

Final Evaluation Findings

Guana Tolomato Matanzas National Estuarine Research Reserve

July 2007 to July 2015

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Executive Summary

The Coastal Zone Management Act requires the National Oceanic and Atmospheric Administration's Office for Coastal Management to conduct periodic evaluations of the performance of state programs participating in the National Estuarine Research Reserve System. This evaluation examined the operation and management of the Guana Tolomato Matanzas National Estuarine Research Reserve by the Florida Department of Environmental Protection (department), the designated lead agency, for the period from July 2007 to July 2015. The evaluation focused on three target areas: program administration, restoration, and climate resilience.

Final evaluation findings for the national estuarine research reserves highlight each reserve's accomplishments in the target areas and include recommendations, which are of two types:

Necessary Actions address programmatic requirements of implementing regulations of the Coastal Zone Management Act. These must be carried out by the dates specified. Failure to address necessary actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in the Coastal Zone Management Act §312(c).

Recommendations are actions that the office believes would improve the program, but which are not mandatory. The state is expected to have considered the recommendations by the time of the next evaluation or dates specified.

The findings in this evaluation document will be considered by the NOAA Office for Coastal Management in making future financial award decisions concerning the reserve. The evaluation came to these conclusions:

Accomplishment: The reserve has improved staff retention by developing a partnership with the University of North Florida to hire reserve staff members and provide enhanced benefits and professional development.

Accomplishment: The Friends of the Guana Tolomato Matanzas Reserve provides strong financial and community support to the reserve, augmenting its operations and management.

Accomplishment: The reserve's volunteer program continues to grow and serves to connect the reserve with the community and bring additional expertise to the reserve. The volunteers have contributed over 10,000 hours annually and have expanded the capacity of the reserve staff to provide educational programs, conduct monitoring and stewardship activities, and fill administrative needs.

Accomplishment: Regionalization of the reserve's research and monitoring methods to other aquatic preserves in Northeast Florida has improved communication and response, and facilitated the use of data for decision-making.

Accomplishment: The reserve is creatively using new technologies for education and monitoring, including the use of drones for new mapping techniques and vegetation monitoring.

Accomplishment: The reserve has excelled at working across sectors to respond to local coastal management needs and issues. For example, the combined efforts of the Shellfish and Water Quality Task Force, Oyster Condition Assessment, and Community Oyster Shell Recycling Program have contributed to addressing community concern about a decrease in harvestable oysters and the long-term viability of oyster beds in Northeast Florida.

Accomplishment: The reserve continues to excel at translating science for citizens and coastal decision-makers. Examples are the inclusion of a session of the State of the Reserve symposium that targets members of the community, and maintenance of a database of ongoing and completed projects to share with new researchers.

Necessary Action: The Guana Tolomato Matanzas Reserve must work with the NOAA Office for Coastal Management to develop an agreed-upon timeline by May 31, 2017 for completion of the management plan.

Recommendation: The NOAA Office for Coastal Management encourages the Florida Department of Environmental Protection to continue to support the use of federal funds for travel that benefits the state, enables sharing of successful approaches with colleagues across the system, and allows staff to grow professionally.

Recommendation: The NOAA Office for Coastal Management acknowledges the reserve's efforts and progress in improving staff retention since the last evaluation period and encourages the Florida Department of Environmental Protection to continue to work with the reserve to build upon these efforts.

Recommendation: The NOAA Office for Coastal Management encourages the Florida Department of Environmental Protection to identify and pursue additional opportunities for streamlining the approval process for management plans and cooperative agreements.

This evaluation concludes that the Florida Department of Environmental Protection is adhering to the programmatic requirements of the National Estuarine Research Reserve System in the operation of the Guana Tolomato Matanzas National Estuarine Research Reserve.

Program Review Procedures

The NOAA Office for Coastal Management evaluated the Guana Tolomato Matanzas National Estuarine Research Reserve in fiscal year 2015. The evaluation team consisted of Pam Kylstra, evaluation team lead; Stephanie Robinson, site liaison; Jace Tunnell, manager, Mission-Aransas National Estuarine Research Reserve, and Carrie Hall, evaluator. The support of the reserve staff was crucial in conducting the evaluation, and this support is most gratefully acknowledged.

NOAA sent a notification of the scheduled evaluation to the director of the Florida Department of Environmental Protection and published a notice of “Intent to Evaluate” in the *Federal Register* on July 10, 2015. NOAA also notified members of Florida’s congressional delegation. The reserve posted a notice of the public meeting and opportunity to comment in the *St. Augustine Record* on July 10, 2015.

The evaluation process included a review of relevant documents and a survey of stakeholders, which helped identify three target areas for the evaluation: program administration, habitat restoration, and climate resilience. A site visit was also conducted, and the evaluation team held meetings with staff members and group discussions with stakeholders and program staff members about the target areas. In addition, a public meeting was held on Wednesday, August 26, 2015, at 6:00 p.m. at the Environmental Education Center at 505 Guana River Road, Ponte Vedra, Florida, to provide an opportunity for members of the public to express their opinions about the implementation of the reserve. Stakeholders and members of the public were given the opportunity to provide written comment via email or U.S. mail through Friday, September 4, 2015. The comments and the NOAA Office for Coastal Management’s responses are in Appendix A. The Office for Coastal Management then developed draft evaluation findings, which were provided to the Florida Department of Environmental Protection for review, and the department’s comments were considered in drafting the final evaluation findings.

