

# Final Evaluation Findings

Weeks Bay

National Estuarine Research Reserve

October 2015 to July 2022

February 2023



Office for Coastal Management  
National Ocean Service  
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## Summary List of Findings

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 Weeks Bay National Estuarine Research Reserve by the Alabama Department of Conservation and Natural Resources, the designated lead agency, for the period from October 2015 to July 2022. The evaluation focused on two target areas: program administration and growing communities and protecting coastal habitats.

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:

### Program Administration

**Accomplishment:** The Weeks Bay Reserve demonstrated flexibility, creativity, and nimbleness in continuing to meet the needs of their partners and stakeholders during the pandemic and in recovery from Hurricane Sally that made landfall in September of 2020.

**Accomplishment:** The partnership and close working relationship that the Weeks Bay Reserve and the Alabama Coastal Management Program have fostered has amplified the ability of both programs to assist coastal communities and habitat managers in improving resilience in the coastal region of Alabama.

**Accomplishment:** The Weeks Bay Reserve has been successful in filling two key positions: the reserve manager and the facilities manager. Both positions had been unfilled for an extended time due to several internal and external factors. These positions are critical for ensuring that the reserve continues to serve coastal Alabama.

**Accomplishment:** The Alabama Department of Conservation and Natural Resources has demonstrated steadfast investment in building and maintaining Weeks Bay Reserve facilities and infrastructure, providing a platform essential for the success and effectiveness of the reserve's research, education, coastal training, and stewardship programs. For example, the new research dormitory is attracting researchers and was used to house first responders during Hurricane Sally recovery efforts. The availability of classrooms, boardwalks, and vessels as well as other assets such as boat launches, exhibits, and access to natural habitats was identified by reserve partners, program participants, and visitors as critical to their reserve experience and the education and research programs.

**Recommendation:** The Office for Coastal Management strongly encourages the Weeks Bay Reserve to work with the Alabama Department of Conservation and Natural Resources to seek out alternative pathways that expedite reserve staff recruitment and hiring, close capability gaps, and build additional capacity to meet the expanding needs of coastal Alabama communities through established programming. For example, the reserve could leverage the experience from other reserves in their partnerships with local universities that have been successful in helping to fill staffing needs.

**Recommendation:** The Weeks Bay Reserve has a strong network of partners working on coastal management issues in the region who are well connected with local stakeholders and are interested in facilitating and fostering relationship building with new reserve staff members. As the reserve onboards a new Coastal Training Program coordinator who started on January 16, 2023, the reserve is strongly encouraged to leverage that network to reinforce the relationships necessary to the success of that role.

## **Growing Communities and Protecting Coastal Habitats**

**Accomplishment:** The Weeks Bay Reserve's foresight and successful partnerships paved the way for the strategic acquisition of 656 acres of important coastal lands, enhancing resilience by mitigating storm damage, connecting valuable coastal habitats, and providing places for Alabamians and visitors to recreate and enjoy.

**Accomplishment:** The Weeks Bay Reserve has fostered long-term, consistent support of volunteers that augment the reserve's staff and significantly contribute to the mission of the reserve. As the reserve continues to backfill positions and expand its staff, reserve staff members are eager to work with the South Alabama Land Trust to continue to support and strengthen the volunteer program.

**Accomplishment:** The Weeks Bay Reserve is a recognized leader in resilience with collaborative efforts across the reserve's sectors supporting this work. The reserve's integration of land management, research, and outreach resulting in science for decision-making, combined with staff members' engagement with local residents and decision makers, has provided critical support for on-the-ground action in coastal Alabama. The evaluation team heard repeatedly that the reserve staff members partner, participate, support, and bring extensive knowledge to projects, resulting in action that makes communities and habitat more resilient.

**Accomplishment:** The Weeks Bay Reserve has been successful in partnering with local and regional organizations to provide learning experiences that reach a variety of audiences, including previously underserved populations. These reserve-led experiences connect people to their watersheds and estuaries and result in tangible behavior change in communities, including increased financial support for resilience activities like living shoreline installation and decreases in single-use plastics. Collective behavior changes such as these can enhance community resilience.

This evaluation concludes that the Alabama Department of Conservation and Natural Resources is adhering to the programmatic requirements of the National Estuarine Research Reserve System in the operation of the Weeks Bay National Estuarine Research Reserve.

## Program Review Procedures

The Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 et seq.), requires that state coastal zone management programs and national estuarine research reserves that are developed under the act and approved by the secretary of the Department of Commerce be evaluated periodically. Section 312 of the Coastal Zone Management Act and implementing regulations at 15 CFR 921, Subpart E, require that a research reserve be periodically evaluated with regard to 1) its operation and management including education and interpretive activities; 2) the research being conducted within the research reserve; and 3) adherence to the requirements of Section 315(b)(2) of the Coastal Zone Management Act.

The National Oceanic and Atmospheric Administration (NOAA) evaluated the Weeks Bay National Estuarine Research Reserve in fiscal year 2022. The evaluation team consisted of Pam Kylstra, evaluation team lead; Matt Chasse, regional specialist; and Marian Hanisko, Gulf learning services coordinator, all from the NOAA Office for Coastal Management; and Heather Gierloff, Hudson River National Estuarine Research Reserve manager. 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 Alabama Department of Conservation and Natural Resources' State Lands Division and published a notice of intent to evaluate in the Federal Register on June 16, 2022. NOAA also notified members of Alabama's congressional delegation. On June 12, 2022, the Weeks Bay Reserve posted a notice in the Mobile Press-Register newspaper about the public meeting and the opportunity to comment.

As a part of the evaluation process, a review of relevant information was conducted, including annual federal financial assistance award reports, the previous evaluation findings, and information provided by the programs documenting how they are implementing their programs and addressing the programmatic requirements of the Coast Zone Management Act. A survey of stakeholders was conducted, and reserve sector leads were interviewed.

