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National Coral Reef Management Fellows Newsletter

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The Fellow Newsletter is published by the National Oceanic and Atmospheric Administration (NOAA) Coral Reef Conservation Program, the United States Department of the Interior, and Nova Southeastern University to relay information related to the fellowship program.

Meet the Fellows

Melissa Gonzalez (Puerto Rico) is originally from Maryland's Chesapeake Bay area, which has no coral reefs. Growing up as an ocean avoider, she's since been lucky to discover what she'd been missing. Although she enjoys looking at all corals (minus bleached corals), one of her absolute favorites is the gorgeous Galapagos black coral, *Antipathes galapagensis*.

Malcolm Johnson (Commonwealth of the Northern Mariana Islands) grew up in Northern Virginia, which was far too distant from both corals and the sea for his wellbeing. He has an affinity for the entire *Porites* genus of stony corals, from his first recognizable coral, *P. porites*, to the *P. rus* that are the most common coral species in his favorite dive spot on Rota. There's something about *Porites* that make every reef feel like home.

Maurizio Martinelli (Florida) is a New York City slicker who accidentally fell in the ocean one day and refused to come back out. His first coral love was the eccentric *Galaxea fascicularis*, but he has recently come to appreciate Florida's remaining tall, proud colonies of the threatened *Dendrogyra cylindrus*. Maybe those pillars remind him of the urban jungle he left behind.

Mallory Morgan (Guam) spent her youth on Florida's rapidly declining reefs and those memories still drive her passion for marine conservation. After recently spending nearly five years in Southern California, she is happily embracing Guam's warm, tropical waters and 3mm wetsuit lifestyle! Her favorite coral is *Gorgonia ventalina*. Its vibrant purple hue is her mother's favorite color, and she enjoys searching them for cryptic shrimp and invertebrates.

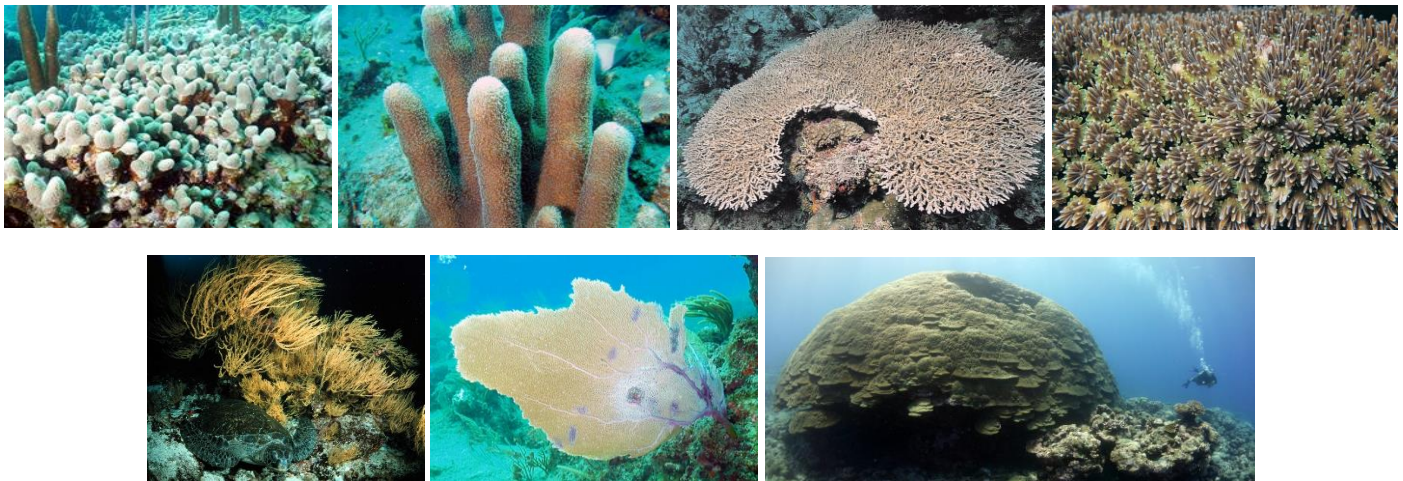
Alessandra Shea (Hawaii), originally from the southern California coast, saw her favorite coral species, *Muricella sp.*, while conducting a Reef Check survey in Sulawesi, Indonesia. It was a bright pink hue, with a matching pygmy seahorse hiding in its intricate lace. While she enjoys watching the sea fans flow in the tides, she also is partial to a tabling *Acropora paniculata*.