Final evaluation findings for the national estuarine research reserves highlight each reserve’s accomplishments in the target areas and include recommendations, which are of two types:

Necessary Actions address programmatic requirements of implementing regulations of the Coastal Zone Management Act. These must be carried out by the dates specified. Failure to address necessary actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in the Coastal Zone Management Act §312(c).

Recommendations are actions that the office believes would improve the program, but which are not mandatory. The state is expected to have considered the recommendations by the time of the next evaluation or dates specified.

Evaluation Findings

Program Administration

Introduction

In 2012, the Florida Department of Environmental Protection was restructured. The three Florida reserves were moved out of the Division of Recreation and Parks and placed in the new Florida Coastal Office, which also houses state aquatic preserves, the Coral Reef Conservation Program, and the Florida Coastal Management Program. The new office structure provides for a focus on coastal issues and new opportunities for a closer relationship among the estuarine research reserves, Florida Coastal Management Program, and Coral Reef Conservation Program, with the added benefit of bringing together state partner programs that are funded and supported in part through NOAA's Office for Coastal Management. The new office structure has the potential to improve coastal management in the state, and the NOAA Office for Coastal Management encourages the reserve and other programs within the Florida Coastal Office to continue to collaborate, explore, and engage in new opportunities to enhance integration, maximize limited resources, and capitalize on new opportunities.

Professional Development and Travel

The sharing of information and ideas, both among Florida reserves and across the network of 28 reserves, serves to strengthen their success and overall effectiveness. NOAA's Office for Coastal Management values and encourages the use of federal funds to support travel to national and regional reserve meetings and trainings, enabling reserve staff members to share their knowledge and contribute to the national system, as well as bring new knowledge and ideas back to their reserve or to pursue professional development. A special award condition that is part of the cooperative agreement signed by the state calls for "the reserve manager, research coordinator, education coordinator, Coastal Training Program coordinator, and stewardship coordinator [to] attend the Annual National Estuarine Research Reserve System meeting." The NOAA Office for Coastal Management encourages the department to support the use of federal funds for travel that benefits the state and helps the reserve successfully advance its management plan objectives and cooperative agreement. NOAA would like to recognize the benefits of an agreement established between the reserve and the University of North Florida in 2014 that has facilitated additional travel and training opportunities for some staff, as have their partnerships with the reserve's friends group.

Staff Retention

Staff retention has been a challenge for certain key positions over the evaluation period. Staff turnover has led to loss of institutional knowledge and can impact the continuity, productivity, and momentum of long-term programs. According to data gathered in preparation for the

evaluation, in the seven years from 2007 to the end of 2014, there were five CTP Coordinators, three Research Coordinators, three Stewardship Coordinators, four Volunteer Coordinators and three Education Coordinators. Some of these changes were due to staff restructuring within the reserve to improve alignment with National Estuarine Research Reserve priorities and provide advancement opportunities. Other changes were related to staff departures; the gap between the cost of living and the available salary was consistently noted as a reason for staff departures. Although the reserve has served as an important springboard for a number of former staff members' careers, the compensation gap impacts the momentum and continuity of reserve programs and hampers the reserve's intent to create an environment that fosters growth and leadership within its ranks.

Reserve leadership is commended for finding resourceful ways to address the retention issue by developing five contract positions in partnership with the University of North Florida, that provide full university benefits and the opportunity for higher salaries. See additional discussion of the agreement below. Reserve leadership further recognized that, while this solution provided great benefits, it had the potential to generate a disparity among staff that could negatively affect morale. As a result, the reserve more recently provided some employees with merit-based pay increases and opportunities to attend professional development activities. The department is encouraged to continue to seek ways to increase staff retention including exploring opportunities to better align staff compensation with the cost of living in the local communities.

Management Plan and Cooperative Agreement Review

During the previous evaluation period, a program suggestion called for the reserve to complete the revision of its management plan no later than December 2007. The reserve was able to complete the revision and the plan was approved in 2009. The reserve's next management plan update was due in 2015. The reserve must have a fully approved five-year management plan to meet federal requirements for the implementation of a National Estuarine Research Reserve. Reserve staff members are currently working on developing a new management plan and anticipate completion in 2017. The Guana Tolomato Matanzas Reserve must work with the NOAA Office for Coastal Management to, by May 31, 2017, develop an agreed-upon timeline for completion of the management plan.

The State of Florida has an extensive multi-tiered review process for aquatic preserves and National Estuarine Research Reserve management plans, requiring approval by the department, the Acquisition and Restoration Council, and the Board of Trustees of the Internal Improvement Trust Fund. At times, this can mean that a program is at the end of a five-year period before the plan is fully approved. The extensive and lengthy review process can impact the reserve's eligibility for federal funding under the Coastal Zone Management Act, since an approved five-year management plan is required by the act. The state's process for reviewing and approving draft annual operations award proposals is also protracted. This has caused some Florida reserves to miss the Grants.gov deadline for submission, which could prevent the reserves from

receiving their operations funds at, or before, the start of the new fiscal year. To ensure that five-year management plans for reserves and cooperative agreements can be reviewed and approved in a timely manner, the department should continue to identify and pursue opportunities for streamlining these approval processes.