The information review and survey results informed the identification of two target areas for the evaluation: program administration and growing communities and protecting coastal habitats. A virtual site visit was conducted, and the evaluation team held meetings with staff members and group discussions with stakeholders and program staff members to discuss the target areas. Meeting participants helped identify issues and workable solutions to maintain and improve the implementation of the reserve's programs. In addition, a public meeting was held on July 27, 2022, at 6:00 p.m. (Central); interested members of the public could attend on site or online. The public meeting provided an opportunity for members of the public to express their opinions about the implementation of the program. Stakeholders and members of the public were also given the opportunity to provide written comments via email through August 5, 2022. Written comments were received from seven interested parties. The Office for Coastal Management then developed draft evaluation findings, which were provided to the Alabama Department of Conservation and Natural Resources and to the reserve 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.

**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

The Alabama Department of Conservation and Natural Resources continues to successfully implement the federally approved Weeks Bay National Estuarine Research Reserve and continues to be committed to and supportive of the reserve's mission.

## Program Administration

From the beginning, the department and the reserve have placed great emphasis on effective community engagement, and the programs are shaped and guided by the needs of the community. The evaluation team heard consistent support for the reserve and the value it brings to partners, stakeholders, and the broader community in Alabama as well as the Gulf Coast. Reserve staff members are respected in the region and the community as experts. They are recognized as being highly dedicated, knowledgeable, collaborative, and an important part of the community, providing critical information and expertise for decision-making.

As with each reserve, regular management plan updates are required. During the current evaluation period, the Weeks Bay Reserve successfully completed the 2017–2022 plan as called for the necessary action in the prior evaluation findings that were published in July of 2016. Additionally, the reserve is preparing to submit a final draft of the 2022–2027 management plan to NOAA.

### *Examples of Key Efforts*

During the evaluation period, the reserve has experienced the challenges of a small staff, COVID-19, and impacts of Hurricanes Sally and Zeta. The reserve has accomplished much despite the challenges and realized opportunities for positive growth and connection out of the challenges as well. Despite the pandemic, the reserve continued to meet the needs of partners and stakeholders by embracing flexibility and getting creative in their approaches to reaching people. When on-site programs shut down and children attended school online from home, the reserve rapidly shifted to online programming for classroom use and community education. For example, reserve staff produced a video about programs and data they collect, and they held “Tea Time Talks” about various topics. Education staff conducted virtual field trips and “touch” labs, and partnered with the local library to do story time events. Along with other new virtually delivered resources, the reserve staff will continue to offer programming online to broaden access as conditions shift toward a post-pandemic setting, allowing them to reach audiences further up the watershed and those who are not able to travel to the site.

Compounding the challenge of the pandemic, Hurricane Sally made landfall in early fall of 2020. The storm brought down hundreds of trees across reserve properties, damaged boardwalks and water quality monitoring stations, and created loads of debris. The reserve received an outpouring of support from people wanting to help with recovery. The cleanup and recovery continued for over a year after the storm.

**Accomplishment:** The Weeks Bay Reserve demonstrated flexibility, creativity, and nimbleness in continuing to meet the needs of their partners and stakeholders during the pandemic and in recovery from Hurricane Sally that made landfall in September of 2020.

### *Partnership with the Alabama Coastal Area Management Program*

The reserve and the coastal management program are both administered under the coastal section of the State Lands Division within the Alabama Department of Conservation and Natural Resources, and the two programs work closely together to address coastal management issues in the state. The partnership between the coastal management program and the reserve remains strong and the two programs are structured so their respective strengths are leveraged. The components of this partnership that seem to be the keys for its effectiveness are engaged leadership, a manager with direct experience at a reserve, and staff members who are shared between the reserve and the coastal program. For example, the coastal section administrator is directly involved in the administration of the Alabama Coastal Zone Management Program and of the reserve and its on-the-ground activities, which translates to greater awareness among staff in the respective programs of happenings in the other. Because the coastal section administrator came to the position with seven years of experience as a stewardship coordinator at a neighboring reserve, he brings a unique appreciation of the reserve system and an awareness of the strengths of each sector. This perspective has positioned him well to leverage the capabilities of the reserve and coastal management program in support of each other. An example of success credited to this strong partnership include bringing to bear the reserve's research and coastal training assets to support the coastal program's Coastal Zone Enhancement Program (Section 309 Enhancement Program) strategies as follows:

- During the 2016-2020 cycle, coastal management program staff worked with the reserve's Coastal Training Program coordinator to develop a strategy called the Community Resilience Initiative. This project focused on improving floodplain management and increasing participation in FEMA's Community Rating System program across communities in Alabama's two coastal counties.
- During the 2021-2025 cycle, coastal management program staff leveraged a reserve research sector priority to understand the relationship between overwater structures (e.g., docks and piers) and benthic productivity. The project is currently underway, and the reserve welcomed its first Hollings Scholar this year to begin to study these impacts. Through the 309 strategy, the coastal management program will be inventorying overwater structures, developing a database, and working with permitting agencies to develop guidelines and building standards for overwater structures.

The reserve and the coastal management program share and jointly fund several positions; the Coastal Training Program coordinator and the education coordinator who support the coastal program's outreach and technical assistance interactions; and the GIS coordinator who supports digital and print mapping needs. This exemplary arrangement generates a greater awareness of programs and priorities across the offices, broadens the reach of services to more audiences across the watershed, and results in cost savings for the budgets of both programs.

**Accomplishment:** The partnership and close working relationship that the Weeks Bay Reserve and the Alabama Coastal Management Program have fostered has amplified the ability of both programs to assist coastal communities and habitat managers in improving resilience in the coastal region of Alabama.



### *Staffing*

Like many states, Alabama's recruitment and hiring processes can be slow moving and challenging for potential candidates to navigate. This negatively impacts the availability of an applicant pool with the expertise the reserve needs. Reserve staff have been proactive in increasing awareness about available positions and enhancing understanding among potential applicants of the state hiring process. For instance, the education coordinator has been providing technical assistance sessions that guide potential candidates for reserve positions through the intricacies of the register system used by the state for hiring. Additionally, to let people know of reserve positions available, the reserve staff informally advertises them and ensures that those interested in applying understand the register process. Internally, the department and the reserve have learned to wait for the register to update before "pulling" the register to get the list of the top ten scorers. This approach allows newer candidates to be included in the system.

In addition to continuing these forward-looking practices to ensure that potential candidates are aware of opportunities and understand the process, the reserve and the department should work together to explore creative solutions to expedite the hiring process. The evaluation team was pleased to celebrate the announcement that the education coordinator who has been serving as the interim manager for over a year is now the official reserve manager. Additionally, the reserve has hired a new facilities manager slated to start on August 1, 2022.

