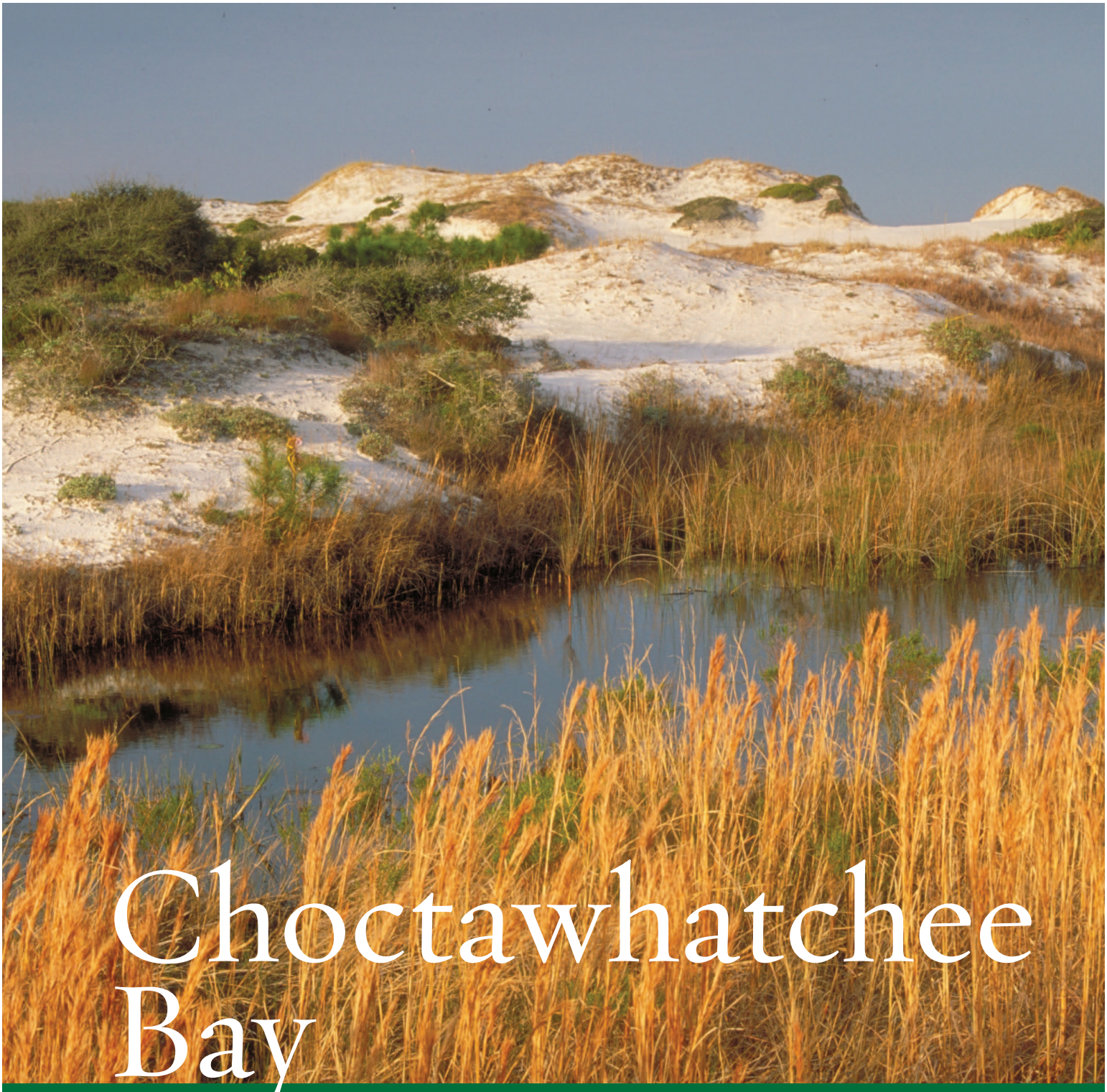

Choctawhatchee Bay

Community-Based Watershed Plan

The Nature Conservancy in Florida

December 2014

The Nature Conservancy

Protecting nature. Preserving life.™

The Nature Conservancy would like to thank all of the stakeholders from local, state and federal governments, NGOs, community groups and citizens who devoted their time, resources and support for this watershed planning process. Your desire and commitment to come together in the spirit of building a watershed community that will achieve more together than individually has created a solid foundation and legacy of collaboration and conservation for the Gulf. In particular, we would like to recognize the leadership demonstrated by the county governments in the Panhandle and Springs Coast to invest in a process that reaches across political and organizational boundaries and focuses on improving and protecting the watersheds today and for future generations.

Table of Contents

Executive Summary

The Deepwater Horizon Oil Spill has focused attention on opportunities to restore and enhance Gulf Coast ecosystems and communities. In Florida, funding opportunities associated with civil and criminal settlements of the Deepwater Horizon Spill provide an opportunity to address direct damage from the spill as well as long-standing water quality, habitat and coastal resilience restoration needs. A healthy environment is the foundation of healthy economies and communities. The Nature Conservancy (TNC) believes that identifying restoration needs and projects by watershed in collaboration with diverse community stakeholders is essential for achieving comprehensive and long-term success for Gulf Restoration.

In 2013 TNC initiated a facilitated community-based watershed planning process along Florida's Gulf Coast for the following six watersheds: Perdido Bay, Pensacola Bay, Choctawhatchee Bay, St Andrew and St Joe Bays, Apalachicola to St. Marks, and the Springs Coast. The Perdido, Pensacola and Choctawhatchee Bay watersheds also involved Alabama stakeholders. Similar planning efforts in the remaining Florida gulf coast areas have been led by other partners.

The community-based watershed planning provides a process for making thoughtful science-based decisions that help to both to assess already proposed projects and identify new projects that help solve recognized and documented problems in the watershed. Such a process involves understanding the priority issues facing each watershed (threats), the root causes creating each issue, and the major actions needed to address the root causes (solutions). Specifically, the process was designed to:

- **Develop watershed-based plans that identify the most pressing environmental issues affecting each watershed and solutions that address the issues, regardless of political jurisdiction and funding source.** Ideally, the plans will be 'living' documents used by all stakeholders to identify priority projects for funding that specifically address solutions to the identified issues and their root causes, documenting results to measure success, and updated as needed to help inform future activities needed to address watershed issues. The project list is designed to provide maximum flexibility for grouping projects to meet specific funding opportunity requirements and can be used to pursue project funding for RESTORE and non-RESTORE related funding programs (e.g., grants, Public Private Partnerships, etc.). The current project list is not comprehensive and further stakeholder input is needed to identify solutions necessary to resolve the watershed issues.

- **Create long term partnerships among stakeholders in each watershed and across the regions to maximize effectiveness of project implementation and funding efforts.** The stakeholders in each of the six watershed regions have voiced their desire to continue the coordination and outreach among diverse partners that this watershed planning process has supported and enhanced.
- **Provide a screening tool to evaluate the project priorities of these watershed plans for potential RESTORE funding by the communities, Florida Department of Environmental Protection (FDEP), Florida Fish and Wildlife Conservation Commission (FWC), National Fish and Wildlife Foundation (NFWF) and the Gulf Coast Restoration Council.** The project list can be used to pursue project funding for RESTORE and non-RESTORE related grants programs by clearly documenting the need for the projects in the context of how they will address solutions to critical watershed issues.

This first edition of the Choctawhatchee Bay community-based watershed plan documents the results of the watershed planning process to date - the priority issues, root causes, major actions and initial set of priority projects - identified by the Choctawhatchee Bay watershed stakeholders. The next steps are to identify additional projects to fill in gaps identified during the September 10, 2014 watershed meeting, refine the project maps as needed to more clearly define geographic extent of the projects (polygons rather than points), develop a science based selection process that prioritizes the projects proposed through this watershed process, and create a stakeholder organizational structure that will serve to continue the watershed planning and implementation work.

Introduction

As a result of the Deepwater Horizon oil spill, potentially billions of dollars will be coming to Gulf of Mexico communities for environmental and economic restoration. These funds will be coming through various pathways – Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast Act (RESTORE), National Fish and Wildlife Foundation's (NFWF) Gulf Environmental Benefit Fund (GEBF), and the Natural Resource Damage Assessment (NRDA). Each of these pathways has its own particular process, goals and objectives. A brief overview of each is provided in Appendix A-Deepwater Horizon Related Funding Opportunities.

In 2013 Florida opened an online portal to receive project suggestions based on their stated priorities and, to date, has received over 1,200 suggested projects totaling over $16 billion worth of work. As this was occurring, TNC and partners recognized the need for a thoughtful and strategic decision-making process to help assess existing and future projects in the context of addressing issues that are negatively impacting the environmental integrity of the landscape. In southwest Florida this context is being provided by the three National Estuary Programs (NEPs) in that area. In the Big Bend area, the process is being led by the Suwanee River Water Management District and partners. In the Panhandle and Springs Coast, this context is being provided by the Community Based Watershed Planning process facilitated by TNC. The process involves understanding the priority issues facing each watershed, the root causes creating each issue, and the major actions needed to address the root causes (solutions).

One of the core principles in the watershed planning process is that, although the Deepwater Horizon related funding was the spark for community discussions and information sharing, the priorities and projects identified through the process can be funded by non-Deepwater Horizon related sources as well. In addition, there is a need for integration and coordination between projects and funding sources to maximize the effectiveness and results of Gulf investments. This is recognized during public meetings at every level of government regarding the implementation of RESTORE and the other Gulf related funding opportunities. By harnessing all applicable funding sources and applying them to the most appropriate project, each community will maximize the number of projects that can be completed and, therefore, make the most progress in improving and protecting the long-term health of their watershed.

