-situ and ex-situ nurseries, herbivory, predation, invasive species.
- Intentional restoration design so structures are multifunctional and still serve the environment.

Objective E2.1: Integrate the use of coral reef restoration and propagation techniques.

- GCC and funding, need new strategy ensuring permitting agencies collaborate to streamline goals.



Objective E2.2: Promote long-term state and local adaptation measures that minimize effects of short-term and long-term disturbances, including climate change, to Coral ECA resources.

- Red tape slows everything down including novel adaptation measures.
- Involve wide range of stakeholders.
- Focus on water quality.
- Living and armored shorelines: public interest is against some efforts and need buy-in.

Objective E2.3: Reduce the impacts of invasive species on native coral reef ecosystem communities.

- Invasive species might not need its own section, could add “including the removal of invasives” to E2.2. Or reword to stress that including removal of invasives would promote adaptation measures.
- Don’t forget about future invasive species.
- Need more experiments and literature reviews.

Goal E3: Develop and implement outreach programs to educate stakeholders on the effects of climate change on coral reef ecosystems.

- Roadblock: lack of awareness, people “looking the other way”.
- Politics are hard.
- Include individual action items.
- Should be incorporated into broader education/outreach issue, there is a similar goal/objective for each issue.
- Needs direct management and responsibility, increased funds.
- Increase resiliency over time.
- Can be intentional with infrastructure (biomimicry).
- Distribute accountability.
- Systematic approach to assigning responsibility.
- Define stakeholder groups and tailor engagement.
- Corporate/industry accountability through resources exploitation percent usage taxes/fees.
- Sustainable business models needed at scale.

Goal E4: Build programmatic resilience by ensuring the long-term fiscal viability of Coral ECA management.

- Define ‘programmatic resilience’.
- Needs to be address through legislation.
- Long term projects need long term funding sources.
- Change term ‘fiscal’ to ‘financial’.
- Change ‘fiscal viability’ to ‘support’. Or change E4.1 to be the actual goal.
- Change ‘programmatic resilience’ to something more like ‘stability’.
- Add mitigation funding in addition to the other sources of funding.

#### **Public Comment**

*Melissa Sathe, Friends of Our Florida Reefs*

- Introduce FOFR and encourage social media follows and shares.

*Dan Clark, Cry of the Water*

- Current Events.
- ECA no management plan no teeth.
- Not only group to not have plan implemented (Blue-Green task force).
- Outfall Plan B.

**Small Group Discussion on Issue C: Ecosystem Disturbance Response and Recovery**

Goals and objectives in Issue C were read to the group by Patrick Connelly, DEP CRCP. Attendees then broke into small groups, with a diversity of stakeholders in each group, to provide feedback on the goals and objectives in Issue C. Small group discussions were facilitated by CRCP staff. Attendees were asked to write their feedback on sticky notes that were collected on flipcharts, and to consider the following questions:

1. Is the Goal or Objective appropriate for the Coral ECA?
2. Is the Goal or Objective feasible within a 10-year timeframe?
3. Is there work already being done supporting the Goal or Objective?
4. What are potential roadblocks to completing the Goal or Objective?
5. Other Comments.

Feedback was summarized and reported out at the end of the discussion and that summary is recorded below.

Goal C1: Continue and expand regular monitoring of corals and other Coral ECA benthic resources.

- Insurance companies need sustainable investment.
- Already have long-term monitoring methods that can be adapted to capture the information we need. But requires long-term funding.
- Roadblock: inconsistent data collection throughout the region.
- AOML has stations.
- Would require more funding.

Objective C1.1: Continue and expand benthic monitoring in the Coral ECA.

- Roadblocks: funding, standardization.

Objective C1.2: Continue and optimize monitoring related to coastal construction adjacent to the Coral ECA.

- Need more stringent turbidity standards and penalties during construction.
- Utilize what we already have (ex: using DRM to capture impacts from coastal construction).
- Adjust the standards that coastal construction projects are held to and streamline surveys to capture this information.
- Support long-term efforts – what is the baseline?
- Need appropriate tools for monitoring sedimentation, not just turbidity.
- Coastal construction monitoring impact analysis data could be relevant to include.

Goal C2: Reduce local and regional stressors on the coral ecosystem.

- Goal is broad and lofty, will need continued effort over 10 years.
- Most strategies are focused on direct impacts, need more strategies focused on indirect impacts, that are more of a response.
- Strategy wording didn't identify local or state agencies that are responsible for the reporting or response efforts.
- Strategies are more about monitoring for impacts (ex: utilizing DRM) instead of the goal of 'reducing' those impacts.
- Not specific enough, needs more focus on physical impacts.
- Being able to address issues in a timely manner and have effective response.

