2015 Southeast Florida Coral Disease Outbreak

Coordination Meeting #1
August 28, 2015
2:00 – 3:00pm

Attendees:

- Erick Ault (FWC); Jennifer Baez (FDEP CRCP); Meghan Balling (FDEP CRCP); Jeff Beal (FWC); Karen Bohnsack (FDEP CRCP); Wes Brooks (Office of Ileana Ros-Lehtinen); Mark Chiappone (NSUOC); Eva DiDonato (NPS); Kelly Egan (FDEP CRCP); Nicole Fogarty (NSUOC); Bill Goodwin (FKNMS); Kurtis Gregg (NOAA); Kelsey Jeffers (FKNMS); Meaghan Johnson (TNC); Jan Landsberg (FWC); Kate Lunz (FWC); Caitlin Lustic (TNC); Lauri MacLaughlin (FKNMS); Kerry Maxwell (FWC); Cliff McCreedy (NPS); Erin McDevitt (FWC); Rachel Pawlitz (FKNMS); Fran Perchick (TNC); Esther Peters (GMU); Jena Sansgaard (PBC); Melissa Sathe (FDEP CRCP); Stephanie Schopmeyer (RSMAS); Bill Sharp (FWC); Mollie Sinnott (FDEP CRCP); Anna Toline (NPS); Josh Voss (HBOI); Joanna Walczak (FDEP FCO); Brian Walker (NSUOC); Amber Whittle (FWC); Daron Willison (FDEP CRCP); Cheryl Woodley (NOAA); Ana Zangroniz (FDEP CRCP)

Meeting Summary:

Meeting Purpose

- Karen Bohnsack introduced herself as the Reef Resilience Coordinator for the Florida Department of Environmental Protection's Coral Reef Conservation Program. Karen acknowledged all for being on the call, especially those located in South Florida and doing hurricane preparations. Karen asks that all stay on mute following individual introductions for record-keeping purposes.
- *Meeting purpose:* To coordinate a response effort among regional partners to characterize (mainly the prevalence of) the existing coral disease outbreak and try to identify potential causation or correlations. Intention is to coordinate a response. Not everyone will be directly involved with the response, but the hope is to solicit information from partners in the field.
- Joanna Walczak, Southeast Regional Administrator for the Florida Coastal Office, introduced herself and her role, which is the State's point of contact for all coral-related issues and the point of contact for the United States Coral Reef Task Force. Joanna explains that this region and neighboring areas are experiencing significant outbreak of disease. We are trying to put together a timeline of what we know versus what we don't know.

Overview of Southeast Florida Disease Outbreak

- Reports received of isolated disease observed in April/May in Miami-Dade County.
- Late June and into July we received reports of widespread disease, this is distinctive. Bill Precht documented a lot of this in Miami-Dade County and Broward County.
- This event is of increased concern when compared to past years reports: there seem to be multiple coral diseases at play. Many diseases can exhibit similar signs, and several species are being impacted.
- Stony corals are most reported as affected, but some reports have also indicated diseases observed on sponges and gorgonians.

- This outbreak is exacerbated by warmer water temperatures. This is an El Niño year and NOAA models show highest temperatures on record. There was severe bleaching last year and corals have not had enough time to recover since.
- The speed, range and multiple species affected are of big concern. We wanted everyone together to discuss response efforts.
- The current northern boundary of the disease, based upon reports, is believed to be somewhere in Pompano Beach. There were also isolated reports in West Palm Beach. There is always a natural level of coral disease within a system, but since this ecosystem is right next to a highly urbanized shoreline, there are always stressors, but do not know if this is connected. Reports indicated the disease is as far south as the southern-most reaches of Biscayne National Park, believed to be in northern Key Largo. We hope to get more info as to the extent of the disease as a result of this call.