The community-based watershed process has been designed and adapted to facilitate communication among the diverse stakeholders. The process identifies a priority suite of projects necessary to improve and maintain the health of Gulf watersheds and matches priority projects with the most appropriate funding source(s). In addition to the Deepwater Horizon related

funding sources detailed in Appendix A, there are numerous other funding opportunities that could and should be leveraged as the Gulf of Mexico watersheds are restored that include, but are not limited to:

- Federal/State Grants – stormwater projects, habitat creation and restoration, land acquisition, etc.
- Public Private Partnerships (P3) – public infrastructure projects that include cost recovery mechanisms (e.g., sewer projects)
- Wetland mitigation opportunities
- Private foundations and contributors

The Choctawhatchee Bay Community Based Watershed Plan documents the planning process, the initial set of priority projects, and next steps for the Choctawhatchee Bay Watershed.

Planning Process

The Nature Conservancy organized and facilitated "watershed discussions" for the Choctawhatchee Bay watershed with a variety of diverse community stakeholders that included federal, state and local governments, Non-Governmental Organizations (NGOs) and interested businesses, community groups and citizens. Several meetings were held during the development of this plan and the meeting dates and participants can be found in Appendix B–Stakeholder Participants.

The motivation for the community watershed planning is to help ensure a healthy and protected natural environment that supports a vibrant economy and community. The key objectives of this process are to:

- **Develop watershed-based plans that identify the most pressing environmental issues affecting each watershed and solutions that address the issues, regardless of political jurisdiction and funding source.** Ideally, the plans will be 'living' documents used by all stakeholders to identify priority projects for funding that specifically address solutions to the identified issues and their root causes, documenting results to measure success, and updated as needed to help inform future activities needed to address watershed issues. The project list is designed to provide maximum flexibility for grouping projects to meet specific funding opportunity requirements and can be used to pursue project funding for RESTORE and non-RESTORE related funding programs (e.g., grants, Public Private Partnerships, etc.). The current project list is not comprehensive and further stakeholder input is needed to identify solutions necessary to resolve the watershed issues.

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- **Provide a screening tool to evaluate the project priorities of these watershed plans for potential RESTORE funding by the communities, Florida Department of Environmental Protection (FDEP), Florida Fish and Wildlife Conservation Commission (FWC), National Fish and Wildlife Foundation (NFWF) and the Gulf Coast Restoration Council.** The project list can be used to pursue project funding for RESTORE and non-RESTORE related grants programs by clearly documenting the need for the projects in the context of how they will address solutions to critical watershed issues.

The Choctawhatchee Bay Community Based Watershed Plan was developed using the following process. The process is ongoing and future steps are detailed in the Recommended Next Steps section. This process was not meant to duplicate the state's process for soliciting project ideas via their online portal. Rather it is specifically tailored to address the needs of the watershed as identified by the stakeholders during the community meetings facilitated by TNC.

- Convene key stakeholders and determine the boundary of the watershed for the purposes of this planning effort. The boundary identified by the stakeholders for the Choctawhatchee Bay is the same boundary identified in the Northwest Florida Water Management District's Surface Water Improvement and Management (SWIM) Plan. This watershed extends into the State of Alabama but stakeholders from Alabama have not yet been part of the planning process. We recognize that representation from Alabama needs to be included as this watershed process continues.
- Discuss stakeholders' vision for the watershed.
- Identify the priority issues that must be addressed, the root causes of the priority issues, and the major actions necessary to implement solutions for the root causes.
- Develop a suite of priority projects that will help resolve identified issues and root causes. TNC developed an online form to solicit projects from stakeholders. Stakeholders were also asked to identify performance metrics that can be applied to monitor and track success of the project, once implemented, as well as changes in the overall health of the watershed (e.g., improved water quality, increase in seagrass habitat, etc.).

- Identify remaining needs and new projects to address gaps that are not addressed by the current proposed projects.
- Integrate results of the plans into the stakeholder's processes implemented by their respective affiliations, i.e., RESTORE processes, County comprehensive plan implementation, NGO restoration plans.

Meetings for the Choctawhatchee Bay watershed began in April 2013 and continued through September 2014. After each meeting, meeting notes were distributed to all participating stakeholders (Appendix C–Stakeholder Meetings Notes). The notes and comments received were used to develop this draft plan. This plan represents the first edition of the Choctawhatchee Bay Community-based Watershed Plan. The plan will be updated as future meetings are conducted and to recognize progress on implementation of solutions.

1) Identifying Priority Issues, Root Causes, and Major Actions:

The first step in the watershed planning process was to hear stakeholder perspectives on what they envisioned for their watershed's future. To do so, the following question was e-mailed to stakeholders prior to the first meeting held for the Choctawhatchee Bay watershed. It was also provided on slips of paper to be filled out during the meeting:

In a sentence, of just a word or few, what is your Vision for the Choctawhatchee Bay Watershed's future (land / river / estuary / Gulf)? What do you hope it looks like in 10, 20, or 50 years and beyond?

During the meeting held on August 13, 2013, TNC facilitated a short brainstorming session was facilitated as an introduction for everyone to hear and understand each other's thoughts and viewpoints on their vision for the Choctawhatchee Bay watershed. A vision statement was not developed; this can be done at a later date as part of creating a long term organizational structure to manage the implementation of this plan.

The following are the unedited comments that were presented on paper and during the brainstorming and have been grouped by common themes:

- **Healthy habitats and resources**
  - Seagrasses healthy and spreading
  - Edible oysters
  - Protect habitat/wildlife in the estuary, rivers and uplands
  - Sustained biotic and abiotic resources
  - Alive and productive

- Lots of fish – redfish and trout
- Clear record of the health of the Bay – Report Card
- Oyster harvest in Choctawhatchee Bay
- Seagrass beds steadily spreading
- Healthy upland habitat
- Abundant marine life
- Healthy, productive, and sustainable (watershed) community for now and future generations.
- Choctawhatchee Bay and its natural resources need to continue support ecologically and economically the two counties. It needs to continue to provide a higher quality of life to all residents.
- Need for comprehensive, regional projects that have a broad scope of improving water quality, restoring damaged habitats, and protecting sensitive areas in the future.

- **Clean Water**
  - Swimmable waters
  - Restore/protect water quality
  - Improved stormwater/water quality, without a significant long-term maintenance tail (i.e. future costs obligated to maintain the improvements). A vibrant economy!
  - ability to enjoy the gulf for recreation
  - One word – Better! Vision is that water quality will be much better in the future, compared to the present.
  - Implement land use policies that result in water quality that meets our multiple-use concept
- **Educated and active community**
  - Youth and generations on the importance of protecting natural resources
  - Active network of partners
  - Realization that the majority of the watershed is in Alabama
  - Open communication across jurisdictions
  - Plan for who does what
  - Communication and education to everyone in the watershed about the watershed's value and connection to their quality of life
  - Implement goals and objectives, in addition to the plan.

The next step was to start identifying the Priority Issues, Root Causes, Major Actions facing the Choctawhatchee Bay Watershed. Appendix D–Watershed Overview and General Issues contains a general description of the Choctawhatchee Bay Watershed, a map of the watershed, and the high level issues it faces. The following are the terms and definitions used for the watershed planning process:

- Priority Issues: main themes of problems that were universal across the watersheds and need to be addressed
- Root Cause: source(s) of the priority issues
- Major Action: essential activity(ies) that needs to be accomplished to address the root causes of the priority issues.

During this portion of the process there was much discussion and numerous issues, root causes and major actions were identified. For purposes of facilitating the discussion, it was explicitly recognized that there is considerable overlap and inter-relationships between issues, root causes and major actions. As such, there is no one correct way to categorize them and the groupings that were made were done in order to present the information in a logical fashion. The following list is the high level groupings for the Priority Issues and Major Actions. For a complete listing of these, and their relationships with the Root Causes, please see Appendix E–Stakeholder Identified Priority Issues, Root Causes, Major Actions and Project Types.

The Priority Issues identified by the watershed stakeholders, each having one or more root cause, are:

- Water Quality
- Natural Resource Protection and Management
- Education and Outreach
- Coastal Community Resilience

The Major Actions identified by the watershed stakeholders are:

- Protect, restore, create and/or manage natural habitat and resources and increase buffer areas
- Increase cooperation and coordination for management, monitoring, funding, implementation, outreach, enforcement
- Reduce impacts to groundwater and ensure adequate fresh water availability
- Reduce and treat stormwater

- Reduce nutrient loading
- Reduce sedimentation
- Increase economic diversification

2) Project Identification and Performance Measurement

The next step in the process was to begin to identify the priority projects that would initiate the implementation of major actions needed to address the identified root causes and priority issues. The process of identifying priority projects involves understanding and documenting how a project relates to identified root causes and priority issues. To aid in the prioritization of projects, each proposed project should include specific performance metrics that identify the expected results and quantify, if feasible, how those results relate to and address a root cause(s) and priority issue(s) identified in the watershed. Documented results will help inform future decision making and prioritization activities by tracking actual versus predicted results. These results will help inform communities and decision makers in the selection of future projects that show the most promise for return on investment based on desired outcomes.

Both short and long-term metrics must be identified to effectively monitor and evaluate the impact from implemented projects on the critical watershed issues they were designed to address. Short-term metrics focus on monitoring the success and effectiveness of the individual project efforts at addressing root causes (e.g., for a sediment stabilization project, what percent of the project area was successfully stabilized). Long-term metrics will focus on the impact of those projects on the priority watershed issues (e.g., return of stream channels, increase in water clarity/quality, increase in seagrass coverage, improved fish landings, etc.) It should be noted that direct correlations between specific projects and improvement in a priority issue or issues may sometimes not be possible, particularly when several projects need to be implemented to adequately address a priority issue. However, these longer-term measures are important since they track the ultimate results the community and funders are seeking to achieve. Including effective metrics will also facilitate adaptive management as the predicted versus actual results can be evaluated to ensure implemented projects are achieving expected outcomes.