Austen Stovall (US Virgin Islands) is a native island dweller from Kill Devil Hills, NC. While she grew to truly love corals (and not just coral reef fish) after working in Acroporid coral restoration, her favorite is the charismatic *Dendrogyra cylindrus*, or Pillar Coral. Her favorite colony, and the largest she's ever seen, is just offshore at Chenay Bay in St. Croix. She can't resist those friendly polyps extending their waving tentacles, so she often waves back.

Motusaga Vaeoso (American Samoa), a native of American Samoa, has always loved being around the water but it was when she first started diving that she gained a deeper appreciation for corals and a sense of awe with their structures and mesmerizing patterns. Motusaga's favorite coral is the massive *Porites* species which may seem very boring to look at, but at 41 meters in circumference and 7 meters high, the biggest coral colony found so far in Manu'a is breathtaking to see.



The Fellows (left to right): Malcolm Johnson (CNMI), Austen Stovall (USVI), Alessandra Shea (HI), Maurizio Martinelli (FL), Melissa Gonzalez (Puerto Rico), Mallory Morgan (Guam), and Motusaga Vaeoso (AmSam)



And a favorite coral (top left to bottom right): *Porites*, *Dendrogyra cylindrus*, *Acropora paniculata*, *Galaxea fascicularis*, *Antipathes galapagensis*, *Gorgonia ventalina*, and Manu'a Big Momma *Porites* (photos: Coralpedia, AIMS, NOAA, Norbert Wu)

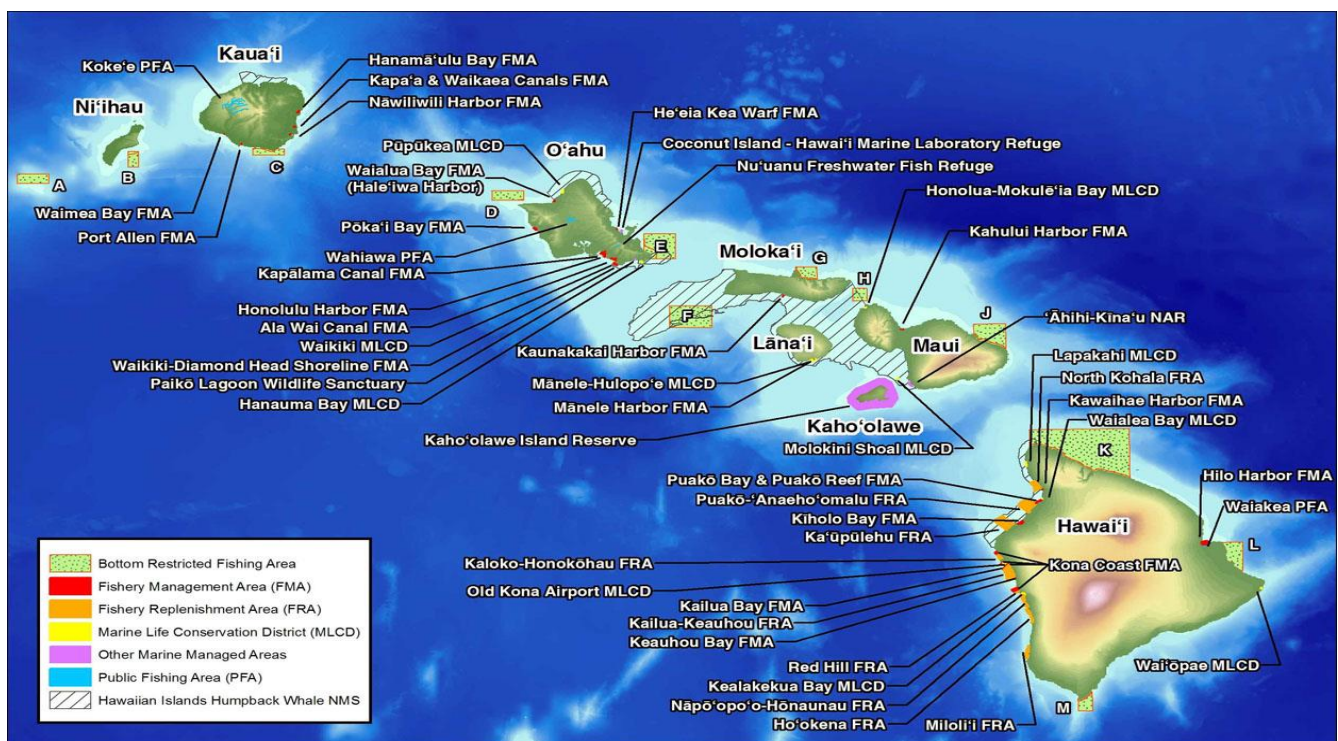
Fellows' Focus: a deeper dive into Marine Spatial Management