Response Effort

- *DEP Internal Response:* Joanna briefed Deputy Secretary to try and get high-level attention and is waiting for direction. FDEP needed to initiate this kind of response with partners to document the disease. However, since it's a fast-moving disease, we are losing time to document. Talking points have been prepared about this event, and will be distributed once approved. This call will be followed up with a Communications plan and official talking points.
- *Partner Response:* We have a two-pronged approach planned with partners.
- #1 – Coral tissue sampling effort
    - FWC/FWRI leading, efforts are mostly concentrated in Miami.
    - Refer to Kate Lunz.
    - Questions and comments:
        - (Kate Lunz): At this point, the disease is so widespread that tissue sampling would be nice if it took place alongside surveys. Has anyone on the call been out to collect tissue?
            - (Karen Bohnsack): Yes, Miami-Dade DERM has, but the samples may not have been sent in yet. Anecdotal observations from Miami sites indicate that the disease might have already run its course, very different from what we saw one month ago. FDEP CRCP staff are going to plan a sample day with Broward County staff at a site where ~85% of corals were recently observed affected by disease. Might need to add more names to our permit/partner with other agencies to assist with sampling in Broward and Palm Beach counties.
            - (Kate Lunz): Spoke to Vanessa McDonough, she is eager to lead a team at Biscayne National Park [in this effort].
            - (Karen Bohnsack): There is discussion that while there is a push to get disease samples, finding the boundary/documenting the progress of disease is also a priority; not every site will be sampled necessarily.
        - (Cheryl Woodley): Are tissue samples being analyzed only for histology, or will some be frozen?
            - (Karen Bohnsack): Right now, only preserving samples in fixative for histology, we don't have capacity for much more.
            - (Jan Landsberg): Are we asking about other types of samples?

        - (Karen Bohnsack): Suggests following up with key personnel from FWRI, DEP, etc. to follow up on additional sampling after today's call.
- #2 – Existing Disturbance Response Monitoring surveys.
    - (Karen): The bulk of today's call is intended to discuss this current effort and potential modifications that would allow all partners conducting those surveys to better capture the scope and scale of the disease. Thanks to The Nature Conservancy (TNC)/Florida Reef Resilience Program (FRRP), we do Disturbance Response Monitoring (DRM) along the whole reef tract annually during peak summer temperatures to capture bleaching. This can also be used to identify disease. For the purposes of this discussion it will be assumed that people are familiar with the existing survey protocol; questions specific to this methodology can be addressed following the call.
    - Question to the group: Do you feel that the current DRM protocol is sufficient, or are there other parameters that could be added to make it better suited to capturing the disease and/or potentially contributory environmental factors? Are there any modifications that can be easily incorporated immediately? We are looking for practices that are easy to do as the intent is for the surveys to be done relatively rapidly. No time to train staff in new protocols in disease timeframe.
    - With the traditional DRM design, is not really possible to capture disease progression on specific colonies since it has traditionally not included fixed monitoring stations. Suggestion to potentially ask partners to assist with visiting the fixed monitoring stations (SECREMP/CREMP sites) to the DRM effort.
        - (Meaghan Johnson): NSU will be doing SECREMP sites. Hoping to get partners to do CREMP sites in Keys.
        - (Amber Whittle): FWC just had people return from surveying CREMP sites in the Keys, no bleaching observed. Could potentially re-visit?
        - (Joanna Walczak): We just want to do the same protocol on sites if possible. Landscape photos would be helpful. We are looking for any qualitative or quantitative data that allows us to see change in the system. I do not think it's necessary to go back there if surveys were recently completed.
        - (Karen Bohnsack): Regarding the Keys, it's valuable that the disease hasn't been observed yet. If we start receiving more reports from there, it might warrant a repeat visit to CREMP sites.
        - (Amber Whittle): We are happy to share data from recent trips.
        - (Kerry Maxwell): Recently began seeing lots of bleaching in the Keys; will plan to re-visit CREMP sites.
    - (Josh Voss): If it happens that he and Jeff Beal can get out to St. Lucie reef to look at the area, we can do a qualitative survey to determine if more thorough surveys need to be done in Martin.
    - (Esther Peters): Recently observed bleaching and patchy disease in Pompano, this should be looked at too.
    - Karen Bohnsack: Suggested some data to collect that may help characterize sites better. These could potentially be added to FRRP DRM surveys that have not been completed yet:
        - Temperature on surface and the bottom