In order to be methodical and ensure that the highest priority projects were submitted, the following process was used:

- In advance of the watershed meeting, stakeholders were asked to submit their top three priority projects using an online form developed by TNC specifically for this watershed planning process.
  - Each project submission included fields which tied the project to identified root causes and major actions, and
  - Each project submitter was asked to include specific performance measures that could be used to evaluate the success of the project itself as well as success of the project on addressing a root cause(s) and priority issue(s).
- Jean-Paul Calixte with the Natural Resources Conservation Service partnered with TNC to develop a GIS-based map showing a point location of each project (Figure 1). The project locations were identified using latitude and longitude coordinates provided by the stakeholder proposing a project. It is important to note that many projects are not adequately represented by a single point since they span larger geographic areas and, in some cases, multiple projects within a proposed project. Future work on the watershed planning should strive to create accurate boundaries of each project represented by polygons on the map. The map was distributed to all stakeholders prior to the September 12, 2014 meeting of the Choctawhatchee Bay stakeholders.
- At the watershed meeting, attendees broke out into groups to review the maps and spreadsheet of the proposed projects, to identify geographic and project type gaps, and to reconcile any questions on project locations. The attendees reconvened into one group and reported on their break out group findings regarding project gaps and next steps (Appendix C–Meeting Notes dated Sept. 12, 2014).

Twenty-three projects totaling 29 different actions were submitted during the first round of project nominations (Appendix F–Project Table). Projects ranged from single focus projects such as stabilizing dirt roads, to multiple projects designed to restore a sub-basin within the watershed. The following is a breakdown of suggested projects by major action:

- Protect, restore, create and/or manage natural habitat and resources and increase buffer areas – 10
- Increase cooperation and coordination for management, monitoring, funding, implementation, outreach, enforcement – 10
- Reduce impacts to groundwater and ensure adequate fresh water availability
- Reduce and treat stormwater – 4
- Reduce nutrient loading – 2
- Reduce sedimentation – 3

Note that the above grouping is by Major Action, but numerous proposed projects would have positive impact on more than one Major Action.

One of the key principles behind the watershed planning effort is to develop the suite of projects necessary to improve the health of the watershed and protect it for future generations, regardless of potential funding sources. Once a comprehensive set of projects has been identified for each watershed, the projects can then be grouped, separated, and/or phased as necessary to apply for relevant funding sources. Potential funding sources include RESTORE, NFWF's Gulf Environmental Benefit Fund and other NFWF grants, federal and state grants (e.g., EPA 319, FEMA, NRCS, Florida Wildlife Legacy Initiative, and others). The project list will be refined as additional watershed meetings are held.

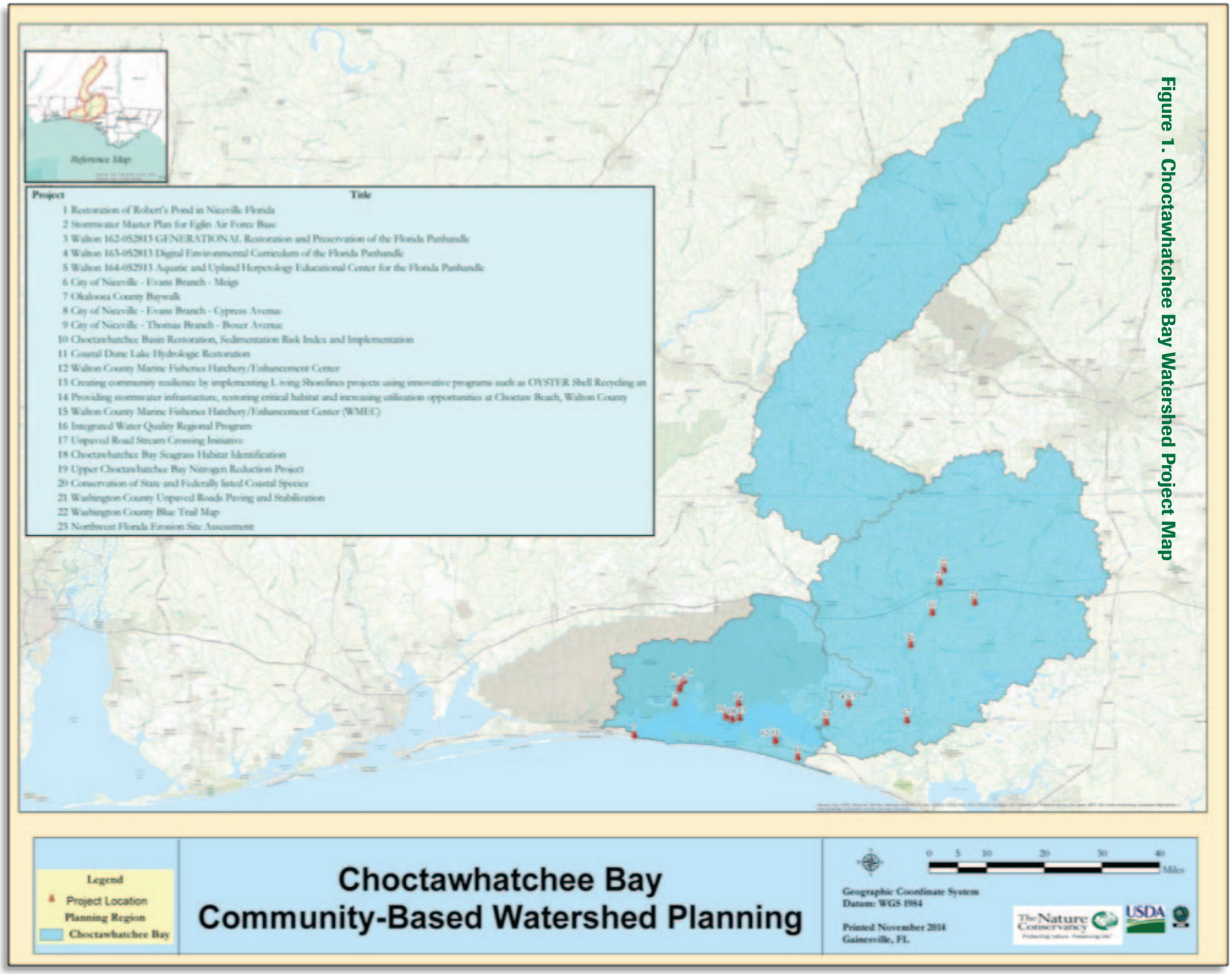


Figure 1. Choctawhatchee Bay Watershed Project Map

Current Status and Recommended Next Steps

As discussed above, the stakeholders have identified the priority issues facing the watershed, their understanding of the root causes creating those issues, major actions needed to address the root causes, and have begun to identify the projects necessary to implement the major actions. In addition, TNC has been working with the stakeholders in the Perdido and Pensacola Bay watersheds to pilot the Resource Investment Optimization System (RIOS) to evaluate the model's usefulness to helping with the identification and priority setting for watershed projects. The RIOS model is being used to conduct spatial analysis to provide a science-based framework for spatially identifying what types of projects are best positioned to address multiple activities to help solve the issues of concern in the Perdido Bay and Pensacola Bay watersheds. RIOS, designed to support this type of stakeholder process, provides a planning tool to prioritize watershed and coastal projects by identifying where land protection, restoration, or improved management activities are likely to yield the greatest benefits for people and nature. RIOS is a free and open source software tool managed by the Natural Capital Project (NatCap), and co-developed by NatCap, TNC, World Wildlife Fund and the University of Minnesota. RIOS will help answer two core questions:

1. What set of investments (which activities, and where) will give the greatest returns towards multiple objectives?
2. How much improvement in objectives can we expect from making the set of investments identified through a scientific analysis?

Applying RIOS to the Perdido and Pensacola Bay watersheds as a pilot project will provide a demonstration for how the RIOS planning tool might support a stakeholder process for developing watershed plans in other Gulf coast counties and watershed groups across Florida and beyond to help inform priorities related to future RESTORE funds, NFWF funds, or other opportunities. These pilot projects will also test and refine the new RIOS coastal module to support integrated watershed and coastal planning processes for multiple benefits.

1) TNC Recommendations

In order to complete the planning process TNC recommends the following actions:

- Northwest Florida Water Management District updates the Choctawhatchee River and Bay SWIM plan (2002) to ensure all priority issues are identified and addressed. This action is dependent on funding received to update the SWIM plans. If updates are not

funded then this watershed planning process will continue to use the existing SWIM plan until such time that updates are conducted.

- In addition, a focus was placed on identifying 'priority action areas' ("hot spots") that, if prioritized and restored, would make the most difference in restoring the watershed.
- Complete the identification of priority projects by conducting a technical review of the current list of watershed projects and a "gaps" analysis to determine where and what type of projects are still needed to address the issues and root causes of each watershed.
- Develop a science-based project prioritization process that uses the best available science to help make decisions on those projects that best address the issues.
- Create a long-term organizational structure (i.e., estuary program) in each watershed to continue the watershed planning effort.
- Pursue funding for the projects by matching each project and/or group of projects to potential funding sources (e.g., RESTORE, federal/state grants, public private partnerships, etc.).

2) The Path Forward

The following two proposals were submitted in November, 2014 in response to the initial round of RESTORE Council-Selected Restoration Component (Bucket 2) funding. If funded, these projects will significantly advance the watershed planning effort.