Academic Partnerships

In 2014, the reserve entered into a memorandum of agreement with the University of North Florida for staffing services. Under the agreement, five full-time staff members shifted from the Department of Environmental Protection to the University of North Florida, though the staff members are under direct oversight of the reserve management. This brings the expertise of the reserve staff to the university's coastal biology department, providing an opportunity for the reserve to share its knowledge beyond the reserve and bring back information to the state. For the reserve, this arrangement serves to enhance staff retention since staff members are able to travel to conferences and pursue professional development training, and the contract staff also enjoy enhanced benefits. This formal agreement also enables the university to provide limited support for reserve research needs, such as maintaining and purchasing equipment.

The reserve continues to excel at creating and fostering partnerships with academic institutions that provide research opportunities for students and visiting scientists, expand the reserve's monitoring capacity, and allow for an exchange of information and expertise between the reserve and academic partners. For example, with guidance from reserve staff, Flagler College started an environmental studies program, and the students benefit from having the opportunity to be involved with active research projects at the reserve. The University of Florida Whitney Lab's mission of increased applied science within the region has resulted in collaboration between reserve staff and faculty on projects and grant applications. During the site visit, faculty also noted the value of facilitation expertise among reserve staff. There have been research working groups established that are comprised of reserve staff and scientists from the University of Florida, the Smithsonian Institute, Flagler College and the University of North Florida to address topics of concern such as ecological effects of northern mangrove migration. Additionally, the partnership with the University of North Florida has the potential to bring in other units of the university. The reserve could engage other university departments through the management plan development process to identify shared research opportunities. For example, the Coastal Training Program and the University of North Florida Economics Department could work together to explore ecosystem services valuation. The evaluation team heard from representatives of University of North Florida that some their colleagues expressed concerns about having reliable long-term access to the reserve, which may result in reluctance among those faculty to establish research sites within the reserve. As the reserve continues to build upon the extensive relationships with University of North Florida, it may wish to communicate and clarify the mission and role of the reserve as a research site, where appropriate, to alleviate potential researchers' concerns.

Management Advisory Council

The council was formed originally to assist with the long-term operation and administration of the reserve by providing advisory input from a cross-section of the community and active management partners of the reserve. Initially, the council was somewhat independent of the reserve, but its role has become considerably more integrated over time. For instance, reserve staff members provide facilitation for the council's meetings, and in 2013, the council began serving as the Coastal Training Program Advisory Committee. The quarterly input from this diverse group of stakeholders and citizens helps to inform programming for the Coastal Training Program, ensuring that it reflects the needs of the community.

Citizen Support Organization

Since the last evaluation period, the Friends of the Guana Tolomato Matanzas Reserve has moved into a dedicated and transparent supportive and advisory role for the reserve and its management plan. Although the Friends of the Guana Tolomato Matanzas Reserve has consistently promoted environmental awareness and increased the reserve's visibility, in the past several years the group has increased its fiscal capabilities, worked much more closely with the staff, and supported reserve programming. Reserve volunteers are also choosing to become members of the friends group. The group manages several grants for the reserve without charging administrative fees, hosts an annual fundraiser, administers facility rental costs, and provides some funds intermittently to support staff travel.

Volunteers

Volunteers continue to be integrated into all of the reserve's programming. They have participated in the butterfly monitoring project, oyster recycling program, living shorelines projects, shorebird and sea-turtle monitoring, emergent vegetation sampling, invasive species eradication, and the System-Wide Monitoring Program, as well as school visits to the reserve, greeting visitors to the education center, and special events like National Estuaries Day, as a few examples. Since the last evaluation period, the number of active volunteers has increased by nearly 60 percent to 250. They serve for over 10,000 hours annually, saving the reserve well over \$200,000 each year. Two of the reserve's volunteers received NOAA's Environmental Hero Award during this evaluation period. The volunteers the evaluation team heard from during the site visit reported feeling well supported and appreciated by the reserve.

Findings for Program Administration

Accomplishment: The reserve has improved staff retention by developing a partnership with the University of North Florida to hire reserve staff members and provide enhanced benefits and professional development.

Accomplishment: The Friends of the Guana Tolomato Matanzas Reserve provides strong

financial and community support to the reserve, augmenting its operations and management.

Accomplishment: The reserve's volunteer program continues to grow and serves to connect the reserve with the community and bring additional expertise to the reserve. The volunteers have contributed over 10,000 hours annually and have expanded the capacity of the reserve staff to provide educational programs, conduct monitoring and stewardship activities, and fill administrative needs.

Necessary Action: The Guana Tolomato Matanzas Reserve must work with the NOAA Office for Coastal Management to, by May 31, 2017, develop an agreed-upon timeline for completion of the management plan.

Recommendation: The NOAA Office for Coastal Management encourages the Florida Department of Environmental Protection to continue to support the use of federal funds for travel that benefits the state, enables sharing of successful approaches with colleagues across the system, and allows staff to grow professionally.

Recommendation: The NOAA Office for Coastal Management acknowledges the reserve's efforts and progress in improving staff retention and encourages the Florida Department of Environmental Protection to continue to work with the reserve to build upon these efforts.

Recommendation: The NOAA Office for Coastal Management encourages the Florida Department of Environmental Protection to identify and pursue additional opportunities for streamlining the approval processes for management plans and cooperative agreements.

Restoration

Burn Program

Much of the terrestrial restoration and resource management activity within the reserve is done with prescribed burns. Additionally, many of the natural communities in the reserve depend on fire, and resource management is an important component of a reserve's management plan. During the first part of the evaluation period, the reserve had a certified prescribed burn manager who successfully implemented prescribed burns on the reserve's properties. In 2013, an increase in burning and the reserve's effort to keep units in rotation was recognized during the Land Management Review and the reserve received a rating of "excellent" (4.57/5) in the land management category of prescribed fire. With the staff restructuring during the evaluation period, the position held by the certified prescribed burn manager was eliminated in 2013.