Increasing tourism and growing populations in coastal Alabama translate to greater demand on reserve programs and maintenance. During the evaluation period, the reserve experienced turnover in support staff and, more recently in that period, several long-tenured staff, including the manager, retired or moved into new opportunities outside of the reserve. The loss of relationships and institutional knowledge that this represents can impede continuity of programming and engagement of partners and stakeholders. The reserve staff addressed this by extending themselves beyond just their own roles to continue to maintain operations and serve the community. While this can be an effective short-term measure, reserve leadership recognizes the need to address these vacancies as staff are becoming overburdened.

The reserve has a strong network of partners working on coastal management issues in the region who are well connected with local stakeholders and are interested in facilitating and fostering relationship building with new reserve staff members. As the reserve onboards a new Coastal Training Program coordinator who started on January 16, 2023, the reserve is strongly encouraged to leverage that network to reinforce the relationships necessary to the success of that role. Additionally, the hiring of a new Coastal Training Program coordinator permits an opportunity to re-evaluate the definition of the program's target audiences, potentially broadening to include previously underserved populations, and to also consider mechanisms to more effectively incorporate the assets of the other reserve sectors into training design to continue to improve integration between sectors.

In addition to the position vacancies, there are several key staff responsibilities that rely on a single staff person. While collaboration and leveraging capabilities across programs is essential to the reserve's ability to meet stakeholder and partner needs, dependence on capabilities of a single staff member to be able to carry out programs can lead to acute pinch points at times. For instance, one staff member is USCG certified to captain the 42' Weeks Bay Explorer pontoon boat which is used for large educational groups and tours. These activities are limited to those times when that staff member is available.

In light of a slow-moving state hiring process and increasing demand on current staff, the division and reserve are encouraged to explore novel ways to augment the staff capacity. For example, other reserves across the country have had success in pursuing partnerships with local universities to support additional staff. The Weeks Bay Reserve leadership is encouraged to connect with those reserves to gain an understanding of how these partnerships could work in Alabama. Once additional staff become available, then the reserve staff would have more time to invest in onboarding interns, training volunteers, and cross-training staff.

**Accomplishment:** The Weeks Bay Reserve has been successful in filling two key positions: the reserve manager and the facilities manager. Both positions had been unfilled for an extended time due to several internal and external factors. These positions are critical for ensuring that the reserve continues to serve coastal Alabama.

**Recommendation:** The Office for Coastal Management strongly encourages the Weeks Bay Reserve to work with the Alabama Department of Conservation and Natural Resources to seek out alternative pathways that expedite reserve staff recruitment and hiring, close capability gaps, and build additional capacity to meet the expanding needs of coastal Alabama communities through established programming. For example, the reserve could leverage the experience from other reserves in their partnerships with local universities that have been successful in helping to fill staffing needs.

**Recommendation:** The Weeks Bay Reserve has a strong network of partners working on coastal management issues in the region who are well connected with local stakeholders and are interested in facilitating and fostering relationship building with new reserve staff members. As the reserve onboards a new Coastal Training Program coordinator who started on January 16, 2023, the reserve is strongly encouraged to leverage that network to reinforce the relationships necessary to the success of that role.

### **Facilities**

Reserve facilities have been expanded and rehabilitated to better accommodate teachers, students, visiting researchers, partners like the Division of State Lands crews, and visitors. As an example, the new research dormitory completed in 2016 has more than doubled the capacity of the previous dormitory and, along with the Weeks Bay Resource Center, is solar powered. The installation of solar panels on both facilities was funded through a NOAA Procurement, Acquisition, and Construction Award. The expanded capacity of the dormitory has allowed multiple research teams to be housed concurrently. This not only enhances the reserve's ability to support work of visiting researchers, it has resulted in new collaborations between researchers that came about from the time they spent together in the dormitory. During Hurricane Sally recovery efforts, the new research dormitory housed first responders and served as a response center. To ensure continued operation during power outages and to facilitate disaster response, the reserve is in the design phase of a NOAA Procurement, Acquisition, and Construction Award funded project to incorporate upgrades to these systems, such as a generator and a power wall.

The reserve has invested in installation, maintenance, and improvement of other assets, including classrooms, boardwalks, vessels, floating dock and kayak launch, boat launch parking, exhibits, and access to natural habitats, that are essential to the support of education, research, and the visitor

experience. For instance, the Baldwin County Master Gardeners program highly values the use of the reserve classroom and pitcher plant boardwalk during its certification process and for program member excursions. Through these experiences, program participants gain an appreciation of the importance of coastal land and water conservation.

**Accomplishment:** The Alabama Department of Conservation and Natural Resources has demonstrated steadfast investment in building and maintaining Weeks Bay Reserve facilities and infrastructure, providing a platform essential for the success and effectiveness of the reserve's research, education, coastal training, and stewardship programs. For example, the new research dormitory is attracting researchers and was used to house first responders during Hurricane Sally recovery efforts. The availability of classrooms, boardwalks, and vessels as well as other assets such as boat launches, exhibits, and access to natural habitats was identified by reserve partners, program participants, and visitors as critical to their reserve experience and the education and research programs.

## Growing Communities and Protecting Habitat

### *Examples of Key Efforts*

#### *Land Acquisition*

Baldwin County continues to be one of the fastest growing counties in the state of Alabama. Since 2015, it has experienced an annual average population increase of 2.33% for a total of 228,613 in 2020 (U.S. Census Bureau). If the projected total of 239,371 in 2022 is reached, that would represent an increase of 18% over the evaluation period ([World Population Review](#)). This growth continues to result in the loss of habitat to conversion through development, and subsequent increased vulnerability to storms and nonpoint-source polluted runoff that has impacts on water quality. The reserve and its partners cooperate in their work to protect land as a way to enhance resilience, provide a buffer from storms, connect habitats, provide pathways for habitat migration, and provide opportunities for recreation.