- Florida's Northwest Florida Estuaries and Watersheds – This project will advance the watershed planning process by continuing the stakeholder outreach, updating the Choctawhatchee and other Panhandle SWIM Plans, funding the design and permitting of priority project(s) in each estuary, implementation of priority project(s), and monitoring project success.
- EPA's Gulf of Mexico Estuary Program – This project will provide funding to create Estuary Programs for up to 12 estuaries in the Gulf of Mexico. All five Florida Panhandle watersheds (Perdido, Pensacola, Choctawhatchee, St Andrew/St Joe and Apalachicola to St Marks) are included in the proposal. This proposal would satisfy the last objectives of the watershed planning process stated above by creating the long term partnerships in each watershed via the creation of Estuary Programs.

Together, these proposals would create and support an effective, and much requested and needed, science and community-based process for long term restoration and management of the Gulf's remarkable natural resources and coastal communities.

In addition to supporting the selection of these two proposals by the Gulf Coast Ecosystem Restoration Council, TNC will be conducting the following to continue the watershed planning process:

- Convene additional watershed meetings to identify gaps where additional science or project identification is needed to address an identified issue.
- Develop a science-based prioritization process for the projects identified by the stakeholders and detailed in each first edition of the watershed plans.
- Work with the EPA to convene a workshop for the watershed stakeholders and representatives from Florida's Gulf Coast and Mobile Bay National Estuary Programs to facilitate the discussion on creating estuary programs in each of the panhandle and Springs Coast watersheds and learn about the various organizational structures of existing NEPs and lessons learned.
- Present the results from the Resource Investment and Optimization System (RIOS) decision-support tool analyses to the watershed stakeholder groups. The results of the analyses will help to further evaluate the relative benefits and costs of the projects identified in the watershed planning process. This tool might then be used to advance project identification and implementation decisions in the other watersheds and regions in the Gulf.

Appendix A

Deepwater Horizon Related Funding Opportunities

RESTORE Act (Clean Water Act Fines) Allowed Uses of Funding:

http://www.treasury.gov/services/restore-act/Documents/Final-Restore-Act.pdf

- Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.
- Mitigation of damage to fish, wildlife, and natural resources.
- Implementation of a federally approved marine, coastal, or comprehensive conservation management plan, including fisheries monitoring.
- Workforce development and job creation.
- Improvements to or on State parks located in coastal areas affected by the Deepwater Horizon oil spill.
- Infrastructure projects benefitting the economy or ecological resources, including port infrastructure.
- Coastal flood protection and related infrastructure.
- Planning assistance.
- Administrative costs of complying with the above

The RESTORE funds are divided into five components:

1. "Bucket 1" 35% of RESTORE funds divided equally among the five states. In Florida, these funds are allocated directly to, and will be spent by, the 23 Gulf of Mexico coastal counties.
2. "Bucket 2" 30% of RESTORE funds competitively awarded by the Gulf Coast Ecosystem Restoration Council for Gulf restoration projects. In Florida, the Governor decides which projects to nominate for consideration by the Restoration Council.
3. "Bucket 3" 30% of RESTORE funds allocated by formula to fund implementation of State Expenditure Plans (SEP). In Florida, the 23 Gulf Coastal Counties formed the Gulf Consortium to draft the SEP which the Governor reviews and submits to the Council for approval.
4. "Bucket 4" 2.5% NOAA Science Program (for Gulf of Mexico research and monitoring)
5. "Bucket 5" 2.5% State Centers of Excellence (for Gulf of Mexico research and monitoring)

NFWF GEBF (Criminal Penalties) Criteria:

http://www.nfwf.org/gulf/Pages/fundingpriorities.aspx#.U6GfxPldWt4 and http://www.nfwf.org/gulf/Pages/GEBF-Florida.aspx

- Restore and maintain the ecological functions of landscape-scale coastal habitats, including barrier islands, beaches and coastal marshes, and ensure their viability and resilience against existing and future threats
- Restore and maintain the ecological integrity of priority coastal bays and estuaries
- Replenish and protect living resources including oysters, red snapper and other reef fish, Gulf Coast bird populations, sea turtles and marine mammals
- Natural resource restoration efforts on marine and coastal environments that improve water quality and other critical habitat elements, strengthen management of important fish and wildlife populations, and enhance the resiliency of coastal resources and communities by implementing outcomes-based projects that maximize environmental benefits

Natural Resource Damage Assessment (Environmental and loss of use payment):

http://www.dep.state.fl.us/deepwaterhorizon/about_restoration.htm

- The Oil Pollution Act of 1990 (OPA) makes parties responsible for oil spills liable to the public and the environment. The environment and the public have a right to be made whole again following an injury to natural resources from an oil spill incident. Natural Resource Damage Assessment (NRDA) is a legal process to determine the type and amount of restoration needed to compensate the public for harm to natural resources and their human uses that occur as a result of an oil spill incident or a hazardous substance release. Natural resources include land, air, water, fish, wildlife, biota, groundwater and drinking water supplies. Natural resources also include habitats and individual biological resources such as species or communities.

State of Florida Priorities:

http://www.dep.state.fl.us/deepwaterhorizon/projects_restore_act.htm

The State of Florida and its 23 Gulf Coastal Counties have a great deal of decision-making power for a significant amount of RESTORE funds. In order to provide focus for project recommendations, Florida identified the following priorities for RESTORE Act-funded projects:

- Stormwater / Wastewater infrastructure projects
- Community resilience / Living shorelines
- Water quality projects including those which achieve water quality benefits provided by the preservation of buffer lands around military bases
- Implementation of agriculture best management practices, or
- Fish and wildlife habitat and management

Appendix B

Stakeholder Participants

Choctawhatchee Bay Community-Based Watershed Meetings

Stakeholders who attended one or more of the following Choctawhatchee Bay watershed meetings
April 1, 2013, May 2, 2013, August 13, 2013, September 12, 2014
Note: Affiliations reflect those notes at the time of attendance and may have since changed.

ORGANIZATION	NAME
Aquatic Ecosystem Solutions	Carter Henne
Bream Fishermen Association/Panhandle Watershed Alliance	Barbara Albrecht
Choctawhatchee Basin Alliance	Alison McDowell
Choctawhatchee Riverkeeper	Michael Mullen
Choctawhatchee, Pea and Yellow Rivers Watershed Management Authority	Barbara Gibson
Citizen	Kathleen Reed
City of Destin	David Campbell
City of Freeport	Janet McLean
City of Niceville	Cleve Dryden
City of Niceville	Randy Lane
Earth Ethics Inc.	Mary Gutierrez
Eglin Air Force Base	Bruce Hagadorn
Eglin Air Force Base	Ed O'Connell
Eglin Air Force Base	John Oliveros
Eglin Air Force Base	Russell Brown
Eglin Air Force Base	Tom Heffernan
FL Department of Environmental Protection	Brad Hartshorn
FL Department of Environmental Protection	Kendra Parson
FL Department of Environmental Protection	Sally Mann
FL Department of Environmental Protection - Coastal & Aquatic Managed Areas	Jessica L. Kanes
FL Department of Health	Shaun C. May
FL Fish and Wildlife Conservation Commission	Jessica Graham
FL Fish and Wildlife Conservation Commission	Maria Merrill
Florida Division of Forestry	Mike (John) Mathis
Matrix Design Group	Graham Thompson
Mattie Kelly Environmental Institute, Northwest Florida State College	Paul Wilson

National Wildlife Federation	Jessica Koelsch
National Wildlife Federation	Madison Walker
Nokuse Education, Inc/E.O. Wilson Biophilia Center	Christy Scally
Northwest Florida State College	Julie Terrell
Northwest Florida Water Management District	John B. Crowe, Jr.
Okaloosa County	Anthony Austermann
Okaloosa County	Dave Parisot
Okaloosa County	Jeff Littrell
Okaloosa County	Jim Trifilio
Okaloosa County	John Hofstad
Okaloosa County	Ken Little
Okaloosa County	Nancy Hussong
Okaloosa County	Scott Henson
Okaloosa County Tourist Development Council	Ed Schroeder
Preble-Rish, Inc.	Cliff Knauer
Sea and Shoreline	Carter Henne
Taylor Engineering	Duncan Greer
The Nature Conservancy-FL	Anne Birch
The Nature Conservancy-FL	Janet Bowman
Trinity Analysis & Development Corp.	Alec Macbeth
U.S. Army Corps of Engineers	Clif Payne
U.S. Army Corps of Engineers	Ed Sarfert
US Fish and Wildlife Service	Channing St. Aubin
USDA/Natural Resource Conservation Service-FL	Jeff Norville
USFWS/Jackson Guard, Eglin AFB	Bill Tate
Walton County	Billy McKee
Walton County	Sara Comander
Walton County	Melinda Gates
Walton County	Melinda Wickham
Walton County Taxpayers Association	J. B. Hillard
Washington County	Michael DeRuntz
Willson Consulting	George Willson

Appendix C

Stakeholder Meetings Notes

Choctawhatchee Bay Community-based Watershed Planning Meeting

September 12, 2014 9:00-12:00 noon Central

DeFuniak Springs Courthouse, Commission Board Room (located behind the courthouse)

571 E Nelson Ave/US HWY 90, DeFuniak Springs, FL

Hosted by Walton County and Facilitated by The Nature Conservancy

AGENDA

Watershed Plan Objective: Create a unified holistic vision for the watersheds by collectively identifying and prioritizing a suite of projects and actions that solve the most pressing environmental issues affecting these watersheds and the Gulf, irrespective of the funding source or political jurisdiction.

Meeting Objective: Review projects needed to address watershed plan issues in the Choctawhatchee Bay watersheds

Times are flexible to provide more time for discussion, as needed.