Given the challenges of burning land adjacent to urban areas, and the need for expertise to achieve the desired structure and composition of the reserve's pyrogenic communities, having

a certified prescribed burn manager continues to be important for the reserve. At the time of this review, the stewardship staff members were largely entry-level park rangers and did not have the required training and certification. Partnerships with the state to conduct the necessary burning were not sufficient since these partners are not able to take the lead on land that they do not directly manage.

Since the evaluation site visit, the reserve has made great strides toward filling some of these gaps, notably the approval for the terrestrial stewardship coordinator to pursue Florida Prescribed Fire Certification and a contract with University of North Florida to extend the ability of the reserve to both conduct prescribed burns and conduct research on the impacts of prescribed burns on coastal habitats in the region. The Office for Coastal Management commends the reserve for taking these steps to ensure that the reserve continues to successfully implement its burn program in the manner needed for appropriate management of the reserve.

Regionalization of the Reserve

The reserve serves as a regional hub for the Florida's East Coast region aquatic preserves. The reserve manager is the regional administrator for three aquatic preserve field offices and associated staff members in Northeast Florida. The reserve provides technical and administrative support for the field offices, including budgeting, grants and contract management, facilities and equipment maintenance, troubleshooting issues, and training and assistance on activities such as water quality monitoring, education, and resource management. Because of the connection between the reserve and the other aquatic preserve regions, the reserve was well positioned to play a key role in the Deep Water Horizon response. Reserve staff members worked with NOAA to assist in developing baseline sampling protocols and the sampling plan. The nexus between the reserve and the rest of the aquatic preserves meant that staff members were able to coordinate across multiple counties to set up a website for communication, and review aquatic preserve plans and maps to help determine what impacts might occur and at what locations. The relationship between the reserve and the aquatic preserve system continues to broaden the regional reach for the reserve's monitoring information.

Spartina Transplant and Restoration Project

The reserve has done well at working creatively to resolve challenges. For example, the reserve has been successful at becoming permitted as a nursery in order to harvest *Spartina* from within the reserve to transplant at living shoreline restoration project sites. This results in both cost savings and ensures biological consistency within the reserve. Additionally, staff members apply adaptive management to monitoring protocols to minimize damage to marshes during sampling.

Another example of innovation and creativity has been the education program's addition of

online tools, Google apps, software, and drone technology into both research and education activities. Engaging students to learn how to use drones in marsh monitoring allows data to be gathered without damaging the vegetation and gets students excited about technology and science.

Responsiveness

The reserve continues to excel across sectors at being responsive to local coastal management issues. This is exemplified by the reserve's work in response to community concerns about the decrease in harvestable oysters and the long-term viability of oyster beds in Northeast Florida. This effort has three interrelated parts. An initial response to the issue was to provide support for and participate in the Oyster and Water Quality Task Force. The task force formed to explore this issue was initially established before the existence of the reserve. The reserve played a key role in reinvigorating the task force and helping to renew the participation of partner organizations across the region to address new concerns. This has resulted in part two, the testing and application of new methods for assessing and protecting oyster habitat. Use of similar methods among partner organizations will allow a more accurate understanding of results. The third part of this is the Community Oyster Shell Recycling Program, which has both education and habitat and shoreline restoration components. The program has been recognized as a model for other areas needing to find a source for shell for shoreline restoration.

Findings for Restoration

Accomplishment: Regionalization of the reserve's research and monitoring methods to other aquatic preserves in Northeast Florida has improved communication and response, and facilitated the use of data for decision-making.

Accomplishment: The reserve is creatively using new technologies for education and monitoring, including the use of drones for new mapping techniques and vegetation monitoring.

Accomplishment: The reserve has excelled at working across sectors to respond to local coastal management needs and issues. For example, the combined efforts of the Shellfish and Water Quality Task Force, Oyster Condition Assessment, and Community Oyster Shell Recycling Program have contributed to addressing community concern about a decrease in harvestable oysters and the long-term viability of oyster beds in Northeast Florida.

Climate Resilience

Through the information provided and interaction with stakeholders during the site visit, it is clear that the reserve has developed a culture of collaboration that is just as recognized and

valued by the community and stakeholders as its scientific expertise and the role it plays in providing access to science. The reserve works with partners on various climate resilience research projects, is known for connecting partners, and provides facilitation of meetings to ensure productive outcomes. For example, the reserve was helpful in connecting the National Park Service with a researcher from University of Florida to discuss climate change impacts in Florida's parks during the National Park Service's Climate Friendly Parks workshop held in St Augustine. A University of Florida researcher based at the Whitney Marine Lab praised the reserve staff for serving as connectors to other researchers in the area. The reserve's culture of collaboration has resulted in many more research projects than otherwise would have been possible. The Coastal Training Program plays a key role in outreach of research results and translation of those results for the decision-making community. For example, National Park Service staff commended the reserve's Sea Level Rise in Matanzas Workshop for giving them accurate, watershed specific information that they will use to inform long-term planning.

The reserve provides a unique opportunity for research as it provides researchers from partner organizations access to areas of varying levels of development from the undeveloped basin of the reserve which can serve as a reference site to the developed basin of St Augustine. The reserve allows researchers to explore forecasting ecosystem services changes, impacts of runoff, salt water intrusion, and ecosystem responses to development that does not allow for a changing shoreline.