Just as in the previous evaluation period, the reserve has continued to successfully work with partners to protect key habitats through land acquisition. The area the reserve manages has been expanded through targeted acquisition of lands with funding and assistance from the Alabama Forever Wild Land Trust Program, NOAA, the Alabama Department of Conservation and Natural Resources, the South Alabama Land Trust, The Nature Conservancy, and others. The lands acquired by the reserve during the evaluation period include the Stelzenmuller, Hiatt, and Ollinger tracts (242.2 acres), the Lipscomb tract (64 acres), the Metcalf tract (2.75 acres), the Beckwith and Harris tracts (29 acres), the Williams tract (163 acres), the Holmes tract (95.6 acres), and the Lloyd tract (59.88 acres), for a total of 656 acres. These acquisitions are strategic in that they are adjacent to lands already protected by reserve partners. While all of the acquisitions are important in habitat protection, two of the tracts are particularly critical because they had greater potential for habitat loss had they not been acquired. Plans for land acquisitions are informed by stewardship and research staff to help identify important research questions related to the restoration of acquired parcels.

The evaluation team recognizes that the reserve understands there is an increased cost of management associated with the newly acquired parcels. Prioritizing acquisition planning through the reserve's management plan is a key factor in ensuring that staff have the capacity to manage reserve additions, given the multiple new funding opportunities related to the Bipartisan Infrastructure Bill through NOAA and other federal agencies.

**Accomplishment:** The Weeks Bay Reserve's foresight and successful partnerships paved the way for the strategic acquisition of an additional 656 acres of important coastal lands, enhancing resilience by mitigating storm damage, connecting valuable coastal habitats, and providing places for Alabamians and visitors to recreate and enjoy.

### *Land Management: Prescribed Burns*

Prescribed burning serves to reduce fuel and the risk of wildfires, impede growth of invasive vegetation while promoting growth of native plant species, and restore and improve habitat for wildlife and native plants. The reserve's prescribed fire work has been a significant success. In consideration of the use of prescribed fire, the reserve engages in planning and preparation to ensure the balance of ecological benefits with the health and safety of staff members and members of the communities around the reserve. All reserve field staff members have completed prescribed burn training and work with certified burn managers within the department's State Lands Division, and often partner with trained staff members from The Nature Conservancy to implement the prescribed burns and to accomplish the management goals for reserve parcels. The Nature Conservancy's crews were especially helpful with conducting prescribed burns around sensitive habitats like the pitcher plant bog after Hurricane Sally.

As in many areas, the value of prescribed fire to the community and habitat is not always well understood by those living near or visiting areas adjacent to the burn area. During the pandemic, the reserve produced outreach videos about fire, and the stewardship coordinator conducted an online "Tea Time Talk" discussing its use to aid marsh migration to uplands, concurrent with sea level rise, and to reduce fuel loads, decreasing fire risk. These activities allayed concerns about local prescribed fire activity generated by seeing news about the active fire season in the West, and increased an appreciation for the benefits of prescribed fire.

### *Volunteers and Friends Group*

Volunteers contribute to the success of the reserve by contributing time and expertise across the reserve's work. Dedicated volunteers work with the reserve in a number of different ways. For instance, as a part of the stewardship program, after prescribed fires, school groups help replant longleaf pines in burn areas. The reserve partners with the U.S. Department of Agriculture trapping team and works with volunteers to manage feral hogs. Volunteers also assist in pitcher plant seed collection and growout of seedlings to plant, helping to maintain the health of the pitcher plant bog ecosystem.

The GulfCorps is a program sponsored by NOAA through the RESTORE Council work in response to the Deepwater Horizon oil spill and was established to provide workforce training while supporting conservation. The reserve has hosted GulfCorps teams annually since 2017 to help with conservation efforts, including restoration activities like removal of invasive vegetation, repairs to facilities such as boardwalks, and fuel reduction ahead of prescribed burns. Up to 100 GulfCorps crew members are supported by reserve staff during their annual weeklong orientation and training. Many reserve personnel including stewardship, Coastal Training Program, and education program staff members are

involved in providing training and guidance on topics like plant identification, monitoring protocols like canopy density and ground cover classifications, and skills such as the safe use of chainsaws. The GulfCorps participants discover new interests and develop marketable skills as a result of reserve staff members' commitment to this program. For instance, the reserve's System-Wide Monitoring Program (SWMP) technician became acquainted with the reserve's work as a GulfCorps team member. Other reserve staff members regard him as a significant asset to the team. While the reserve greatly benefits from the GulfCorps volunteer work, training and managing volunteers involves a significant investment of staff resources.

The Friends group that supports the reserve began as the Weeks Bay Reserve Foundation when it was formed in 1990 and became accredited as a land trust in 2009. Over time, it has broadened its scope and changed its name in 2020 to the South Alabama Land Trust (SALT). SALT now partners with the reserve to support land acquisition, teacher professional development, education, and summer activities for all ages. The reserve's relationship with SALT professional staff has improved as the reserve's approach to communication and connection has become more direct. The responsibility for continuing to foster that relationship and coordination is no longer solely on the manager's shoulders, but is now shared among the reserve staff. Day to day interactions with SALT are more informal and efficient, and SALT routinely requests participation of reserve staff in land acquisition meetings.

SALT has played a key role in the three most recent land acquisitions, helping to negotiate with landowners to secure purchase agreements, providing property assessments, and submitting parcels to the Deepwater Horizon project portal. The reserve has relied on SALT to help with volunteer coordination for special projects, and with the impact of Hurricane Sally, SALT helped to recruit volunteers to clean up storm debris and for repairs to facilities like the pitcher plant boardwalk and the pier. As the reserve continues to backfill positions, and expand its staff, reserve staff members are eager to work with SALT to continue to support and strengthen the volunteer program.

**Accomplishment:** The Weeks Bay Reserve has fostered long-term, consistent support of volunteers that augment the reserve's staff and significantly contribute to the mission of the reserve. As the reserve continues to backfill positions and expand its staff, reserve staff members are eager to work with the South Alabama Land Trust to continue to support and strengthen the volunteer program.