        - Landscape photos: Suggest taking 4 photos (cardinal directions) to capture site at the beginning of survey. This will help look at water quality, etc.
    - Consider adding a checklist to the DRM data sheet for affected species at the site (even if they do not fall within the transect). This would be similar to the existing ESA checklist, and will give an idea more generally of the scope of the problem.
        - TNC to determine how the data will be entered.
        - (Lauri MacLaughlin): This information is very important, we've always missed diseased corals that fall just outside of the transect. Suggest coordinating with the FRRP Steering Committee.
    - Questions and Comments:
        - (Cheryl Woodly) Does the data collected during DRM surveys let you differentiate between species affected vs not?
        - (Meaghan Johnson): We look at species for parameters: what had disease, what didn't.
        - (Josh Voss): Are species present but not affected by dieses recorded?
        - (Karen Bohnsack): Yes, if larger than 4 cm.
        - (Jan): Would you note non-corals in these surveys?
        - (Karen Bohnsack): Not currently captured.
        - (Jan): Generally speaking, do [non-corals] seem to be affected?
        - (Karen Bohnsack): Anecdotally, we've received reports of bleached gorgonians, and have heard of some affected by disease. There have also been isolated reports of *Xestospongia muta* affected by disease. Southeast Florida Action Network (SEAFAN) BleachWatch only asks for reporters to note the presence of bleached fire coral, sponges and gorgonians (no other information is collected). Could it be possible to enter these observations in the "site notes" in the DRM database?
        - (Jan Landsberg): This will be critical in understanding if there is an environmental stressor, and to get a better idea of what's going on.
        - (Esther Peters): I wonder if Palythoa showed signs of disease/bleaching. Gorgonians with lyngbya strands?
        - (Joanna Walczak): How do we standardize observations of lyngbya/bleaching/disease on other species it this if it's not captured within the transect? Might have to explore further offline.
        - (Esther Peters): Consider adding more to the checklist?
        - (Joanna Walczak): We always tend to focus on stony corals, but if it's an ecosystem issue these observations of non-stony species may be important.
        - (Karen Bohnsack): Agree, because we tend to have more gorgonians/sponges here.
    - Karen Bohnsack: Is there any value in taking sediment samples/will this be relevant if waters are stirred up during the Tropical Storm Erika? Would this be useful, and if so, how should it be analyzed?
        - (Joanna Walczak): Or do we nix this altogether because of the storm?

        - (Esther Peters): Would say not to bother. During early studies at GMU on white plague in the USVI, a lot of corals stopped showing signs of disease after a tropical storm. The storm probably will not make things worse.
        - (Jan Landsberg): Agree, especially if there is no baseline collected before the storm.
        - (Cheryl Woodley): I have colleagues looking at skeletal deposition of trace elements that are indicators of WQ parameters in a relative period of time. From newly dead skeleton you can get an indicator of what water quality was like in the preceding months or maybe even years
        - (Jeff Beal): Follow up with Cheryl on this possibility.
    - (Karen Bohnsack): While we're out conducting surveys, look for any sites that DON'T appear to be impacted by disease, especially in places where we know it's been active. If you come across site like this, try to hone in on features that might be different from others: temperature, water quality, sediment, etc. Look for anything that could be correlated to the conditions of corals there.
        - (Cheryl Woodley): Take precautions to not spread disease to non-impacted sites. It sounds like this may be an infectious disease. If going into a known area where you expect an infections material, you want to clean what you went in with. If there multiple diseases, you don't want to be potential vectors to areas that might be naïve to a disease. Don't forget basic precautionary procedures.
    - (Joanna Walczak): DRM protocol cuts off sites deeper than 60'. We know that nearshore habitats usually get hit harder than others in these scenarios, but don't want to miss out on characterizing full extent of this outbreak [at other sites, and deeper sites on 3rd reef]. For folks already out doing surveys, it is hard to do more. We may need to explore opportunities for funding mechanisms to assist us (everyone) to do this. Does anyone know of existing funding opportunities to help support a more robust effort? Please follow up w/Karen. It will take a concentrated survey response to characterize what's happening.
    - (Joanna Walczak): Consider perusing targeted sites. FRRP DRM is designed to capture a random sample, but because of the need for fate tracking, suggested to target anything across the region that are "main features." Specifically DEP is hoping to work with Brian Walker to look at *Acropora cervicornis* patches and large coral colonies. Does anyone have ideas of other sites we should look?
    - (Josh Voss): Is the northern extent believed to be that way because of the surveys so far?
    - (Karen Bohnsack): My understanding is that targeted surveys by Bill Precht were mostly in Miami Dade County/Biscayne National Park areas. We believe it has spread in Broward due to personal observations of sites there. In Palm Beach we've only received isolated reports of disease through SEAFAN (with photos) in which the reporter specifically indicated the one or two diseased corals were the only ones observed affected at that site. This is drastically different from southern reports. Unknown if targeted surveys have occurred up there unless Palm Beach/Martin staff have started DRM surveys.