Planning for Sea Level Rise in the Matanzas Basin

The reserve partnered with the University of North Florida and a fourteen member steering committee made up of many stakeholder groups with representation that included ecotourism, natural resource management, municipal government, and land development. This NOAA Science Collaborative project garnered stakeholder input into adaptation planning for the region. Over three years, several public workshops were held to engage local residents in future scenario planning to help decision makers understand what is needed for sea level rise planning. The project will result in three products: a publically available synthesis project report; a GIS data set for the Matanzas basin study area; and a guidebook that includes tools, sea level rise adaptation planning information and principles, and discussion of phases of the project. The intent is that the communities around the reserve, as well as other communities, will be able to use this information to address sea level rise in their areas.

Access to Science

The reserve strives to make the results of their research around climate resilience and coastal management issues more available to decision-makers, community members, and other researchers. For example, in addition to the Matanzas basin project outputs discussed in the section above, the reserve highlighted the results of the project during the 2014 State of the Reserve symposium, since one of the areas discussed was sea level rise. Symposium events provide participants with an annual update about research, education, and stewardship

projects going on at the reserve. Although historically the State of the Reserve was geared toward a technical audience, several members of the local community attended. With the intent of expanding ways to make science more widely accessible, the 2015 symposium began a new practice of including a less technical morning session open to the public, followed by an afternoon session geared toward its traditional audiences. Also in line with accessing science is the ability to make scientific publications and technical reports available to the public for review after a project is completed. The reserve maintains an extensive list of research projects conducted at the reserve, which enables scientists to quickly learn about and build on research and monitoring that has already been completed, and encourages collaboration between scientists. The list also serves to ensure that future research and monitoring efforts most efficiently and effectively address coastal management issues such as climate resilience.

Finding for Climate Resilience

Accomplishment: The reserve continues to excel at translating science for citizens and coastal decision-makers. Examples are the Planning Matanzas project, inclusion of a session State of the Reserve symposium that targeted members of the community, and maintenance of a database of ongoing and completed projects to share with new researchers.

Evaluation Metrics

Beginning in 2012, National Estuarine Research Reserves began tracking their success in addressing three evaluation metrics specific to their programs. The evaluation metrics include a five-year target and provide a quantitative reference for each program about how well it is meeting the goals and objectives it has identified as important to the program.

The goals and objectives are from the Guana Tolomato Matanzas National Estuarine Research Reserve 2009-2014 Management Plan. Metric 3 was revised in July 2014, and data for the revised measure is reported below.

METRIC 1

Goal: Improve the conservation of natural biodiversity by implementing the principles of adaptive management and ecosystem science.

Objective: By 2017, disseminate up-to-date scientific information regarding climate change and sea level rise (Obj. 35)

Strategy: The reserve will improve the capacity of local coastal decision makers to address sea level rise through a collaborative planning process that incorporates both ecological and economic factors. In partnership with the University of Florida and through the National Estuarine Research Reserve System's Science Collaborative program, a collaborative planning

process will be initiated in the Matanzas basin. The initial phase will be a technical analysis of modeling for sea level rise, urban planning projections, and ecological adaptations to sea level rise models. This research will guide the collaborative process, which will include a steering committee of local decision makers as well as public workshops. The Coastal Training Program performance monitoring system will be used to track and evaluate the process. (2011 NERRS Science Collaborative Grant – “Planning for Sea Level Rise: A Pilot Study to Evaluate and Improve the Development and Delivery of Habitat Vulnerability Assessments and Adaptive Conservation Designs to Coastal Decision Makers”).

Performance Measure: Percent of training participants reporting increased knowledge and understanding of sea level rise and potential impacts within the Matanzas Basin, over the five-year period.

Target: 90% of training participants report increased knowledge and understanding of sea level rise and potential impacts within the Matanzas Basin, over the five-year reporting period.

First Year Results: 98.47% of training participants report increased knowledge and understanding of sea level rise and potential impacts within the Matanzas Basin.

Second Year Results: 92% of training participants report increased knowledge and understanding of sea level rise and potential impacts within the Matanzas Basin.

Third Year Results: All (100%) of training participants report increased knowledge and understanding of sea level rise and potential impacts within the Matanzas Basin.

Fourth Year Results: no workshops held.

Discussion: The Coastal Training Program’s post-training evaluations show that the Planning for Sea Level Rise program is increasing the knowledge of almost every attendee and that the reserve has exceeded its target. The cumulative data from the four-year period show 322 of 328 (98.17%) respondents from 11 workshops held from December 2012 to September 2014 indicated an increase in knowledge (“A Great Deal,” “A Lot,” “Some,” or “A Little”) regarding the information received. The Planning for Sea Level Rise program ended in 2014; hence, there are no results to report in 2015.

METRIC 2

Goal: Provide a better understanding of the ecology of terrestrial and aquatic flora and fauna in coastal and estuarine ecosystems through long-term research and monitoring efforts.

Objective: Identify the current status, biological significance, and source of water column, sediment, and oyster tissue contaminants to support the tracking of long-term changes in the biological significance, source, and trends in water column, sediment, and oyster tissue contaminants. (Obj. 16)

Strategy: Maintain the primary core System-Wide Monitoring Program element of water quality, nutrient, and weather monitoring and collect, analyze, and correct the data; then submit all data to the Centralized Data Management Office (CDMO). The data will consistently meet the QA/QC data standards and submission deadlines set forth by the CDMO.