### *Science to Outreach and Management*

The reserve is a recognized leader in resilience, and the efforts across all of the reserve's sectors are supporting this work. Reserve staff engage with local residents and decision makers to communicate scientific findings and provide critical support for informed implementation of on-the-ground action. The evaluation team heard repeatedly that the reserve staff members partner with, participate in, support, and bring extensive knowledge to projects, resulting in action that makes communities and habitat more resilient. For example,

- The Coastal Training Program and education program staff members have been champions of sea level rise and climate change information for the Alabama coastal community and the Gulf region. They serve on advisory committees that contribute to regional resilience and adaptation efforts including [Gulf TREE](#), [Resilience to Future Flooding](#), and [Resilience in SLR Education \(RISE\)](#). As partners for the Gulf TREE project, staff members were considered a critical part of

shaping the process all the way through training delivery, resulting in a resource that minimizes “tool overwhelm” by connecting coastal decision makers to adaptation tools that meet their specific needs. The reserve staff members helped to guide and implement the Resilience to Flooding and RISE projects, ensuring that content was relevant to participants and that delivery was engaging.

- As discussed previously, stewardship program staff members work on acquiring land and implementing living shorelines is intended to mitigate storm damage by using these natural resources as a buffer. Additional benefits of this work are habitat protection, recreation, and water quality improvement. The lessons learned from these efforts are being applied to new projects.
- The research and monitoring program has been looking at hurricanes and fire as important factors in opening up habitat and providing space for marsh migration as sea levels rise. Fire regimes at the reserve are being adjusted to follow the findings of this work.
- The Coastal Training Program staff members worked with Alabama Coastal Management staff members to develop the Community Resilience Initiative, a CZMA Section 309 funded project, to improve floodplain management in Alabama communities, which led to a number of resilience accomplishment in coastal Alabama:
  - Semmes, Alabama, joined the National Flood Insurance Program.
  - Foley, Alabama, joined the Federal Emergency Management Agency’s Community Rating System.
  - The South Alabama Flood Engagement Team (SAFE-T) emerged.
  - Training on fortified building standards and elevation certificates.
  - The reserve partnered with the University of South Alabama’s GIS department to develop open space maps for 25 municipalities and two counties. Additional reserve staff members engaged in this project, including the GIS coordinator, who assisted with open space mapping training and provided technical assistance to the University of South Alabama.
- The reserve values working with and hosting research fellows. The reserve sponsored a Hollings Scholar to research the impacts of overwater structures on benthic productivity. This work is a priority research topic for the reserve, which will support the Alabama Coastal Area Management Program’s current 309 strategy to inventory existing structures and develop recommendations for construction. During the evaluation period, the reserve also sponsored a Margaret A. Davidson fellow who investigated how different environmental factors affect eutrophication around Weeks Bay. She also developed hands-on science and art activities to teach students about her research.
- The staff is forward-thinking and willing to consider how climate change will impact land management at the reserve. They have engaged with the Program for Local Adaptation to Climate Effects (PLACE): SLR to utilize the Resist Adapt Direct (RAD) framework to think about adaptation strategies. The staff is currently incorporating the strategies identified through this process into their management plan, and they use the framework to justify not only how they plan to address climate impacts but also why this is important.
- Reserve partners regularly turn to and rely on the reserve for their science-informed outreach expertise. For example, the reserve’s stewardship staff members provided a field trip opportunity for the Gulf of Mexico Alliance’s Business Advisory Council to acquaint them with

and increase their understanding of the value of the reserve's stewardship activities. Council members visited living shoreline installations and learned how they serve to stabilize shorelines and protect communities from storm surge and flooding. As a result of the field trip, the alliance saw an increase in living shoreline funding coming from private partners.

**Accomplishment:** The Weeks Bay Reserve is a recognized leader in resilience with collaborative efforts across the reserve's sectors supporting this work. The reserve's integration of land management, research, and outreach resulting in science for decision-making, combined with staff members' engagement with local residents and decision makers, has provided critical support for on-the-ground action in coastal Alabama. The evaluation team heard repeatedly that the reserve staff members partner, participate, support, and bring extensive knowledge to projects, resulting in action that makes communities and habitat more resilient.

### *Partners in Education for Connection and Change*

The reserve fosters its strong network of partners, and these partnerships have amplified the success of the reserve across its sectors, including education. These partnerships in adult learning and education have led to innovative mechanisms to engage stakeholders, and in many cases are resulting in behavior change in communities. Here are just a few of the examples the evaluation team heard during the site visit:

- As mentioned in the previous section, after the Gulf of Mexico Alliance's Business Advisory Council members were able to see for themselves during a field trip led by reserve staff how living shorelines stabilize shorelines and minimize impacts from storm surge and flooding, the alliance noted that private partner funding for living shorelines increased.
- The reserve partnered with a local art center to engage underserved audiences through art education programming. The education coordinator worked with art center staff to develop a program focusing on the use of touch and smell for citizens who are visually or hearing impaired. One participant who was visually impaired explored the three dimensional model of the Weeks Bay watershed in the Visitor Center through touch and was able to locate his home and the connection with the watershed.
- Partnering with Baldwin County schools, the reserve provided a dune grass planting workshop. A student who participated as a freshman returned four years later to the site and was excited to share that there were now sand dunes that had not been present at the time of the planting. That student felt a sense of ownership and clearly values the experience.
- In its work to provide professional development for teachers, the reserve conducts Teachers on the Estuary (TOTE) workshops covering various topics and related activities that teachers can easily incorporate into their curriculum. Since including marine debris as a module for TOTE, there has been a decrease of single-use plastics in schools. Schools are installing water bottle filling stations and distributing reusable bottles and decreasing the use of straws and Styrofoam trays.

**Accomplishment:** The Weeks Bay Reserve has been successful in partnering with local and regional organizations to provide learning experiences that reach a variety of audiences, including previously underserved populations. These reserve-led experiences connect people to their watersheds and estuaries and result in tangible behavior change in communities, including increased financial

support for resilience activities like living shoreline installation and decreases in single-use plastics. Collective behavior changes such as these can enhance community resilience.



## Evaluation Metrics, 2012-2017

Three performance measures and targets were selected by Weeks Bay Reserve staff to track during the five-year period of 2012-2017 as part of the NOAA 312 program evaluation process. These were selected from the Weeks Bay National Estuarine Research Reserve Management Plan 2007-2012. The metrics were approved May 18, 2012.

### ***Metric 1 – Education Sector***

**Goal:** Protect and improve habitat and biological diversity within the boundary of the reserve.

**Objective:** By 2017, develop and implement comprehensive education and interpretation programs to increase knowledge of target audiences to protect and improve habitat and biological diversity within the boundary of the reserve.