Time	Topic	Objectives
10:00-10:45 Anne Birch	o Welcome/Introductions	o Greetings and overview on meeting agenda, progress to date and process to finalize plans.
10:45-12:30 Jean-Paul Calixte, NRCS & Anne Birch	o Review responses to priority projects in the Choctawhatchee Bay Watershed o PowerPoint and Map on wall o Discussion	o Review projects identified by all stakeholders who submitted pre-meeting information. o Identify potential gaps based on Root Causes o Opportunities for project consolidation
12:30-1:15 LUNCH		
1:15-2:15 Anne Birch	o Projects assessment & prioritization	o ·Root Causes and Metrics discussion
2:15 - 2:45 Anne Birch	o Moving Forward	o Review next steps in watershed planning o Q&A
2:45-3:00	o Public Comment / Adjourn	

Choctawhatchee Bay Community-based Watershed Planning Meeting

September 12, 2014 9:00-12:00 noon Central

DeFuniak Springs Courthouse, Commission Board Room (located behind the courthouse)

571 E Nelson Ave/US HWY 90, DeFuniak Springs, FL

Hosted by Walton County and Facilitated by The Nature Conservancy

MEETING NOTES

This was a meeting of the Choctawhatchee Bay Community-Based Watershed planning process facilitated by The Nature Conservancy (TNC) and attended by 32 stakeholders. Thank you to Walton County for their assistance with the meeting logistics. The meeting objective was to review the proposed projects stakeholders submitted to TNC's online form specifically for this phase of the watershed planning process (not RESTORE) and identify gaps in projects, look for opportunities for project consolidation, and discuss a project prioritization process. The proposed projects were to address the watershed's issues and root causes identified by the stakeholders during past meetings.

Anne Birch provided a PowerPoint that described the watershed planning process and status to date and reviewed the agenda for the meeting. She reviewed the maps created by Jean-Paul Calixte Natural Resource Conservation Service, showing the locations of the proposed projects submitted. The attendees broke out into groups to review the maps and spreadsheet of the proposed projects to identify geographic and project type gaps and reconcile any questions on project locations. The attendees reconvened into one group and reported on their break out group findings. The following are notes from the break out groups and follow-up discussion with the full group. The meeting attendees are listed on the last page of these notes.

The following are the notes from the meeting's discussions.

Corrections/Edits:

- Move #11 into the Bay to location identified on map
- The following projects were included in the Choctawhatchee Bay spreadsheet/map in error and will be transferred to the Apalachicola-St Marks spreadsheet and map.
  - #10 - Saltmarsh, Oyster, and Waterbird Habitat Enhancement (FL)
  - #17 - St. Joe Timberland
  - #19 - Box R Ranch
  - #21 - Hydrological Restoration of Riparian Habitats within the Southern Portion of the Apalachicola River Watershed

- Project #'s 21, 22 & 23 will not have a lat/long since there is not a particular point location for these.

Gaps identified:

- Identify all borrow pits in Walton County
- Unpaved road crossings
- Include all areas of the watershed, including inland counties
- Sediment assessment – risk index to prioritize top issues
  - Assessments are complete for the Chipola, Upper Choc. (USFWS), Yellow and Shoal Rivers and all stream crossing at Eglin Air Force Base
  - Assessments for the Escambia & Perdido Rivers are being proposed by USFWS
  - Lower Choc River – proposed for funding from NFWF?
  - Development in low-lying areas is a root cause of sedimentation
- Retrofit failing stormwater systems
- Identify all borrow pits in Walton County
- Identify all unpaved road crossings and prioritize for repair/stabilization

Discussion Notes:

- A Master Plan for the watershed is needed
- Endorsement by the counties and Eglin Air Force Base (AFB) may add weight and credibility to proposed projects
- Future project identification provide a 'region-wide' option in addition to lat/long locations
- Encourage counties to work with the state agencies for support of projects

Stakeholders Missing from the Group

Please send suggestion of stakeholder groups that may have an interest in attending future meetings to Anne Birch at abirch@tnc.org.

Choctawhatchee Bay Community-based Watershed Planning Meeting

August 13, 2013 9:00-12:00 noon Central

DeFuniak Springs Courthouse, Commission Board Room (located behind the courthouse)

571 E Nelson Ave/US HWY 90, DeFuniak Springs, FL

Hosted by Walton County and Facilitated by The Nature Conservancy

AGENDA

Meeting Objective: Create a unified holistic vision for the Choctawhatchee Bay watershed by collectively identifying and prioritizing a suite of actions and projects that solve the most pressing environmental issues affecting the watershed and the Gulf, irrespective of the funding source or political jurisdiction.

Goals for the meeting products:

- Gulf Consortium adopts the watershed approach as part of the state's RESTORE expenditure plan, rolling up this and other watershed plans to be a critical element of the state plan
- Stakeholders continue to collaborate within and across jurisdictions to implement the plan, seeking funding from RESTORE as well as public and private grants and other sources
- Stakeholders establish internal agency/organization priorities consistent with the plan

Draft Agenda

9:00-9:30

- Welcome and introductions
- Overview of the meeting goals and agenda
- Vision ideas for the watershed

9:30-10:15

- Review the watershed impacts from the first meeting and agree on a list of impacts that must be addressed and use the list to help filter proposed projects (see page 2 for issue identified during the May 2 meeting).
- Identify the root causes of each impact in order to develop projects that fix the source of the problem(s).
- Identify the types/categories of projects according to root cause that will be used to filter proposed projects.

10:15-10:30

- Develop ideas for metrics that can be used to monitor success for each category
  - short term - such as number of homes hooked up to sewer, miles of dirt roads stabilized
  - long term - such as specific water quality improvements

10:30-11:15

- Review the existing projects in the watershed that have already been submitted to FDEP and identify applicable project category(s).

11:15-11:45

- Identify additional projects and/or needs that will help solve the agreed on watershed impacts.

11:45-12:00

Public Comment

Wrap-up and next steps

Issues identified during the May 2, 2013 Choctawhatchee Bay Watershed Meeting

- Sedimentation
- Wastewater
- Stormwater
- Species and habitat decline (especially listed species such as Okaloosa Darter)
- Agriculture runoff
- Impaired streams
- Saltwater intrusion
- DoD mission obstacles
- Need for pollution/water quality monitoring
- Invasive species
- Others?

Choctawhatchee Bay Community-based Watershed Planning Meeting

August 13, 2013 9:00-12:00 noon Central

DeFuniak Springs Courthouse, Commission Board Room (located behind the courthouse)

571 E Nelson Ave/US HWY 90, DeFuniak Springs, FL

Hosted by Walton County and Facilitated by The Nature Conservancy

MEETING NOTES

The following are notes from the "Round 2" Choctawhatchee Bay watershed meeting.

VISION BRAINSTORMING

A short brainstorming session was held as a way for everyone to hear and understand each other's thoughts and viewpoints on their vision for the Choctawhatchee Bay watershed. A vision statement was not developed; this can be done at a later date. The following question was emailed to stakeholders prior to the meeting and provided on slips of paper to be filled out during the meeting: In a sentence, of just a word or few, what is your Vision for the Choctawhatchee Bay Watershed's future (land>river> estuary> Gulf)? What do you hope it looks like in 10, 20, or 50 years and beyond?

The following are the ideas presented during the brainstorming.

- Seagrasses healthy and spreading
- Edible oysters
- Sustained biotic and abiotic resources
- Swimmable waters
- Clean water
- Educate youth and generations on the importance of protecting natural resources
- Alive and productive
- Lots of fish – redfish and trout
- Clear record of the health of the Bay – Report Card
- Active partner network
- Realize that the majority of the watershed is in Alabama
- Open communication across jurisdictions
- Protect habitat/wildlife in the estuary, rivers and uplands

- Schematic of who does what
- Communication to everyone in the watershed about the watershed's value and connection to their quality of life
- Restore/protect water quality
- Implement goals and objectives, not just plan

The following are the ideas that were presented on the slips of paper and are written verbatim as provided.

- Improved stormwater/water quality, without a significant long-term maintenance tail (i.e. future costs obligated to maintain the improvements). A VIBRANT ECONOMY!!
- Oyster harvest in Choctawhatchee Bay
- Seagrass beds steadily spreading
- HEALTHY UPLAND HABITAT
- ability to enjoy the gulf for recreation
- have abundant marine life
- Choctawhatchee Bay and its natural resources need to continue support ecologically and economically the two counties. It needs to continue to provide quality of life to all residents.
- Implement land use policies that result in water quality that meets our multiple-use concept.
- comprehensive, regional projects that have a broad scope of improving water quality, restoring damaged habitats, and protecting sensitive areas in the future.
- To have a healthy, productive, and sustainable (watershed) community for now and future generations.
- One word – Better! Vision is that water quality will be much better in the future, compared to the present.

WATERSHED ISSUES

Watershed issues were identified using the issues identified in previous watershed meetings. The group prioritized the issues, identifying the top six (listed in no order of importance) and used these to start to evaluate the current list of FDEP RESTORE proposed projects and additional projects proposed but not yet on the list. The root causes of each of the top 6 issues were then identified and these are noted under each.