Performance Measure: Percentage error-free rate of water quality, nutrient, and weather data submitted to CDMO, throughout the five-year reporting period.

Target: 90% error-free rate of water quality, nutrient, and weather data submitted to CDMO throughout the five-year reporting period.

First Year Results: 99.06% error-free rate of water quality, nutrient, and weather station data submitted to the Central Data Management Office.

Second Year Results: 98.85% error-free fate of water quality, nutrient, and weather station data submitted to the Central Data Management Office.

Third Year Results: 98.41% error-free rate of water quality, nutrient, and weather station data submitted to the Central Data Management Office.

Fourth Year Results: 98.58% error-free rate of water quality, nutrient, and weather station data submitted to the Central Data Management Office.

Discussion: The reserve is meeting data submission deadlines and exceeding the target for error-free data.

METRIC 3

Goal: Improve the conservation of natural biodiversity and cultural resources in the Guana Tolomato Matanzas Research Reserve by using the results of research and monitoring to guide science-based education.

Objective: This aligns with multiple objectives within the reserve's management plan.

- Increase activities to explain the reserve's mission to the general public to ensure that the mission is understood and appreciated.
- Integrate the reserve's education, research, and stewardship programs to more effectively educate K-12 students and teachers and college audiences on issues such as estuarine ecology, fire ecology, invasive species, cultural resources, and watershed conservation.

Strategy: Incorporate relevant information (for example, new research, habitat restoration project results) as it becomes available into educational programming and outreach materials.

Interpret the reserve's resources, research, and stewardship activities through displays, fact-sheets, posters, K-12 programming, and public outreach activities.

The following are primary examples of the outreach events and formal programs to be counted, and each would be counted as one activity.

- Formal visits by a class
- Summer camp
- Volunteer-led hike
- Booth at a festival
- Visit to a classroom (offsite)
- Family seining

Performance Measure: Number of educational activities (including formal programs and outreach events) conducted annually by reserve staff members and volunteers.

Target: 200 educational activities (including formal programs and outreach events) conducted annually by reserve staff members and volunteers.

First Year Results: 275 education activities were conducted.

Second Year Results: 253 educational activities were conducted.

Third Year Results: 254 educational activities were conducted.

Fourth Year Results: 237 educational activities were conducted.

Discussion: The reserve has a well-functioning education program and has met and exceeded its target by 38% in year one, 27% in years two and three, and 19% in year four. It should also be noted that during year three, several of the activities were conducted at the south end of the reserve. This specifically addresses a program suggestion from the previous evaluation period.

Conclusion

For the reasons stated herein, I find that the Florida Department of Environmental Protection is adhering to the programmatic requirements of the Coastal Zone Management Act and its implementing regulations in the operation of its approved Guana Tolomato Matanzas National Estuarine Research Reserve.

These evaluation findings contain one necessary action and three recommendations that must be considered before the next regularly scheduled program evaluation. The necessary action is mandatory and must be completed by May 31, 2017. Program recommendations that must be repeated in subsequent evaluations may be elevated to necessary actions.

This is a programmatic evaluation of the Guana Tolomato Matanzas National Estuarine Research Reserve that may have implications regarding the state's financial assistance awards. However, it does not make any judgment about or replace any financial audits.

Signed by Jeffrey Payne
Jeffrey Payne, Ph.D.
Director, Office for Coastal Management

Dated 2/22/2017

Appendix A: NOAA Office for Coastal Management's Response to Written Comments

The NOAA Office for Coastal Management received a large number of responses praising and describing the positive impacts of the Guana Tolomato Matanzas National Estuarine Research Reserve's programs. NOAA thanks all of the following respondents for taking the time to comment and providing input on the implementation of the reserve's programs.

Janet Koehler
GTM NERR Volunteer
Ponte Vedra Beach, Florida

Comments: Thank you for allowing me to provide my views on the performance of the GTM NERR (GTM Research Reserve) for the period from July 2007 to July 2015. I have been a volunteer at the GTM Research Reserve for over 10 years. I am also a neighbor living relatively close to the Ponte Vedra building. In my opinion, the GTM Research Reserve is a tremendous asset to St. Johns County and beyond.

I volunteer with the Butterfly Monitoring Project at the GTM Research Reserve. We have been providing monthly data to the Florida Butterfly Monitoring Network for over six years. I also help with the elementary school student visits during the school year. I see the appreciation the students, parents and teachers express for the quality of the programs. The programs are interesting to the children and meet standards set by the school districts for program content. Recently the Education Department has implemented two programs specifically targeted to helping elementary, middle and high school students understand the impact of rising sea levels. The support for volunteers at the GTM Research Reserve is excellent in the training provided, the scheduling of assignments and the support with needed equipment and supplies. The volunteer coordinator makes all of the volunteers feel appreciated.

The GTM Research Reserve partners with the St. Johns County 4-H Youth Development Program by co-sponsoring the Marine Ecology Club. I am the volunteer club leader and other Reserve volunteers help as well. The Reserve provides classroom space, equipment and supplies. But equally as important, the staff supports the children in many other ways. The Education Department assists with programs including allowing the children to participate in a restoration project; the Publicity Officer assists with equipping the meeting rooms and getting media coverage for some of our activities; the rangers keep the building open after hours so that parents can get in to pick up their children; we are allowed to keep live plants in an aquarium and on the grounds; and the Aquatic Preserves group has assisted us in identifying specimens and with volunteer projects. Researchers at the Marineland office have shown the children some of the research that is conducted there and the equipment used. Each year Dr. Shirley writes a letter to each of the children who do well at the state Marine Ecology Contest congratulating them on their achievement.