Objective C2.1: Reduce direct and indirect impacts in the Coral ECA.

Goal C3: Educate the public and stakeholders on Coral ECA habitats, ongoing stressors, and approaches to remediation, protection, and/or restoration.

- Need to create incentives.
- Goal C3 should be moved into Issue D.
- Continue focus on anchoring impacts on the reef.

Objective C3.1: Improve public involvement in resource protection.

- Objective C3.1 should be the goal – there is a difference between education and actual actions that lead to recovery.
- There is a disconnect with students submitting bleachwatch reports.

Goal C4: Support efforts to minimize coastal development impacts on corals and associated resources in the Coral ECA.

- Sustainability of long- vs. short-term approaches, especially considering environmental changes.
- Roadblocks: limited funding and staff, requires legislation changes, too much construction.
- Consider other global examples of BMPs for coastal construction to minimize impacts on reefs.
- Make data more accessible.

Objective C4.1: Continue to improve management and maintenance activities of beaches to reduce impacts to coral reefs (including nearshore reefs), create more sustainable beaches, and minimize impacts from future renourishment projects (S-120).

- UMAM may not be appropriate.
- Have BIP more involved.

Objective C4.2: Support improvement of impact minimization and mitigation activities for unavoidable impacts to resources to reduce and offset lost ecosystem functions (OFR N-117 and FDOU 52).

- Define 'unavoidable impacts'.
- Need clarity in wording of objective and some of the strategies are vague.
- Needs to be allowance for alternate forms of enhancement methods.

Goal C5: Improve ecosystem understanding to facilitate decision-making that accounts for ecosystem-scale processes.

- Need benchmarks and criteria for success.
- Combine goal and objective.
- What is the existing ecosystem conceptual model? SeaGrant published a book on Tropical Currents – is this what the plan is referring to?

### **Brainstorm Session**

Attendees were asked to identify anything they felt was missing from Ch. 5 of the Coral ECA Action Plan by writing ideas on sticky notes that were organized by similarity on flipcharts. Ideas are summarized below.

Issue A: Water Quality, Issue E: Building Ecosystem Resilience, and Issue C: Ecosystem Disturbance Response and Recovery

- Connectivity between protected areas; working with their success on projects within the ECA.
- Response to disturbances has been big – SCTLD; think about preparedness for disturbances and what disturbances we want to prioritize and be prepared for. Make sure there are connections between SEFCRI and the newly formed disturbance response network, and that both groups are aware of what decisions are being made. Section needs to be built out a little bit more.
- Lack of recovery may be due to the fact that we are not looking at the entire system, like how turf algae impact coral larval settlement. Need more projects on the other benthic organisms beyond hard coral cover that impact the recovery of the system. Sponges and other organisms tend to be overlooked and may be inhibiting the recovery of the system.
- One full product/method for database sharing – show what’s been done overall.
- Reducing indirect impacts and not being restricted to monitor only during seasons. Being proactive and prepared for future temperature and physical events instead of reacting when a disturbance occurs.
- Turbidity standards are not suitable for coral reef habitat.
- Holding people more accountable and using AI tools to increase access to products.
- Foster an understanding that the reef is part of a large ecosystem that needs cohesive management.

### **Wrap Up and Adjourn**

*Rachel Skubel, DEP CRCP and Mollie Sinnott, DEP ORCP*

Rachel let everyone know we have posters of the new Coral ECA signage that has been posted at boat ramps, in state parks, etc. If anyone has a place to put a poster where the public will see it and benefit from the information let us know and we will give you a poster.

Mollie reiterated that the Coral ECA Action Plan is still a draft. All of the feedback from this meeting and the online survey will be incorporated and will go to partner for review again once it has. Thanks for your patience as we work on it. One silver lining of not being mandated to create this plan is that we have the flexibility to adjust and aren’t held to specific wording if we notice down the line an objective needs to change. This allows us to keep this as an adaptive management plan. We welcome all constructive feedback, positive and negative, so please use the online survey that will be sent out. It is

long, so feel free to submit in sections. We want to engage the SEFCRI Team a lot more and get back to a better partnership of SEFCRI and CRCP working together on project development.

Rachel thanked FOFR for their support of our program, including providing lunch at the meeting. She thanked everyone for a great meeting and reminded folks to fill out the online survey.

## **Adjourn Day 2**