Biscayne Bay Regional Restoration Coordination Team (BBRRCT)

October 19, 2016 10:00AM – 1:15PM

NOAA Southeast Fisheries Science Center (SEFSC)

Statistics Building (rear of main building) Conference Room

75 Virginia Beach Drive Miami, FL 33149

Conference line 1- 302-202-1108; Participant Passcode 803454

Phone/web ex:

Gary Milano

Col Reynolds

Kim Taplin

Officer Jimenez

Frank Belzebre

Attendees:

Jim Murley	Dan Peterson	Dan Kipnis
Meredith Jennings	Kristen C (DEP)	Nancy Diersing
Phil Everingham	Laura Eldredge	Heather Bracken-Grissom
Tom Jackson	Carrie Beeler	Nan Yow
Joan Browder	Sarah Bellmund	

Jim Murley, Dade County Resiliency officer. "Current status/progress of work as the County's new (and first) Chief Resiliency Officer".

http://www.miamidade.gov/planning/resilience.asp

Jim Murley thanked the group and the TF for continuing the BBRRCT. Consider us to be an active partner. There will be a link available to the executive summary. He discussed the green print document and the participation. He explained the Sea level TF and set of recommendations that expanded the resilience to include climate change and sea level rise. He explained they joined the 100 resilient cities program through the Rockefeller Foundation. City of Miami and city of Miami beaches (greater Miami and the Beaches). Brand new process welcome everyone. Get the monthly newsletter to you. He referenced the document and the definition of urban resilience. He explained what shocks are and that it includes Zika and the difference of stress. Sea level is stress because it is chronic. Zika is a shock related to climate change.

He moved on to the Sea Level Rise Taskforce. He explained that the commission wrote a report and to the next phase to expand upon it was presented to the commission in a 400 page document this week. It is available online. He explained that they are working with companies such as Lloyds of London reinsurance to explain their planning for sea level rise. The Southeast Florid compact is critical to the initiative because it pulls together information and experts. Looking at

coastal flooding events like we are experiencing this week with king tide. Storm surge is the most dangerous part of the hurricane.

Enhanced capital plan is drawn up in sea level rise report, the BP you could find to protect real estate from SL rise. Not many solutions. Found them for Netherlands and other places and it didn't work for South Florida. We looked at drafted plans for Manhattan and evaluated for SF, but they are very different. We had to upgrade the water sewer system and raised the rates. We are engaged to a 6-7 year upgrade to our system to a category 5 hurricane and storm surge. He said they have a ways to go to deal with coastal flooding.

The area in North central Miami Cade county Broad causeway bisected by east coast railroad. There is a lot of transportation money involved in this drainage project. We do focus groups in areas not bound by building code or zoning restrictions to do 50 year planning for sea level rise and climate change.

We continue to focus on energy. We are buying CNG buses and headed to electric buses. Is hybrid more efficient than electric? New building have to be LEED certified now in city but county is still looking at it. We have 1000 of legacy buildings though. Starting a partnership with Bloomberg to look at the legacy buildings to do energy efficiency. FPL is about 60% NG. Amendments I and IV pay into it as well.

Q & A

Tom asked if the city of south Miami looking at septic tanks. Jim Murley septic is legacy that worked at a different population density. We have a lot of them and we have mapped them. There is a straw ballot in the city asking if they want it fixed. It is a pervasive problem throughout the county. Tom warned that the electric bus designs to consider heavy puddles to not short out. Jim replied that there is referendum process to run through tests to consider those things. Sarah pointed out the sewage issue on the beach and the viruses and disease that comes with it. Jim explained the new partnership with the 3 FIU, UM and Miami Dade College (metro network), to analyze these issues. Its first challenge is Zika. Sarah pointed out that it should be discussed and dealt with openly at meetings. Dan pointed out that the topo maps show very little land left with sea level and when do we discuss avenues of retreat? Jim discussed the Smart Plan that has 6 corridors that will be upgraded and test the resilience. He added that we need density for usage though. Sarah asked about PV on the buses and Jim wasn't sure. Phil asked if emergency office such as FEMA are involved in this plan. Jim said yes the Office of Emergency Management. In recovery is where his work starts. Phil pointed out that you didn't get FEMA money unless your rebuild was up to standards. FEMA is now part of Homeland security and it is prioritized by this administration. Biscayne Bay aquatic preserve asked if we are working to upgrade Ubers and other citizens. Jim said we used to have emission control but now we are not doing it because of the efficiency of the program. He explained that we don't have air quality issues so Florida doesn't get the money to do it. Joan B asked can we bring thorium reactors into our system.

Dan Peterson. James Madison Institute. "Approach on the everglades restoration - land acquisition an economic based approach".

Dan explained that they have put forth a layman's approach to understand how the Everglades will be restored. He showed a newspaper article from a Russian newspaper. He lived in Moscow working at the Anglo American School. Bresnif pictured in the news article picture of the Lennon Mausoleum. There was no private property. 16 million people lived there. No private homes only apartments. Our country is founded on private property rights is paramount in the US. He was ED for the Center of Property rights. He explained how they merged with the James Maddison Institute. He see the group as a think tank.