Top 6 impacts to the watershed and 'root causes of each impact (listed in no particular order)

Impaired streams

- Root Causes
  - Sedimentation
  - Lack buffering
  - Poorly performing septic tanks
  - Poor design and maintenance
  - Modification i.e., channelization
  - Untreated stormwater
  - Air pollution i.e. mercury

Sedimentation

- Root Causes
  - Land mgt
  - Unpaved roads
  - Old field side gullies
  - Borrow pits
  - Power line ROW
  - Silviculture practices
  - Restrictions natural water flow e.g, causeway

Wastewater incl. industrial

- Root Causes
  - Septic tanks
  - Lack of treatment iduc. And by=products

Stormwater

- Root Causes
  - Infrastructure retrofits needed – direct runoff into streets
  - Destruction natural shoreline buffers
  - Channelization/ditches practices
  - Lack maintenance exist structure

Land/water/air space Protection

- Root Causes
  - Urbanization
  - Poor planning
  - Protection natural lands Eglin/DoD lands

Habitat/species degradation

- Root Causes
  - Poor planning
  - Sedimentation
  - Urbanization
  - Poor maintenance
  - Rigid armoring
  - Poor enforcement existing regs.
  - More education needed/lack appreciation/understanding indiv. Impacts connection to resources
  - Overharvesting (oysters)
  - Recreation impacts (seagrass)
  - Invasive species

Other Impacts/issues identified but lower in priority for the planning purposes of the meeting

- Agriculture runoff/Silviculture
- Saltwater intrusion
- DoD mission considerations/requirements/encroachments
- Pollution/water quality monitoring
- Invasive species
- Climate change
- Recreational use noise pollution
- Watershed Mgt Authority AL – communication through whole watershed
- Water supply

The remainder of the meeting was devoted to identifying which of the top 6 issues the projects addressed. The process was started by first sorting the projects by county and starting with Okaloosa, rather than those projects that were proposed by non-county organizations or that were more regional/gulf-wide in scope. The group assessed 17 of the FDEP proposed projects and each of the additional 10 projects proposed but not yet on the FDEP list.

Assess of the remainder of the projects was assigned as 'homework'. This will allow those who proposed the project but may not have been in the room to accurately assess their projects against the 6 issues.

Jeff Norville, Natural Resources Conservation Service, briefly spoke about the Watershed Technical Advisory Team (WATT) that has formed among several state and federal agencies. Their goal is to assist, as their capacity allows, in compiling GIS available data that can be used to help analyze and plan for watershed scale, regional projects, and identify project gaps. A helpful component in the analysis will be project locations identified on a map and he asked that project locations also be noted in the spreadsheet, if feasible.

Homework

- Identify the project issues that the projects that your entity has proposed on the list addresses. Highlight each issue in yellow. Note, the top rows of the spreadsheet are 'frozen' so that as you scroll down you are still able to see the project issues at the top.
- Add any additional description in the description cell to further explain how the project addresses the issues identified. Highlight any additions in red font so we can see the additions.
- Assess whether it makes sense to combine your project with any others. Don't combine them but rather note in the far right new column that I've added which project #'s (by Row #) you

recommend combining.

- Identify the project location by Lat/Long if at all possible – a column has been added to the spreadsheet to include this information.

Choctawhatchee Bay Community-based Watershed Meeting

May 2, 2013 9:00-1:00 Central

117 Montgomery Street, DeFuniak Springs, FL 32435

Hosted by Walton County and Facilitated by The Nature Conservancy

MEETING AGENDA

- Welcome and introductions – Sara Comander and Anne Birch
- Overview of the planning goal and process - Anne
- Watershed status and overview
- Brad Hartshorn, FDEP
- Paul Thorpe, NWFWMD projects
- Attendee's project ideas
- Discussion of how projects integrate with watershed needs
- Plan development process
- Next Steps

Note: There were no notes distributed after this meeting. See May 2, 2013 meeting agenda above for a brief summary of the issues identified during this meeting.

Choctawhatchee Bay Community-Based Watershed Meeting

April 1, 2013 9:00-2:00 Central

Emerald Coast Convention Center, 1250 Miracle Strip Pkwy SE, Fort Walton Beach, FL 32548

Hosted by Okaloosa County and Facilitated by The Nature Conservancy

MEETING AGENDA

Goal: Create the path forward to developing the Choctawhatchee watershed plan

Objectives:

- develop a common understanding regarding the status of the watershed (water quality and quantity issues and major impacts and key projects to include)
- creating a "strawman" watershed project map to facilitate discussion at the stakeholder meeting
- pick a date for the stakeholder meeting, its agenda, and roles

Agenda:

- Introductions
- Identify joint watersheds, basins, and other areas that are jointly shared and identify key issues / challenges for the watershed water quality/quantity
- Identify key projects that will address each issue/challenge
- Discuss watershed plan format (for ultimate submittal to DEP)
- Discuss stakeholder meeting (goal, roles, etc.), review invitee list and add to it if needed, and set stakeholder meeting date (coordinate with Com. Comander's office to confirm her availability
- Adjourn

Choctawhatchee Bay Community-Based Watershed Meeting

April 1, 2013 9:00-2:00 Central

Emerald Coast Convention Center, 1250 Miracle Strip Pkwy SE, Fort Walton Beach, FL 32548

Hosted by Okaloosa County and Facilitated by The Nature Conservancy

MEETING NOTES

Comm. Parisot opened the meeting with an overview of the efforts to date and provided a status update on the efforts of Okaloosa County (RESTORE Advisory Committee creation in progress and the County is going out for bid to hire a consultant to provide RESTORE planning assistance).

Walton County is still in the formative stages and has not assigned anyone as official point person yet.

Eglin will be an important part of the process as they are a very large landowner and have a critical part in the local economy. Some of Eglin's key issues are:

- Erosion (e.g., dirt roads)
- Okaloosa Darter
- Sturgeon
- Rocky Bayou septic
- Noise buffering
- Eliminate/reduce stressors on endangered species

Fish and Wildlife has a lot of good information that needs to be included that can help identify and prioritize projects such as their unpaved road survey

Everyone agreed that a watershed plan would be the best way to make the strongest case for Choctawhatchee Bay watershed projects. The watershed plan will be a "living document" that provides an overview of the watershed, identifies issues that need to be addressed and a list of projects that will address each issue. As more information comes to light and projects funded/completed, the plan will be revised to incorporate these updates.

- Path forward to develop the plan:
  - Map to be generated that shows watershed area to be included in the plan (Scott to send Draft to Darryl by April 15)
  - Darryl to send out draft plan outline for review and comment by group (included below)

- April 30 Draft Executive Summary sent out by Darryl for review and comment by group (this is the opportunity for each entity to submit projects to the group for inclusion in the overall plan)
- May 15 Primary project categories distributed to core group (draft below in draft outline please provide feedback)
- (Ongoing) Each member to engage their stakeholders to request potential projects
- June 15 project summaries done
- June 30 draft document complete

o Key items for plan development:

- Each County to hold public listening sessions to solicit feedback from their constituents
- Planning and science will be critical. Key resource will be state agencies (FDEP and Water Management District), Pat Barcus (Gulf Coast Marine Life Center)
- Use DEP format for writing plan and submitting projects.
- Need tangible and measurable results to document in the submitted proposal (see SMART Goals http://topachievement.com/smart.html)
- Restore act should be read by all. Located on the Okaloosa county website along with PowerPoint done by Comm. Parisot
- Projects should range from the beaches to the creeks

o Follow-up items:

- Need assessment of the intercostal waterway Walton and Bay counties. Is that a federally managed waterway-dredged. Needs shoreline stabilization.
- Need information on Millings for a pervious surface road (are there detrimental impacts such as contaminant leaching?)
- Suggest a meeting the 2nd or 3rd week in April to bring DEP and WMD in so each can provide the core group with their perspective on the status and needs for the Choctawhatchee Watershed and each of the core group can provide an overview of the projects identified to date and to provide an opportunity to course correct as needed. This would be a working meeting to ensure all are on the same page and making progress... thoughts?

Watershed Plan DRAFT Outline:

- Introduction - 1 - 2 page maximum to describe the partnership (vision, goals, partners/ stakeholders and process)
- Watershed Overview (very high level description that we can probably cut and paste out of existing reports). Would suggest a 1 - 2 page maximum to give the readers a general overview of the size/extent of the watershed and key features.
- Current Status
- Water Quantity (will need to coordinate and get input from WMD). Would suggest a 5 page maximum to describe the general water quantity status regarding stream/river flows and potable water supply. Goals are to:
- identify whether or not we are currently at sustainable water quantity flows in our aquatic systems (this will not be available for all systems but hopefully we can at least get some sense of conditions and projects that would help)
- have a sustainable potable water supply given current and projected supply/demand (and if not what can be done to reach sustainable supplies)
- Water Quality (will need to coordinate and get input from DEP). Would suggest a 5 page maximum to describe the overall health of the system. Goals are to:
- identify known impairments (and major impacts that are causing the impairments)
- other water quality issues that need to be addressed (and major impacts that are causing the issues)
- Sustainability (could include screenshots from Decision Support Tool identifying sea level rise issues) Coordinate with the counties' flood mitigation groups to identify critical shoreline erosion areas where living shorelines may provide an effective solution
- Plan - Identify the proposed projects and how they relate to either the water quality or quantity issues identified above. This section can be grouped by headings such as:
- Nutrients
  - Land protection (buffers/wetlands)
  - Living Shorelines
  - Stormwater for wet pond type systems that will provide nutrient removal)
  - septic tanks mitigation

- Sedimentation
  - Dirt Road / Gulley stabilization
  - Stormwater projects
- Water quantity / supply
  - Land protection (buffers/wetlands)
  - etc.
- Excel sheet with projects and estimated costs for analysis/grouping/summary (this can be linked to the GIS map)

Appendix D

Watershed Overview and General Issues

This Appendix is excerpts from the Florida Department of Environmental Protection's "Learn about your Watershed" website http://www.protectingourwater.org/watersheds/map/choctawhatchee_st_andrew/choctawhatchee/.

Figure 2 is a map of the Choctawhatchee River and Bay watershed from the Northwest Florida Water Management District's Surface Water Improvement and Management Plan (2002). Note that the watershed includes the Florida Counties of Okaloosa, Walton, Bay, Washington and Holmes and extends into Alabama. A copy of the SWIM Plan can be downloaded from this web link http://www.nwfwmd.state.fl.us/water-resources/swim/choctawhatchee/

The Choctawhatchee River and Bay watershed (including the Pea River drainage area) cover approximately 3.4 million acres, with approximately 42 percent located in Florida and the rest in Alabama. From the Florida-Alabama state line, the river flows south approximately 87 miles, with six counties providing runoff into the river before discharging into Choctawhatchee Bay. The river is alluvial, characterized by a broad floodplain, seasonal flooding, and a heavy sediment load. It receives significant quantities of water from the Floridan aquifer system and has both blackwater and spring-fed tributaries.