As the Fellows settle into their new roles, they are beginning to recognize common themes and challenges to coral reef resource management as well as the unique management responses in each of the jurisdictions. Each newsletter issue will cover one of these cross-jurisdictional topics with management insight from some of the Fellows. In this issue, the focus is on Marine Spatial Management. Please note, all opinions and musing are that of the Fellow and do not necessarily reflect the positions held by any related supervisor, agency, or funding source.

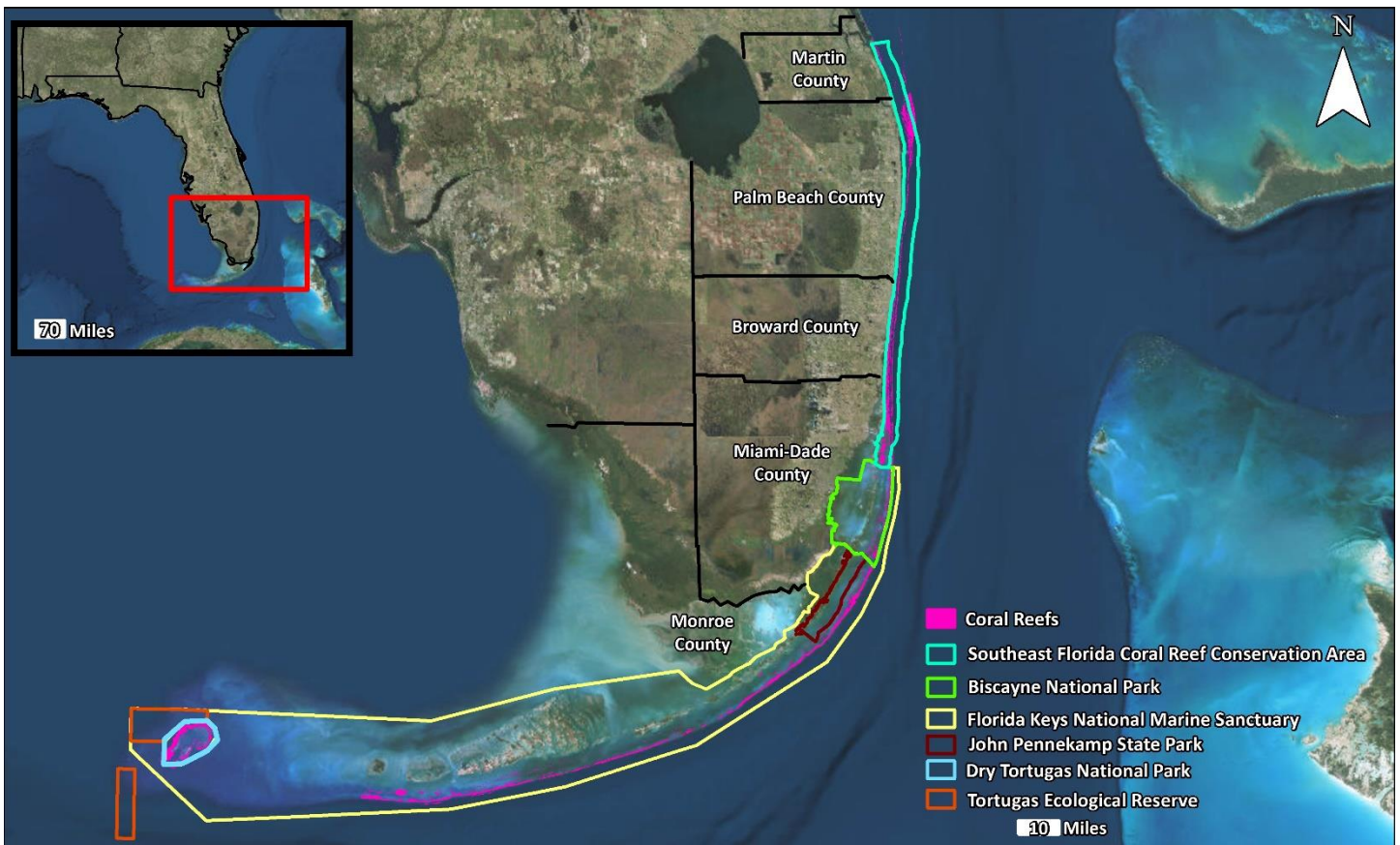
One challenge spanning all the jurisdictions is how to manage the physical space around their coral reef ecosystems. Marine spatial planning involves determining what activities are permissible at what time in what place. There are many approaches to marine spatial management: limited entry, seasonal closures, targeted activity or gear bans, and no-take areas, to name a few. There are also different goals and different methods for determining success for marine spatial management. In general, marine spatial management is increasingly utilized as a management tool for coral reef resources and, accordingly, has spurred wide scientific inquiry and debate. Below, Alessandra Shae (Hawaii) and Maurizio Martinelli (Florida) discuss marine spatial planning in their jurisdictions and how their roles contribute to effective management.