He talked about the history of the state of Florida Agriculture. He explained the history of Florida in the 1920s to build the earthen dams broke and many died. After this the earthen dike was built around the everglades. He explained how development started at the coast as was allowed because of the drainage and dikes. After Air conditioning, development expanded. He discussed how the water flows from upper chain of lakes through the Kissimmee to Lake O and south to canals system and Everglades.

He explained BMP for agriculture and gave some examples. He discussed flows out to the N estuaries and the HHD dike. He discussed the water farms subsides. He discussed CERP and the 68 components. He talked about Kissimmee. He pointed out Joe Negron land south of Lake O to store water and some say North of the lake. He went over the challenges of the Restoration effort. He explained the authorization process and appropriations process. He explained that 1/3 of the land in Florida is government owned. He explained that 200 million a year of Amendment I money should be used. He went over recommendations to have a easy to use 1 web page about how tax dollars are spent on restoration, scientific data be used in decision making and explained a lot of pollution data is generated by models and not collected samples. More should be done to study the fresh water and brackish water interface. Website Jamesmadison.org

Q &A

Carrie mentioned the successes should be more included. Joan Browder mentioned that the southern estuaries want the water the northern estuaries don't want. Tom brought up the fact that water quality is an important issue and items such as benzene are not being addressed.

Heather Bracken-Grissom –Assistant Professor, FIU - Lobster and shrimp in Biscayne Bay.

Phil explained how he came across her lobster paper an asked her to come and speak. She is going over the biology and research of the Lobster and Pink Shrimp. She said the *Infraorder Achelata* Lobster is lacking claws. Wide distribution in tropical and subtropical waters of the Atlantic Ocean. Has been harvested by 23 countries, prey items for mega fauna such as shark eels and fish. The have an economic importance and social events. She showed a production graph that gave metrics in metric tons. Showed a spike in the 70's and then a drop off perhaps due to regulations. In 1987-2001 About $ 365 Million worth was harvested. She showed pictures of the phyllosoma (larval stage) of the lobster. She went over the life cycle of the lobster. She explained that they actually have been seen riding jelly fish. They participate diurnal migration hundreds of meters at night to feed to avoid predation. The march in in line down the coast. Hypothesized it is for efficient water resistance mitigation.

Current Research relates to the evolutionary relationships of lobsters and the biodiversity, conservation and ecological implications. They came up with a "Phylogentic Tree" that tell about the relationships between organisms. Genetic analysis they created tree they blew up part of the tree that there are groupings and furry lobsters are showing up. Adding Morphology helped classify the organisms.

She explained that models help conserve and protect the lobster fishery. Although there are many models they might not be perfect. Recruitment is a problem because traditional stock assessment models treat Florida as an isolated stock although they can disperse thousands of miles through many currents and because they can stay in larval form for up to 2 years. Indeterminate growth means they may never stop growing and it is difficult to age them. Traditional models use age but new model will use size. Current model test have been submitted to sea grant for inspection and running them against the structure model to see how they perform. Take in to account biophysical modeling. Integrates currents and larval migrations. She is using stable isotopes to track them and genetic analysis to id source and sink populations.

Pink shrimp (Farfantepenaeus *spp.and relatives*). Economic importance for Gulf of Mexico $35 million annually. Second most valuable fishery in the US. $1.7 Million bait shrimp industry in South Florida alone. Knowing how species within Farfantepenaeus related to each other are is critical for conservation planning. She explained the *phyllogentic* tree and the closely related species. She explained that notialis is not coming out as its own species or just a southern species of duoranum. Most closely related to the pacific coast species. She went over the distribution maps and noted Southern and Northern geographic areas have different species of shrimp. *Brasiliensis* clade showing genetic divergence distributed in Biscayne Bay. Sarah asked about considering Panama Canal influence and she said she had and explained that there is a genetic clock that can be used to help id this issue. Looking specifically at duorarum in Gulf of Mexico, Florida and Carolinas. She showed mapping models showing the Dry Tortugas as natal recruitment areas. She explained that using the extra DNA evidence there is evidence of population structure and 4 unique populations in Daytona Beach, N BBay, Central BBay and fl Pennisua and Keys. Want to conserve the distinct populations to ensure healthy shrimp populations.

Q &A

Dan said given the size and reproduction question we may need to look at the size limitations. Nancy explained that as soon as the lobster was legal age it was removed from the population. Many of the lobsters in the keys are coming from other places. Dan said the Caribbean countries do follow our laws about size and then they may go along with it. Nancy pointed out that larger females produce larger clutches. Dan said we have a major sponge die off which is important to the juvenile lobster. Tom pointed out that lion fish can also predate the lobster populations. Joe asked on the lobster molecular clock, "where are the fresh water lobsters chronologically?" It looks like they evolved from freshwater. She explained the crayfish 2 distinct populations from the break of continent millions of years ago. Nancy pointed out the Gulf fisheries Management council and the Caribbean wide management.

Closing discussions

Dan explained the Madison Institute was funded by the coke brothers. Eric told the group that Dr Paul Grey will be speaking 6:30- 8:00 Miami science barge. . Nov 16 is our next meeting.