Holmes Creek is particularly significant to the region's biological diversity. The creek has the most diverse fish habitats and highest species richness in the Choctawhatchee River watershed; it supports several species of rare or imperiled fish, and the creek's spring discharge and water quality are important to maintaining critical habitat for the endangered Gulf sturgeon downstream.

The main stem of the Choctawhatchee River also supports several threatened and rare mussel species. Tributaries to the river support relatively high populations and diversity of aquatic plants, fish, and invertebrates. The Okaloosa darter, one of only two federally endangered fish species in Florida, occupies only six stream systems that empty into Choctawhatchee Bay via Boggy and Rocky Bayous. Other endangered or threatened species in the watershed include the Choctawhatchee beach mouse, green turtle, and loggerhead turtle.

A series of coastal dune lakes is located on Moreno Point, located primarily in Walton County. These lakes are a distinctive feature of the Florida Panhandle and are important to wildlife along this coastline.

Choctawhatchee Bay is an estuary characterized by the interaction, mixing, and circulation of fresh water and salt water. It has one direct opening to the Gulf of Mexico at East Pass, adjacent to the city of Destin, and joins with Santa Rosa Sound to the west and the Intracoastal Waterway to the east. The bay has a

number of bayous along its periphery. Tributary streams to the bayous, particularly those on the northern and western ends of the bay, provide additional fresh water.

Within the Florida portion of the watershed, most of the land cover consists of upland forest with significant wetland systems along the river and its tributaries. Agricultural land use is prominent in the northern portion of the watershed, particularly in Alabama. The population density in the watershed is low, but there are some concentrations of urban land uses, particularly in the vicinity of Choctawhatchee Bay.

Issues

While the Choctawhatchee River and Bay watershed continues to support outstanding resources, it has also experienced many of the impacts that are common to Florida estuaries. These include urban stormwater runoff and other nonpoint sources of pollution, widespread sedimentation, domestic and industrial wastewater discharges, and habitat loss and degradation. Cumulatively, these impacts have degraded the productivity of the river and bay system and diminished the benefits it provides.

Effective watershed management and planning can help to preserve and restore the natural resources and human benefits provided by the Choctawhatchee River and Bay system and limit the need for more expensive and difficult solutions in the future.

The combined population of Okaloosa, Holmes, and Washington Counties grew 23 percent over the last 10 years, according to the 2000 U.S. Census. Most of this growth is concentrated in coastal areas. Intense development accompanying this growth has resulted in an increase of polluted stormwater flowing into rivers and creeks, which degrades water quality and suffocates benthic communities. Much of the Pea River and Choctawhatchee drainage basins depend on septic systems for the treatment and disposal of domestic wastewater. This creates the potential for contamination from failed septic systems.

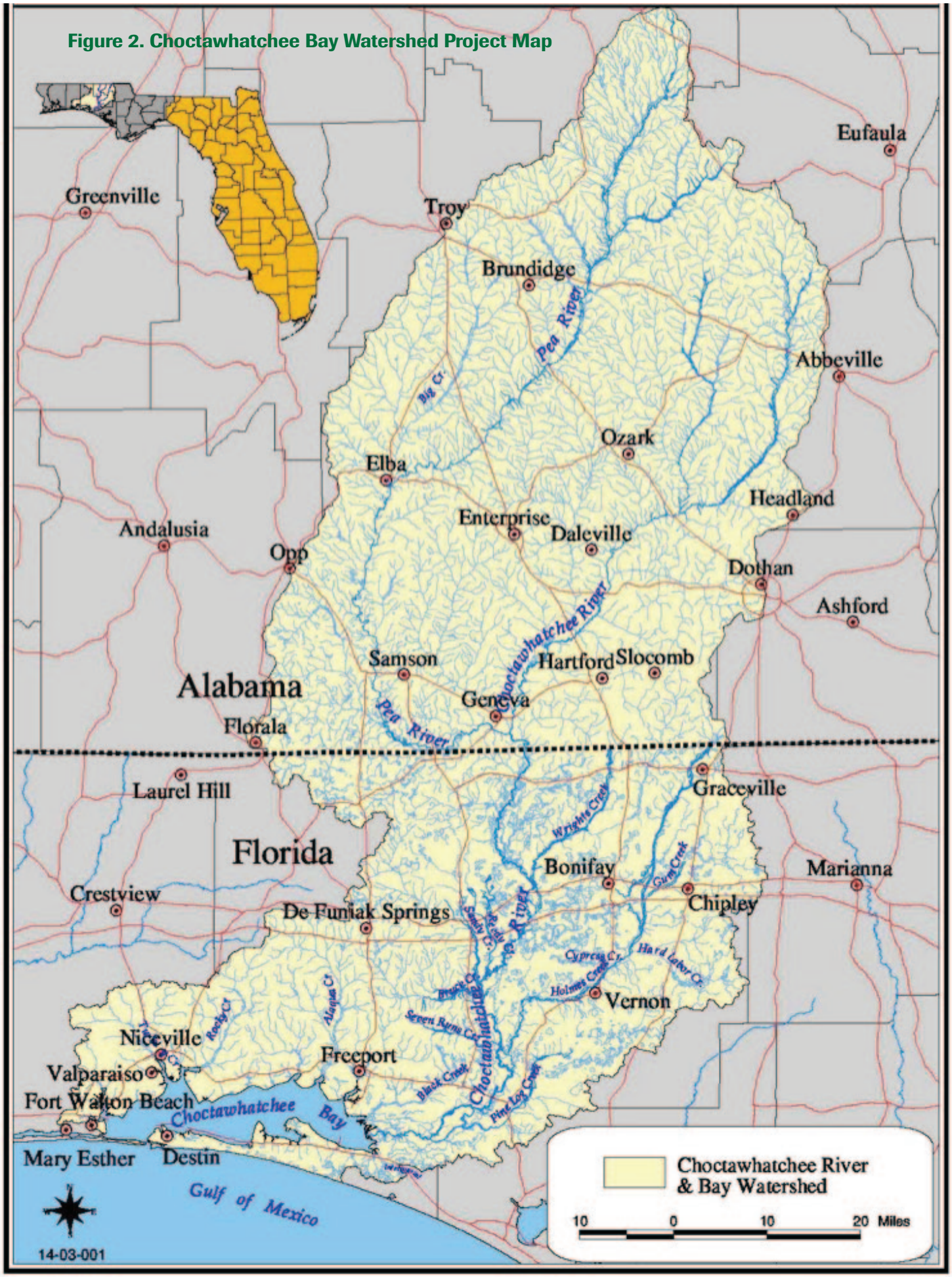
Erosion and sedimentation are major concerns in both the Alabama and Florida portions of the Choctawhatchee and Pea River watersheds, as well as in Choctawhatchee Bay. Sediment samples collected in Choctawhatchee Bay in 1994 showed contaminants such as polycyclic aromatic hydrocarbons, polychlorinated biphenyls, lead, and mercury. The highest levels of toxicity were found in Cinco, Garnier, Boggy, Tom's, Rocky, and LaGrange Bayous, as well as Destin Harbor.

In 1999, Choctawhatchee Bay exhibited symptoms of eutrophication, caused by relatively low flushing rates, warm water, algae growth, and significant and increasing nutrient loading. Unabated, eutrophication has profound implications in coastal systems, including nuisance algae blooms, depleted levels of dissolved oxygen (DO), fish kills, reduced water clarity, seagrass losses, degradation of other habitats, and diminished aesthetic and recreational values.

The loss of seagrass may also be caused by the changes in the range and variability of salinity that have occurred since the inlet at East Pass was created in 1926.

In 1999 and 2000, Choctawhatchee Bay experienced a persistent red tide, a plankton bloom that can discolor the water and release toxins that kill aquatic life and irritate human breathing. Many fish and approximately 49 dolphins were killed in the bay and nearby Gulf waters. Studies continue as to why red tide was so intense and persistent in the bay during that time. A decline in general water quality may be a factor.

Figure 2. Choctawhatchee Bay Watershed Project Map



Appendix E

Stakeholder Identified Priority Issues, Root Causes, Major Actions and Project Types

Priority Issues: 1. Water Quality 2. Natural Resource Protection, Restoration And Management 3. Education And Outreach 4. Coastal Community Resilience	
Major Actions (formerly called Issues. Revised to Major Action needed to address a priority issue)	**Root Causes to be addressed** The root causes were grouped into the bolded bullet headings. The root causes as stated during the stakeholder meetings are under these headings and have not been altered.
Reduce Sedimentation	Erosion o dirt roads o gullies o borrow Pits o power line ROW Ineffective or unused BMPs, regulations & development codes o silviculture o land management Loss of vegetation, riparian buffers, and/or wetlands (also a major action)
Reduce Nutrient Loading	Contamination o point sources in FL & AL Atmospheric deposition Domestic Wastewater o septic tank (leaks, improperly located, etc) o sewer systems (I&I, lift station failure) Loss of vegetation, riparian buffers, and/or wetlands (also major action)
Reduce and Treat Stormwater	Ineffective or unused BMPs, regulations & development codes o improperly designed systems o loss of permeable land and developed land not maximizing use of open/green space o lack of maintenance of stormwater systems (residential, commercial and industrial) o interconnections with sewer o no stormwater treatment o channelization/ditches Lack of adequate funding Loss of vegetation, riparian buffers, and/or wetlands (also major action)

Protect, Restore, Create and Manage natural resources and increase buffer areas	Lack of Adequate Funding o land management activities (e.g., invasive species and Rx fire) o restoration activities (land and water) o lack prescribed fire Ineffective or unused BMPs, regulations & development codes o lack of adequate LDRs/development codes o fragmentation of natural habitats leading to loss of corridors and connections/sprawl o lack of, inadequate or improper stream/creek crossing designs/construction o legacy seawalls placement/engineering controls o removal riparian vegetation o removal in-stream woody material o monoculture revegetation o changes in estuarine shoreline - transition of habitats o streamlined regulations o overharvesting of resources (e.g., oysters) o recreational impacts (prop scars) Contamination o increased sedimentation o increased nutrient loading
Reduce impacts to groundwater and ensure adequate fresh water availability	Note: this Major Action was identified during other watershed meetings and are inserted here as a placeholder in the event the Choctawhatchee stakeholders address this Major Action as they identify projects
Increase cooperation and coordination for management, monitoring, funding, implementation, outreach, enforcement	Note: this Major Action was identified during other watershed meetings and are inserted here as a placeholder in the event the Choctawhatchee stakeholders address this Major Action as they identify projects
Increase Economic Diversification	Note: this Major Action was identified during other watershed meetings and are inserted here as a placeholder in the event the Apalachicola to St Marks watershed stakeholders address this Major Action as they identify projects.