**Strategy:** The Reserve Education Plan calls for the implementation of comprehensive K-12 education and interpretation programs to strengthen student understanding, appreciation and stewardship of estuaries and associated coastal habitats in an effort to protect and improve habitat and biological diversity within the boundary of the reserve.

**Performance Measure:** Number of K-12 education programs held annually at the reserve that focus on the value and conservation of estuaries.

**Target:** 25 K-12 education programs held annually at the reserve focus on the value and conservation of estuaries.

**Results:**

- Year 1 (2012–2013) = 40 education programs
- Year 2 (2013–2014) = 47 education programs
- Year 3 (2014–2015) = 37 education programs
- Year 4 (2015–2016) = 30 education programs
- Year 5 (2016–2017) = 32 education programs
- Total** = 186
- Average per year** = 37

**Discussion:** The reserve exceeded its target every year. The reserve’s education partners who bring students to the reserve and who host programs at the site offer consistent praise of the quality of the programs and the expertise and knowledge of the reserve staff members providing the programs. The reserve education and stewardship staff work together to deliver programs.

### ***Metric 2 – Training Sector***

**Goal:** Improve decisions affecting estuarine and coastal resources.

**Objective:** By 2017, use the training and outreach center (Resource Center) for the capacity building of coastal resource managers in an effort to improve decisions affecting estuarine and coastal resources.

**Strategy:** The Reserve Education Plan calls for the implementation of comprehensive coastal training programs to utilize the Resource Center in building capacity for coastal resource managers and

strengthen understanding, appreciation, and stewardship of estuaries, coastal habitats, and associated watersheds to improve decisions affecting estuarine and coastal resources.

**Performance Measure:** Number of Coastal Training Program (CTP) workshops held annually targeting coastal resource managers and local decision makers and use reserve-specific research to support best management decisions to protect coastal estuaries.

**Target:** 5 CTP workshops at the reserve held annually target coastal resource managers and local decision makers and use reserve-specific research to support best management decisions to protect coastal estuaries.

**Results:**

- Year 1 (2012–2013) = 9 CTP workshops
- Year 2 (2013–2014) = 11 CTP workshops
- Year 3 (2014–2015) = 5 CTP workshops
- Year 4 (2015–2016) = 10 CTP workshops
- Year 5 (2016–2017) = 10 CTP workshops

**Total** = 45  
**Average per year** = 9

**Discussion:** The reserve met or exceeded its target every year. The recently retired Coastal Training Program coordinator is a natural connector and fostered valued relationships with partners and local stakeholders. This contributed to his understanding of their needs, and he hosted trainings that consistently met those needs.

During the evaluation period (October 2015 to July 2022), over 99% of the participants who completed the evaluation survey reported that the training was a good use of their time, and 85% reported that they learned something they intend to apply in their work or in future decision-making.

### ***Metric 3 – Research Sector***

**Goal:** Promote education, stewardship, and scientific research focusing on estuarine ecosystems.

**Objective:** By 2017, provide resources, support, and background data to facilitate independent research projects within the reserve and adjacent associated waters.

**Strategy:** The reserve will support and facilitate independent research projects of external researchers in the Weeks Bay Reserve boundary, the Weeks Bay watershed, and the Weeks Bay Coastal Area. Resources provided by the reserve include laboratories, lodging, and field sites. Support and facilitation mean providing background data, logistical support including access to reserve boats, and reserve staff time.

**Performance Measure:** Number of reserve-supported research projects initiated annually at the reserve that investigate the dynamics and function of estuaries.

**Target:** Three reserve-supported research projects initiated annually at the reserve that investigate the dynamics and function of estuaries.

**Results:**

- Year 1 (2012–2013) = 3 reserve-supported research projects
- Year 2 (2013–2014) = 6 reserve-supported research projects

Year 3 (2014–2015) = 5 reserve-supported research projects  
Year 4 (2015–2016) = 4 reserve-supported research projects  
Year 5 (2016–2017) = 2 reserve-supported research projects  
**Total** = 20  
**Average per year** = 4

**Discussion:** The reserve successfully met or exceeded its target for 4 of the 5 years for annually initiated research projects that focus on the dynamics and functions of estuaries.

## Evaluation Metrics, 2017-2022

Approved June 28, 2019. The goals and objectives are from the 2017-2022 Weeks Bay Reserve Management Plan.

### ***Metric 1 – Education Sector***

**Goal:** Protect and improve ecosystem health and biological diversity within the boundary of the reserve.

**Objective:** Audience awareness of ecosystem health and biological diversity issues at the reserve increases through implementation and development of education programs.

**Strategy:** The Reserve Education Plan calls for the implementation of comprehensive K-12 education and interpretation programs to strengthen student understanding, appreciation, and stewardship of estuaries and associated coastal habitats in an effort to protect and improve ecosystem health and biological diversity within the boundary of the reserve. This will be accomplished by incorporating new technologies to enhance K-12 and Professional Teacher Development Programs, continuing to employ an aide and volunteers to assist with educational programs throughout the year, and providing opportunities for the reserve education staff to attend professional development programs and trainings. The reserve’s long-time education coordinator retired in 2016 and a new staff member with fewer hours was hired, which resulted in a dip in the number of students contacted in 2017. The reserve is now working to build back its education program.

**Performance Measure:** From 2017-2022, the number of P-12 students reached by the reserve.

**Target:** From 2017-2022, 3,750 P-12 students reached at the reserve.

**Results:**

- Year 1 (2017–2018) = 1,038 students
- Year 2 (2018–2019) = 909 students
- Year 3 (2019–2020) = 298 students
- Year 4 (2020–2021) = 1,547 students
- Year 5 (2021–2022) = 1,165 students
- Total** = 4,957 students
- Average per year** = 991 students

**Discussion:** With the onset of the COVID-19 pandemic in March of 2020, the reserve developed several live, virtually delivered education experiences to be able to continue to engage students. The reserve has exceeded its five-year target by the end of the first four years.

It should be noted that there was decreased staff support for the education program during the fifth year because the education coordinator was also serving as the interim reserve manager. She has been officially hired as the manager and continues to fulfill the duties of the education coordinator because that position has not yet been filled.