What does marine spatial management look like in your jurisdiction?

Alessandra (HI): Currently there are several different types of marine management methods utilized in the State of Hawaii, for the Main Hawaiian Islands, according to the goal of the Marine Managed Area (MMA). There is a total of six types, each with specific regulations. For example, Marine Life Conservation Districts focus on conservation and therefore have limited fishing access for the public. Community-Based Subsistence Fisheries Areas (CBSFAs) are areas which utilize community based management, emphasizing Native Hawaiian communities' cultural legacies, subsistence needs, and traditional monitoring strategies. In total, about 10% of Hawaii's state waters are under management. The Division of Aquatic Resources (DAR), the agency where I am seated, is currently developing a plan for a network of MMAs, called the Marine 30 by 30 Initiative (30x30) to better address the need for effective management for the state. Here is an [interactive MMA map of Hawaii](#).



Maurizio (FL): The Florida Reef Tract (FRT) and its associated nearshore benthic habitats are host not only to a diverse array of species but also to a diverse array of spatial management schemes. Certain areas are managed by federal agencies, some areas are under state jurisdiction, while others fall under co-management arrangements. The largest and best-known MMA in the region is the Florida Keys National Marine Sanctuary (FKNMS), which is co-managed by the Florida Department of Environmental Protection (FDEP) and the National Oceanic and Atmospheric Administration (NOAA) and co-enforced by Florida Fish and Wildlife Conservation Commission and NOAA. Sandwiching FKNMS is a federal park (Dry Tortugas National Park to the west) and a state park (John Pennekamp State Park to the east). Moving northwards along the reef tract you have the federally managed Biscayne National Park and the state managed Biscayne Bay Aquatic Preserve. As of March 2018, the FRT has a new ‘box’ – the Southeast Florida Coral Reef Ecosystem Conservation Area (SEFLCRECA, for any lovers of long acronyms). SEFLCRECA will cover state waters from the tip of Biscayne National Park to the northern extent of the FRT in Martin County. No agency has yet been directed to manage this area, which came into effect July 1, 2018. Below is a (non-exhaustive) map of the large MMAs in the area.



Do your MMAs have specific management goals?

Alessandra (HI): The 30x30 management plan has the goal of effectively managing 30% of Hawaii’s nearshore environments by 2030. The goal of each of the focus areas, that will make up the 30% of the nearshore environments throughout the state, will vary based upon the biophysical, cultural, and socio-economic factors in each location, in order to best achieve compliance and stewardship within the stakeholders who use the resources. As aforementioned, there are several different types of MMAs in Hawaii, and dependent upon the goal, the focus area will have a specific zoning designation. There will also be indicator benchmarks that will be incorporated

into monitoring programs to track the efficacy of the management strategies for the focus areas of 30x30. An overarching goal for all MMAs is to rebuild fisheries, and the habitats they depend upon, while enabling them to be a cultural, subsistence, and recreational resource for the people of Hawaii.

Maurizio (FL): All the MMAs in southern Florida have management plans that contain goals of varying specificities. Navigating all the management plans for these areas can be an onerous task (as touched on below). The goals of these plans tend to be general: to protect certain resources, to restore some habitats, to ensure continued access, etc. Few of the plans include explicit biological benchmarks as goals or as measures of success of spatial management.



Public engagement related to MMAs can take many forms, ranging from presentations to workshops to field excursions (photos: FDEP).

What are the challenges to discussing or implementing MMAs?