As a resident of this area, I appreciate the work of the Coastal Training Program people and their volunteers in eradicating invasive plant species and helping policymakers understand what they need to plan for in a changing climate future. Because I am a volunteer Master Gardener, I became aware of the partnership between the Research Reserve and St. Johns County Extension Service to educate landscape professionals about the state fertilizer regulations. This should help with clean water in our area. As a neighboring homeowner, I appreciate the prescribed burn program the Rangers conduct reducing the probability that wildfires will reach my home.

All in all, I think the GTM Research Reserve staff is doing an outstanding job. What would I recommend that they could do to continue to improve? Many local people still think of the Reserve as a “state park”. Only recently have the traffic signs been changed to reflect that it is GTM Research Reserve and not Guana State Park. The Public Relations Officer has been doing a great job gaining media coverage to increase public awareness of the many benefits that the Reserve is providing to us. Perhaps funding for a public awareness campaign would speed up closing the awareness gap.

Thank you again for seeking input from the public.

NOAA Office for Coastal Management’s Response: The NOAA Office for Coastal Management Thanks Ms. Koehler for her comments. The office is supportive of efforts to educate the public regarding the mission of the National Estuarine Research Reserve System and has passed on your suggestion to the reserve.

J. Carl Blow
Chair
Florida Inland Navigation District

Comments: The Florida Inland Navigation District (FIND), the state sponsor of the Atlantic Intracoastal Waterway (AICW) in Florida, is pleased to provide comments for the CZMA 312 performance evaluation of the Guana Tolomato Matanzas (GTM) National Estuarine Research Reserve.

FIND acknowledges and appreciates the GTMNERR’s efforts to monitor water quality and inform the public on the importance of the waterways. Predating the GTMNERR and water quality protection efforts, the Atlantic Intracoastal Waterway (AICW) which passes through the GTMNERR is a multi-state transportation asset responsible for major economic impacts and job creation in the State of Florida. Referenced as M-95, periodic dredging is required to maintain this important national transportation asset.

The Florida Inland Navigation District (FIND) requests the GTMNERR 5 year plan recognized the

100+ year history of AICW as a national transportation asset that must be periodically maintained with dredging activities. A well-marked and maintained AICW helps to keep boater in the channel and away from natural resources such as oyster bars and sea grasses. Recent studies by the U.S. Army Corps of Engineers Research Center in Vicksburg, Mississippi and the Florida Institute of Technology, Melbourne, Florida are showing that maintenance dredging of the AICW channel improves water quality by removing nitrogen and phosphorous deposits in addition to removing sediment deposits that may be re-suspended by wind and wave action.

Thank you for the opportunity to comment.

NOAA Office for Coastal Management's Response: The NOAA Office for Coastal Management Thanks Mr. Blow for his comments and will share them with the reserve. The office supports the reserve in working with partners to provide information to guide decision-making about dredging activity. The reserve is in the process of developing a new management plan, and part of the process for completion is an opportunity for public comment. Management plans address activities conducted within the reserve boundaries. NOAA reviews National Estuarine Research Reserve System management plans and public comments and approves plans under the Coastal Zone Management Act.

Alicia McKinney Steinmetz
Environmental Scientist
Friends of the Summer Haven River Inc.

Comments: The Friends of the Summer Haven River welcomes the opportunity to provide comments on the Guana Tolomato Matanzas (GTM) National Estuarine Research Reserve CZMA 312 Final Evaluation Findings. We are a grassroots organization formed with the sole intent of obtaining funding to restore flow to the Summer Haven River (SHR) in partnership with the St. Augustine Port, Waterway, and Beach District. The river is geographically located in the GTM's southern section, which extends from Moses Creek to south of Pellicer Creek in the Matanzas River Basin in St. Johns County. The SHR is a natural, tidal marine river situated parallel to and between the Atlantic Intracoastal Waterway and the Atlantic Ocean, extending 2.3 miles from Matanzas Inlet at the north end to its confluence with the Matanzas River (Atlantic Intracoastal Waterway) at the south end, which is directly across from Pellicer Creek Aquatic Preserve and approximately a half mile north of the GTM Marineland office.

The SHR is bordered on the west by the St. Johns County Helen Mellon Schmidt Park and the federally-owned Rattlesnake Island, where Fort Matanzas River National Monument is located and operated by the National Park Service, and to the east by residential properties and former beach dune. The Summer Haven River was a thriving, natural, navigable waterway which existed as long as records in the area have been kept. It preceded and served as the Atlantic Intracoastal Waterway prior to the 1930s. Summer Haven was established in the late 1800s with the historic beach homes existing as the oldest on State record.

The Summer Haven River was once a flowing river; however, following three consecutive tropical storms in 2008, the Atlantic Ocean breached the beach dune system causing a massive influx of sand into the river and complete loss of beach dunes. Sand infiltration dammed and restricted water flow about mid-river; between the river mouth north at Matanzas Inlet and its confluence with the Matanzas River at the south end.