- (Joanna Walczak): Fewer species on Barracuda Reef 1 week ago, but almost 100% infection of all species.
- (Karen Bohnsack): Hoping to answer this via the FRRP DRM surveys with support from our partners and potentially additional funding.
- (Jeff Beal): Where are we in terms of RVC (Reef Visual Census) data? Potentially coordinate with RVC surveyors to identify hot spots, evaluate habitat and temperature.
    - (Karen Bohnsack): TNC used 2015 RVC sites for the FRRP DRM site allocation this year, so we do have information from some RVC sites already. Our staff conducted DRM surveys at a couple of sites while doing RVC. DRM sites are same as of RVC w/exception of deep sites – there are additional sites on third reef that are targeted through RVC. Discussion to make those deep sites to make strategic DRM sites (control) among CRCP staff. This is a question for those who do both sets of surveys. Is TNC ok w/us doing this and submitting data for deep sites?
    - (Meaghan Johnson): Yes, as long as they get entered as strategic sites and this is noted in comments.
    - (Brian Walker): RVC sites are the same as FRRP sites in southeast Florida?
    - (Karen Bohnsack): My understanding is that this year is the first year they have done it this way.
    - (Meaghan Johnson): Coordinated with NCREMP last year, but this year NCREMP surveys are not occurring so it worked to coordinate with RVC.
- (Lauri MacLaughlin): Back to targeted sites: In the Keys, the highest coral cover exists in mid-channel and inshore/offshore patch reefs. Not necessarily a habitat that would be consistent with southeast Florida, but they are seeing a prevalence of disease there that they haven't seen in past. Recommend that be a targeted site/habitat type. Have you coordinated at all with BleachWatch at Mote?
    - (Karen Bohnsack): Yes, Cory Walter is included on this list, and we can definitely coordinate more closely with her and the data she's collecting through BleachWatch and MEERA programs in the Keys. Make sure Cory is aware of situation and looking out for an increase of disease reports and severity.
    - (Lauri MacLaughlin): We have been seeing white plague outbreak-horseshoe reef. Esther probably has more data; they submitted a report into MEERA.
- (Karen Bohnsack): In southeast Florida we also have the BleachWatch and SEAFAN programs to gather information from the community.

Roles and Responsibilities

- All FRRP DRM surveyors incorporate updated parameters; complete additional (primary and secondary) sites if able.
- RVC divers – Be on the lookout for disease.
- Martin/Palm Beach partners – Be on the lookout for disease.

Timeline

- Incorporate updated parameters into DRM surveys ASAP.
- Maintain communication with all partners.

Review Follow-Up Action Items

1. Review minutes.
2. Identify a Point of Contact (POC) for each agency/organization included on the call to help with future coordination.
3. DEP – Follow up with FWRI, etc. regarding additional tissue sampling needs/analyses.
4. DEP – Follow up with Cheryl Woodley regarding skeletal deposition of trace elements as an indicator of water quality.
5. All partners conducting DRM surveys – implement the items we discussed today (checklist of additions to normal FRRP DRM protocol):
    a. Temperature (surface and bottom).
    b. Photos (4 landscape photos of the site, specific photos of diseased/recently dead corals).
    c. Conduct a brief site-wide sweep and list stony coral species affected by disease/bleaching, even if they do not fall within the transect.
    d. List other affected organisms (gorgonians, palythoa, sponges, etc.) to help characterize the site. Additional discussion may be required to standardize these observations.
6. Coordinate with TNC to make sure any updates needed to the database are possible; inquire about data analysis. What kind of info do we want to get out of these surveys?
7. Coordinate with FRRP Steering Committee.
8. DEP – Figure out how to share photos; provide a naming convention.
9. All – Help identify possible funding sources for additional response effort.
10. DEP – Coordinate/identify funding to survey targeted sites (e.g., large corals, etc.) /complete additional FRRP DRM sites (e.g., secondary sites, RVC sites >60', etc.)
11. We are planning to put together a communications strategy to talk to higher-ups and the public. Planning for possible press release(s) regarding disease and bleaching. FDEP is working to draft some points to circulate to the other FRRP partners for anyone to use about what's going on, what we're doing and what public can do.
12. Plan next coordination meeting. This call is beginning of conversation. We understand that not everyone can schedule a call every week or every other week, so a POC would be very helpful. We will look at minutes, come up with follow-up task list. Another call w/in two weeks to touch base, see about updated protocol. Will send another Doodle poll.

Adjourn Meeting