Alessandra (HI): There are several challenges to discussion and then implementation of MMAs. Hawaii’s population loves to fish. It is part of the cultural legacy and lifestyle here. Therefore, whenever it comes to restricting fishing, whether it is gear type, area, or a species, it will always raise concerns for the public. The 30x30 plan is directly addressing this issue by developing a strategic communication plan with an extensive two-year scoping process, that will include the public and communities from the beginning. As for implementation, the process of rulemaking and designation can take a considerable amount of time dependent upon how controversial an area is, and what the public’s concerns are. This issue can also be mitigated by including the communities and stakeholders in the designation process and presenting the biological justification for the proposed regulations in order to attain buy in for the zoning designation in a specific area.

Maurizio (FL): Marine spatial management in Florida is extensive and involves many partner organizations and public engagement. While this allows for comprehensive management, it also means that lines of communication need to remain open and equitable. This can be difficult to maintain over long periods of time and there are groups in Florida with whom communication can (and should) be improved, especially during decision making processes. While there have been failures on both ends of the line, in my opinion, finding a means to maintain open channels of communication can substantially improve spatial management planning processes. This is, of course, easier said than done but would be well worth the effort.

I also think that better coordinating and clarifying the goals of all the MMAs could be beneficial. More specifically, I think that devising empirical standards for measuring certain general goals would allow for more coordinated management actions. For example, defining exactly what ‘protection’ or ‘restoration’ means in relation to a given habitat or biological community might allow interconnected marine managed areas to better

coordinate their efforts towards similar goals. Neither of these goals nor their metrics should blanket the entire FRT due to the great diversity of habitat and stressors along the reef tract. However, providing specific metrics for common goals might allow spatial management to be more effective and tangible to user groups.



Enforcement off MMAs can be limited to signage or come with dedicated enforcement officers (photos: DLNR)

In your opinion, how might local marine spatial management be improved?

Alessandra (HI): Local marine spatial management needs to address local community needs and concerns. Enforcement for MMAs globally is one of the major pitfalls of them, and therefore it is necessary to ensure that the people who are using the resources and area understand the need for restrictions, and take a part protecting them. In Hawaii, enforcement is greatly underfunded and officers are spread thin, making the aspect of enforcement underutilized and often ineffective. Instilling a sense of stewardship in an area is essential because MMAs should be able to function without enforcement, with the stakeholders aware of how much take an area can support to recover and grow. Without the people who rely on the resources taking part of the development of the regulations and designation, the MMAs will not be effective.

There is a mistrust between management and the public that will be addressed in the extensive scoping process planned for the 30x30. Without active participation of the public during the planning process, and transparency within management agencies, the MMA network will be another plan with meaningless lines drawn in the sand. Inclusion, and clear messaging of what a specific functional group of fish contributes to the reef, with models showing what the biomass in the area will look like dependent upon catch levels, is the kind of public engagement that the 30x30 will include in community scoping to achieve education and effectiveness for regulations.

Maurizio (FL): A key challenge of management is to balance the use and conservation of marine resources. Management decisions on what activities are permissible in a given area have real-life consequences for the people who rely on marine resources for livelihood, wellbeing, and recreation. Unfortunately, competing interests and mistrust between and among local resource users (including management) have led to challenges in even discussing marine spatial management. An additional challenge is the very terminology around marine spatial management. Despite key differences in the management approaches, many diverse MMAs are commonly lumped under the term ‘marine protected area.’ In Florida, this term has become synonymous with ‘no take’ or ‘no access’ – a complete non-starter for certain groups. Thus, even navigating the language of spatial management becomes difficult prior to even consideration by the many interested user groups.

A recent public engagement process highlighted some of the issues surrounding marine spatial management in

Florida. This process was a multi-year consultation with relevant reef user groups that was intended to produce comprehensive management recommendations for the southeast region of the FRT. The idea was progressive – bring all the different interests to the table and have them come to a consensus on management strategies. The process moved along slowly and steadily, which had the unfortunate consequence that certain stakeholders did not remain engaged for the length of the process. When the final recommendations were set to be agreed upon, some of these groups came back to table to strongly oppose what they felt was contrary to their interests. These groups felt that their positions were not fairly represented during the process, while some members who has participated extensively throughout the process felt that their work was being stymied at the very end. It became clear that misunderstanding of some terminology, lack of consistent engagement, and entrenched mistrust led to tremendous difficulty even discussing spatial management strategies.



MMA's can be used to protect *and* enjoy the diverse life found on our coral reefs, but there are inherent challenges (photos: OFR, DLNR)

How does this fellowship encourage you to be a mechanism of change?