Prior to the beach dunes washing into the SHR, the river was ecologically-rich, serving as nursery and foraging grounds for an abundant and diverse species of fish, crab, dolphin, sea turtles, manatee, birds, oysters, clams, and endangered/listed species (see attached Biological Summary). The river functioned as a major pathway running from Pellicer Creek to Matanzas Inlet and assisted in the flushing/scouring of these areas. This region served as one of the most frequented natural areas in St. Johns County by recreational boaters, fishermen, kayakers, paddle boarders, swimmers, and supported commercial fishing, as well as oyster and clam harvesting. Additionally, the Summer Haven River was used annually for ecological field-based instruction by the St. Johns County Marine Science Program for middle school students, which holds three two-week sessions each summer. The program has put over 900 St. Johns County School District students on the water each summer for the past 33 years. The marine science program operates with an academic agenda placing emphasis on learning about the natural history and importance of our local salt marsh habitats and coastal ecology. Much of that instruction and activity formerly took place on the Summer Haven River prior to the sedimentation. Unfortunately, the closing of the river has forced the marine science program to move to other areas of the county that are less protected for some of their field-based lessons. Restoration of the river would once again provide an ideal coastal learning environment for these students.

In 2014, all of the required environmental permits authorizing restoration and removal of sand from the river were issued from the applicable permitting agencies: Florida Department of Environmental Protection, U.S. Army Corps of Engineers, and Florida Fish and Wildlife Conservation Commission. Currently, engineering design plans are being finalized by Taylor Engineering; and, as of July 7, 2015, the Florida Legislature endorsed the restoration by allocating \$400,000 to complete the final engineering plans. Other governmental agencies have endorsed the SHR Restoration including: the Florida House of Representatives, Paul Renner and Cyndi Stevenson; Florida Senator Travis Hutson; Florida Chief Financial Officer, Jeff Atwater; St. Augustine Port, Waterway, and Beach District; St. Johns County Board of County Commissioners; Mayor of Palm Coast, John Netts; and St. Johns County School District Marine Science Program. In addition, restoration of the SHR has gained public support from agencies, entities, and individuals; including, but not limited to: St. Johns County Marine Science Program; Marineland of Florida; Flagler County Sportfishing Club; Coastal Angler Magazine Northeast Florida; St. Johns County Sea Turtle Patrol; A1A Scenic Highways; Matanzas Park Rentals; Devil's Elbow Fishing Resort; Cubbedge Seafood House; A List Properties Real Estate; 3 Goodrich Real Estate; and over 2,000 signatures on petitions not derived from social media, but rather citizens who have personal experiences on the SHR.

As stated by Kenneth Craig, P.E. Vice President of Coastal Engineering for Taylor Engineering and St. Augustine Port, Waterway, and Beach District Engineer, “The restoration project will remove about 216,000 cubic yards (165,144 cubic meters) of sand from the river to re-establish river depths to a pre-breach condition, restore tidal circulation, allow the recovery of natural resources, return historic water access, and provide high quality recreation (fishing, swimming and boating) lost in the now filled and stagnant portions of the river. River restoration will restore commercial oyster harvesting to the area. The restoration will recreate about 32 acres of open water and shallow water estuarine habitat. The sand removed from the river will be placed on the adjacent dune and beach system. This will provide habitat for sea-turtle nesting and other dune dependent species lost due to the breach. The reconstructed beach and dune system will reduce the likelihood of future breaches and provide storm protection for existing homes and SR-A1A.”

Friends of the SHR request acknowledgement from the GTM Reserve on the ecological importance of having the river returned to its natural and historical state, as well as the Reserve’s participation in restoration efforts. It is our opinion after reviewing the GTM Reserve’s CZMA 312 Final Evaluation Findings report, that many of the programs discussed are congruent with the SHR Restoration project. For instance, overseeing a baseline “current condition” water quality monitoring and biological study (e.g., diversity, abundance and distribution of aquatic species such as oysters, clams, fish, birds, turtles, etc.) in the SHR prior to restoration, followed by post-restoration monitoring, could yield significantly beneficial data to not only local water resource managers by reiterating the biological necessity of small, protected coastal rivers for nursery and feeding grounds, but could also be valuable for coastal river restoration projects in other geographical areas. From a scientific research standpoint, the SHR Restoration project affords numerous possibilities for a research professional or graduate fellow to design, implement, monitor, analyze, and publish findings on the re-colonization of key aquatic species of interest following restoration of their habitat.

The GTM Reserve’s CZMA 312 Final Evaluation Findings report also discussed education, outreach, volunteer, and stewardship programs, all of which, the SHR Restoration would be ideally suited in any of these areas. Not only will the restoration implementation remove the sand which inhibits river flow, but the beach dune system that washed into the river will be reconstructed and stabilized with coastal vegetation to prevent potential breaches. Strategic efforts to accelerate oyster bed re-establishment in the river are also planned. Thus, these phases of the restoration project present a unique opportunity for students and volunteers to become involved in coastal restoration and environmental stewardship.

Friends of the Summer Haven River appreciate the opportunity to comment.

NOAA Office for Coastal Management’s Response: The NOAA Office for Coastal Management Thanks Ms. Steinmetz for her comments and will communicate them to the reserve. The Summer Haven River is a naturally dynamic system. The office supports the reserve’s effort in

providing scientific information for decision-making, since this is part of the mission of the National Estuarine Research Reserve System. The reserve is in the process of developing a new management plan, and part of the process for completion is an opportunity for public comment. Management plans address habitat restoration activities conducted within the reserve boundaries. NOAA reviews and approves National Estuarine Research Reserve System management plans under the Coastal Zone Management Act.