### ***Metric 2 – Training Sector***

**Goal:** Promote education, training, stewardship, and scientific research focusing on estuarine ecosystems.

**Objective:** All training events and materials will meet the needs of coastal decision makers.

**Strategy:** The reserve Coastal Training Program will utilize the Weeks Bay Resource Center and other facilities as appropriate to run training events that address management needs of the reserve and build capacity of coastal resource managers in an effort to improve decisions affecting estuarine and coastal resources. The reserve Coastal Training Plan calls for the implementation of comprehensive coastal training programs to utilize the Resource Center in building capacity for coastal resource managers and strengthen understanding, appreciation, and stewardship of estuaries, coastal habitats, and associated watersheds to improve decisions affecting estuarine and coastal resources. The Coastal Training Program will continue to cultivate training partnerships, maintain the CTP Advisory Committee, make its best effort to maintain the Regional Training Program website, and participate in local, regional, and national conferences related to priority issues. Target audiences often include coastal resource managers and local decision makers and use current, science-based information including data from reserve-specific research to support best management decisions to protect coastal estuaries.

**Performance Measure:** From 2017-2022, the number of Coastal Training Program events held by the reserve.

**Target:** From 2017-2022, 49 Coastal Training Program events held by the reserve.

**Results:**

- Year 1 (2017–2018) = 17 Coastal Training Program events
- Year 2 (2018–2019) = 16 Coastal Training Program events
- Year 3 (2019–2020) = 11 Coastal Training Program events
- Year 4 (2020–2021) = 15 Coastal Training Program events
- Year 5 (2021–2022) = 9 Coastal Training Program events

**Total** = 68  
**Average per year** = 14

**Discussion:** To date, the reserve has exceeded its target by 37%. During the evaluation period (October 2015 to July 2022), over 99% of the participants who completed the evaluation survey reported that the training was a good use of their time, and 85% reported that they learned something they intend to apply in their work or in future decision-making.

An additional note is that the Coastal Training Program coordinator retired about three-quarters of the way through the fifth year, resulting in the reserve relying on partners to fill in to deliver events that had been previously planned prior to the coordinator leaving. It is anticipated that the Coastal Training Program coordinator position will be filled in the near future.

### ***Metric 3 – Research Sector***

**Goal:** Promote education, training, stewardship, and scientific research focusing on estuarine ecosystems.

**Objective:** Independent researchers receive resources, support, and data for projects within the reserve and associated areas.

**Strategy:** The reserve will support and facilitate independent research projects of independent researchers in the Weeks Bay Reserve, the Weeks Bay watershed, and the Weeks Bay Coastal Area. Resources provided by the reserve include laboratories, lodging, and field sites. Support and facilitation mean providing background data, logistical support including access to reserve boats, and reserve staff time. The reserve will continue its efforts to provide these resources as appropriate to support research projects in the Weeks Bay Coastal Area. The target is set lower than performance over the previous five years because the reserve is primarily a facilitator of research and does not have direct control of the number of research projects carried out at the reserve.

Research performance measures are measured by calendar year, not cooperative agreement cycles.

**Performance Measure:** From 2018-2022 (measured in calendar years), the number of research projects being carried out within the reserve that investigate the dynamics and function of estuaries.

**Target:** From 2018-2022 (measured in calendar years), 15 research projects being carried out within the reserve that investigate the dynamics and function of estuaries.

**Results:**

- Year 1 (2018) = 11 research projects
- Year 2 (2019) = 5 research projects
- Year 3 (2020) = 3 research projects
- Year 4 (2021) = 2 research projects
- Year 5 (2022) = 3 research projects

**Total = 24**

**Discussion:** By the end of the second year, the reserve exceeded its target. Year 1 captured ongoing prior projects, while Years 2-5 only counted new projects. With the expertise and support of the research and monitoring program staff and facilities, such as the expanded capacity of the research dormitory, the reserve continues to successfully attract researchers and foster collaboration.

## Conclusion

For the reasons stated herein, I find that the Alabama Department of Conservation and Natural Resources is adhering to the programmatic requirements of the Coastal Zone Management Act and its implementing regulations in the operation of its approved Weeks Bay National Estuarine Research Reserve.

These evaluation findings contain two recommendations that must be considered before the next regularly scheduled program evaluation. Program recommendations that must be repeated in subsequent evaluations may be elevated to necessary actions.

This is a programmatic evaluation of the Weeks Bay 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.



2/7/2023

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Jeffrey L. Payne, Ph.D.  
Director  
NOAA Office for Coastal Management

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Date

## Appendix: Response to Written Comments

Seven written comments in the form of letters of support were received during the public comment period.

**L.G. Adams,**  
**former Weeks Bay Reserve Manager**

Mr. Adams provided comments in support of the work of the reserve staff, volunteers, partner organizations, and state agency. He acknowledged the challenges created by the pandemic and recognized the resilience, dedication, adaptability, perseverance, and hard work of reserve staff in meeting those challenges. He offered the following suggestions:

- Continue vital work on coastal conservation through land acquisition building on recent success
- Continue to strengthen partnerships in working together to meet local and regional needs
- Work closely with friends (SALT) and volunteer groups to best foster community support
- Continue to engage/utilize advisory groups and state agencies (State Lands Division) to support programs
- Fill manager position at reserve with full-time position to move on past interim appointment
- Fill vacant positions, i.e., Administrative Assistant, Maintenance Worker, Education Coordinator, Coastal Training Program Coordinator, and Volunteer Coordinator.
- Replace watershed signs as outreach within the community; signs worn out, hard to read.

Mr. Adams noted in the conclusion of his comments that only with a full staff does the reserve have the potential to best flourish and meet future opportunities for growth as well as challenges with strategic success.

**NOAA Office for Coastal Management Response:** The evaluation team thanks Mr. Adams for sharing his comments and observations from his perspective of having served as the reserve manager for 25 years. The evaluation findings highlight the reserve's success in land acquisition, fostering and maintaining partnerships, and engaging volunteers, as well as the staffing challenges the reserve has experienced during the evaluation period. Since the close of the evaluation period, the reserve has successfully filled four of the vacant positions Mr. Adams noted. The manager and the maintenance supervisor both started on August 1, 2022; the Administrative Assistant position start date was November 28, 2022, and the Coastal Training Program Coordinator started on January 16, 2023.