Alessandra (HI): This Fellowship, in the few months I have been working, has enabled me to see how management works on the ground. It makes me want to dive in and bring my ideas to the table because of the position I am in. I have been able to engage with stakeholders, and be part of a team that is currently developing the marine management area network for the state of Hawaii. I am learning different perspectives and perceptions of what management of reefs means to different stakeholders, and what access to the ocean's resources means to the people of Hawaii. Working within the agency and with partner organizations is teaching me to expand my horizons and to seek guidance from a host of experts. Being part of a team working towards the goal of 30x30 is gratifying. There is value in seeing how my ideas can be put into action in my jurisdiction.

Maurizio (FL): With regards to spatial management specifically, this Fellowship comes at a unique time where SEFLCRECA is just coming into existence. While the management of this area has not yet been assigned, I am provided the opportunity to at least observe and learn from the nascent stages of marine spatial planning. That said, my role in FDEP is primarily related to the ongoing coral disease outbreak along the FRT, and thus my position is unlikely to engage extensively with management planning in SEFLCRECA. In more general terms, however, this Fellowship offers me a unique position to engage with an enormous network of federal and state managers, researchers, conservation professionals, and engaged citizens to find proactive solutions to an incredibly pressing management problem. I am learning how to leverage the formidable expertise and passion of this group towards this disease outbreak. As a Fellow, I am encouraged to develop my own knowledge and skillset

related to marine resource management while directly working on the issue. I think that the role of Fellow – somewhere between student and professional – allows me to navigate this crazy management world in a position of forward momentum and positive change.

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Fellowship Orientation Training at Nova University



Our 2018-2020 cohort of Fellows gathered at Nova Southeastern University’s Halmos College of Natural Sciences and Oceanography in Dania Beach, Florida in January 2018. The Fellows, along with their supervisors and regional Points of Contact, met to introduce themselves, develop work plans, and learn about the challenges and issues facing each of the jurisdictions.

The week’s activities were facilitated by Kevin Doyle, professional development consultant at Green Economy. The orientation began with two days of training for the supervisors, after which all the Fellows and Points of Contact arrived. Once together, everyone participated in exercises to explore work styles, personality types, and

communication methods. The Fellows and their supervisors also worked together to develop and improve their work plans for the coming two years, focusing on overarching goals, specific projects, and metrics for judging progress and success.

As our cohort learned about the situation of each jurisdiction, including the management programs of each, and their respective hindrances, we came to recognize our common ground (and sea!). The orientation week made clear the important role for us Fellows in our jurisdictions, which only added to our collective excitement and passions for coral conservation and resource management. We ended the week on the water, cruising the Intercoastal Waterways around Dania Beach and Fort Lauderdale, thrilled about our new community full of support and encouragement, challenged to be the change we want to see for our corals.

During the orientation, one of the tasks given to the Fellows was to write a song together in an hour. We decided to write a song to the popular tune of ‘Despacito.’ The lyrics are below, but you can also watch your 2018-2020 National Coral Reef Management Fellows embarrass themselves in grainy quality [here](#). Stay tuned for upcoming concert information.

Coral Fellows	Coral reef can't wait because these threats are de peligro
All around in the world in seven jurisdictions	Good thing we seek broad solutions
Each territory suffers similar afflictions	To mitigate this pollution
Saving coral reef with utmost conviction	
Coral fellows	Coral fellows
	All around the world is seven Jurisdictions
Climate change around the world is def not fiction	Each territory suffers similar afflictions
Our book club like to read non- fiction	Saving coral reefs with utmost conviction
We have scuba diving restrictions [scuba, scuba, scuba, let us scuba]	
	Pasito pasito, suave suavecito, getting it done, poquito, poquito
Bleaching, pollution, watersheds, fisheries, disease, Turismo	Virgin Islands, AmSam, Guam, Hawaii, Florida, Puerto Rico, and CNMI
Our problems to solve, in our favorite places [favoritos, favoritos, Wendy]	Coral Fellows

The National Coral Reef Management Fellowship was established in 2003 to respond to the need for additional coral reef management capacity in the U.S. coral reef jurisdictions in the Pacific and Atlantic/Caribbean. The fellowship is a partnership between the National Oceanic and Atmospheric Administration’s Coral Reef Conservation Program, the U.S. Department of Interior’s Office of Insular Affairs, the U.S. All Islands Coral Reef Committee and the Nova Southeastern University’s Halmos College of Natural Sciences and Oceanography. The program’s vision is a thriving collaborative fellowship program that builds excellent next generation leaders and capacity for effective local coral reef ecosystem management.