**Julian Walthall,** former president of the Baldwin County Master Gardeners program offered comments of support for the reserve staff and their work. Julian commented that the reserve staff have been exceptionally helpful in providing the use of the reserve facilities for several Master Gardener projects, including the two annual plant sales and their certification educational programs. Julian also noted the

value of the pitcher plant bog as a treasured educational excursion for the Master Gardener program members and friends, and also shared that the reserve brings great value in the training and education opportunities about the importance of coastal land and water in an area that is experiencing increasing development.

**NOAA Office for Coastal Management Response:** The evaluation team thanks Mr. Walthall for his comments, participation in the public meeting, and ongoing support of the reserve. The evaluation findings discuss the importance of partnerships with organizations including the Baldwin County Master Gardeners program and recognize the achievements of the training and education programs.

**Rick O'Connor**, Escambia County Extension Agent for Florida Sea Grant Escambia County, expressed his appreciation for the reserve's support of the Florida Master Naturalists visits to the reserve. Rick commented on his partnership with the reserve in working on invasive species issues and mangrove monitoring and their efforts to control the invasive species and educate people about potential new ones. He noted that the reserve staff is responsive, knowledgeable, and a friendly team to work with.

**NOAA Office for Coastal Management Response:** The evaluation team thanks Mr. O'Connor for his comments and for Florida Sea Grant Escambia County's ongoing partnership with the reserve and support of its work. The evaluation findings highlight the progress the reserve has made in working to control invasive species and the importance of the reserve's role in providing education about invasive species.

**Allison Fletcher**, Lehrter Lab Manager, Dauphin Island Sea Lab, provided comments of support for the reserve staff members and the role they have in stimulating and facilitating marine science research. After attending a microplastics workshop at Weeks Bay Reserve when she was a master's student, she was inspired to study how microplastics can act as a vector for heavy metals in marine systems. Her research showed that significant concentrations of numerous heavy metals do transfer from sediments and adsorb into microplastics. Ms. Fletcher commented that the reserve's participation in and support of other programs like the NOAA Margaret A. Davidson Fellowship and the Alabama Coastal Cleanup are crucial to understand and protect Weeks Bay and other estuaries like it.

**NOAA Office for Coastal Management Response:** The evaluation team thanks Ms. Fletcher for her comments regarding the role the reserve had in her choice of course of study for her master's degree, as well as the experience her friend has had as a Margaret A. Davidson fellow at the reserve. The findings highlight the importance of results of studies that contribute to deepening the understanding of impacts to Weeks Bay and the region.

**Randy Roach**, former Weeks Bay Advisory Committee member, commends the Weeks Bay Reserve for providing an outstanding asset to the Gulf Coast region. Mr. Roach acknowledges the reserve's progress in protecting habitats adjacent to the reserve and in controlling invasive plant and animal species like tallow trees and feral hogs, as well the reserve's successful prescribed fire program. He recommended



additional management emphasis for the pitcher plant bog to ensure a burn frequency of at least every two years. Mr. Roach raised additional concerns about an increase in boat traffic and its connection to the erosion of habitat and loss of eelgrass along the Fish and Magnolia Rivers. He notes that although the no-wake zones implemented for safety may be a sensitive issue, they have benefited the ecosystem. To address the low dissolved oxygen and high bacterial counts in the dead end canals on the west side of the Fish River, he suggests the use of oil spill funding to eliminate the dead ends by filling and restoring them to improve habitat for fish, birds, and mammals. Mr. Roach looks forward to continued work with the reserve.

**NOAA Office for Coastal Management Response:** The evaluation team thanks Mr. Roach for his comments and concurs that the reserve's prescribed fire program and the work in controlling invasive species represent great progress in restoration of the reserve's ecosystems. The Marsh Restoration in Fish River, Weeks Bay, Oyster Bay, and Meadows Tract project work Mr. Roach referenced is being implemented by NOAA in partnership with the state of Alabama according to the RESTORE Act Funding Priorities List 1. More information is available on this fact sheet. The success of the stewardship work has been highlighted in the evaluation findings, and Mr. Roach's suggestions for further restoration work have been shared with the reserve for consideration.

**Chris Verlinde**, Florida Sea Grant Extension, commented that she has had the opportunity to work with the reserve for over 20 years and feels the reserve research, coastal program, and education staff do a great job maintaining the mission of the reserve. She emphasized the importance of their regional reach and impact and notes that she is included in all program announcements, surveys, and general information about the reserve and the National Estuarine Research Reserve System. Ms. Verlinde expressed the importance of the reserve to Florida Sea Grant's Florida Master Naturalist Team, which holds the field modules at the reserve. She commented that the Florida Master Naturalist team brings class participants to the reserve because it serves as a wonderful place to learn about wetland and coastal systems, as well as the maintenance involved in conservation of these areas. The Master Naturalist participants often make return visits to the reserve with their friends and family. Ms. Verlinde looks forward to working with the reserve staff in the years to come.

**NOAA Office for Coastal Management Response:** The evaluation team thanks Ms. Verlinde for her comments and ongoing partnership with the reserve. The evaluation findings highlight the success of such partnerships and the work of the Coastal Training Program.

**Debbie Quinn**, Chair, Weeks Bay National Estuarine Research Reserve Advisory Committee, offered comments that acknowledge the shifts in the reserve and foundation staff and the challenges of change. Ms. Quinn expressed that the pace of the state's hiring process and approving funding for facilities maintenance is a challenge. She shared that Mike Shelton, the former Coastal Training Program coordinator, had crucial relationships with county and city entities as well as deep institutional knowledge of the reserve due to his long tenure. She expressed concern that with his retirement, the reserve has lost that knowledge and those relationships and what that may mean about the reserve's ability to address issues such as changes in storm water regulations. Ms. Quinn stated that she feels the

reserve ought to direct the conversation with the county government about changes in stormwater regulations.

**NOAA Office for Coastal Management Response:** The evaluation team thanks Ms. Quinn for her comments and concurs that Mike Shelton's retirement is a loss to the reserve and the region. The evaluation findings discuss the importance of maintaining institutional knowledge and relationships as well as acknowledge concerns about the pace of the state's hiring process. The reserve anticipates continuing to provide technical assistance and education in support of state and county governments in their efforts to address stormwater management.