Appendix F

Watershed Project List

Note: Due to space limitations the following information provided by the stakeholders on their projects was omitted from the table.

- Alignment with Federal RESTORE Priorities
- Alignment with Federal RESTORE Objective
- Alignment with State RESTORE Priorities

A complete table of the information submitted for each project is available upon request to Anne Birch at abirch@tnc.org.

Project Map #	1
Latitude	30.5346
Longitude	-86.4677
Project Title	Restoration of Robert's Pond in Niceville Florida
Location Description	Eglin AFB/Niceville, FL Okaloosa County,
Project Description	Roberts Pond (aka College Pond) is a 20 acre recreational impoundment in Swift Creek on Eglin AFB. This project seeks to restore Swift Creek to reestablish habitat for the federally threatened Okaloosa darter. The large impoundment will be eliminated to reconstruct a stream channel and two smaller impoundments within the existing footprint of Roberts Pond. Stream reconstruction will be utilize natural channel design techniques and placement of instream features and other wood structures. The floodplain and pondbed will be stabilized with native vegetation. A boardwalk and interpretive trail will be constructed for public access, education, and enjoyment. The USFWS, FFWCC, and Eglin AFB have partnered on several stream restorations of this magnitude. This partnership is recognized as the regional experts in stream restoration and has led the way in developing restoration techniques specific to the streams in northwest Florida and Alabama. Removal of this impoundment will reestablish approximately one mile of stream habitat for the federally threatened Okaloosa darter and reconnect an additional 12 miles of stream within the Swift Creek system for colonization by Okaloosa darters, Addtionally, this project will restore hydrology, and improve water quality in the Swift Cr. system as well as the Choctawhatchee Bay.

	The restoration of Swift Creek has been identified as a very high priority recovery action for the Okaloosa darter. At present, Roberts Pond is an underutilized recreational impoundment for the city of Niceville and Eglin AFB. This stream restoration will include the creation of two ponds for recreational fishing and birdwatching as well as a boardwalk, pavilion, and interpretive trail for public use. The impoundment and water control structure at Roberts Pond is failing and in need of replacement. Removal of this structure and the large impoundment will eliminate the potential for a catastrophic event resulting from failure during a storm event.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas.
Root Causes	Environmental changes / issues, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands, Quantity and timing of freshwater flow, Water supply
Proposed Metric(s)	Removal of this impoundment will reestablish approximately one mile of stream habitat for the federally threatened Okaloosa darter and reconnect an additional 12 miles of stream within the Swift Creek system for colonization by Okaloosa darters, Addtionally, this project will restore hydrology, and improve water quality in the Swift Cr. system as well as the Choctawhatchee Bay. The restoration of Swift Creek has been identified as a very high priority recovery action for the Okaloosa darter. At present, Roberts Pond is an underutilized recreational impoundment for the city of Niceville and Eglin AFB. This stream restoration will include the creation of two ponds for recreational fishing and birdwatching as well as a boardwalk, pavilion, and interpretive trail for public use.
Project Contact Name	Bill Tate
Project Cost	>$1 million

Project Map #	2
Latitude	30.47916
Longitude	-86.49043
Project Title	Stormwater Master Plan for Eglin Air Force Base
Location Description	Eglin AFB Main Base Cantonment area.
Project Description	The Stormwater Master Plan will identify strategies for reducing adverse environmental impacts of stormwater runoff from the Eglin AFB Main Base cantonment area. Both the quantity and quality of runoff will be addressed. The plan will evaluate the effects of existing and future land-uses on flood protection and water quality, and identify infrastructure and management strategies to accommodate those uses with a primary focus on low impact development. At a minimum the plan will consist of; 1) validation of existing inventory of stormwater infrastructure including a review of current permit requirements, 2) evaluation of runoff characteristics, 3) development of watershed model, 4) recommendations for technically feasible stormwater management best management practices, and 5) construction ready designs for a base-wide stormwater management system that effectively implements recommendations of the plan. Existing stormwater management technologies such as bio-retention, open swales, permeable pavements, reforestation/restoration have all been successfully used on Eglin AFB as a effective means of reducing adverse environmental impacts of stormwater runoff. Effective stormwater runoff management reduces hydrological impact on surrounding natural surface and groundwater systems, reduces pollutant discharges and the potential for flooding, increases groundwater recharge, lessens potential for "urban heat island" effects and improves aesthetic appeal by combining natural areas and other open spaces with new and renovated developments. The plan will provide guidance on low impact development strategies which have economic benefits such as reduced construction costs (compared with all-grey infrastructure) or compared with upsizing grey infrastructure for increased runoff. Additionally, recommendations will be provided to reduce maintenance costs (best management practices) and a twenty year capital improvement plan will be developed that will address critical areas, realize efficiencies and develop priorities.The plan will include recommendations on how to maximize social benefits such as improved aesthetics (rain gardens, permeable pavement etc.), integration of green infrastructure into the built environment, the creation of urban greenways and increase public education on their role in stormwater management. The plan will evaluate the effects of existing and future land-uses on flood protection. The plan will evaluate options to increase the flexibility of the stormwater system during flash floods and hurricanes.Due to federal government fiscal restraints, stormwater management systems are constructed on project by project basis as funds become available. Each construction project is permitted individually which drives up the cost and creates a disjointed approach to watershed stormwater management.
Major Actions	Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach., Reduce impacts to groundwater.

Root Causes	Contamination, Domestic wastewater, Environmental changes / issues, Erosion, Ineffective stormwater systems, Lack of adequate funding, Lack of communication among diverse stakeholders, Lack of environmental awareness, Quantity and timing of freshwater flow, Water reuse, Water supply
Proposed Metric(s)	Effective stormwater runoff management reduces hydrological impact on surrounding natural surface and groundwater systems, reduces pollutant discharges and the potential for flooding, increases groundwater recharge, lessens potential for "urban heat island" effects and improves aesthetic appeal by combining natural areas and other open spaces with new and renovated developments. The plan will provide guidance on low impact development strategies which have economic benefits such as reduced construction costs (compared with all-grey infrastructure) or compared with upsizing grey infrastructure for increased runoff. Additionally, recommendations will be provided to reduce maintenance costs (best management practices) and a twenty year capital improvement plan will be developed that will address critical areas, realize efficiencies and develop priorities.
Project Contact Name	Russell Brown
Project Cost	=<$1 million

Project Map #	3
Latitude	30.477289
Longitude	-86.054621
Project Title	Walton 162-052813 GENERATIONAL Restoration and Preservation of the Florida Panhandle
Location Description	4956 State Highway 20 East, Freeport, FL 32439-6038
Project Description	The E.O. Wilson Biophilia Center is an environmental education facility service 4th and 7th grades students from Okaloosa, Walton, Bay, Washington and Holmes Counties, up to 6,500 students a year. In addition, the Center is open to the public on select days. The mission of the E.O. Wilson Biophilia Center is to educate students and visitors on the importance of biodiversity, to promote sustainability, and to encourage conservation, preservation and restoration of ecosystems. The $12 million facility is debt free and does not charge the school districts admission. They are requesting funds for sustainability.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Lack of environmental awareness
Proposed Metric(s)	Pre and Post tests given, surveys, and interviews 6 months after participation in programs to measure increase in environmental knowledge as well as commitment and level of participation to make a difference.
Project Contact Name	Christy Scally
Project Cost	>$1 million

Project Map #	4
Latitude	30.477289
Longitude	-86.054621
Project Title	Walton 163-052813 Digital Environmental Curriculum of the Florida Panhandle
Location Description	4956 State Highway 20 East, Freeport, FL 32439-6038
Project Description	Currently, the E.O. Wilson Biophilia Center provides over 750 pages worth of interdisciplinary environmental-focused curriculum in a printed format and accessible on their website to participating schools (up to 6,500 students a year from Okaloosa, Walton, Bay, Washington and Holmes Counties). This proposal is to convert the curriculum into a digital and video format. Funding this project would be meeting an educational requirement (the Department of Education's goal of transforming all textbooks into a digital format by 2014-2015). As conservation is one of our platforms, converting our curriculum into this new digital format would eliminate the paper copies made for all teachers and students. Grading would become more efficient, and the printed material would not only be more visually appealing in color, but include video footage for better illustrations of messages conveyed. The digital and video format could more easily be shared throughout the state for environmental education programs via the World Wide Web than it was with the printed material.
Major Actions	Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Atmospheric deposition, Contamination, Domestic wastewater, Environmental changes / issues, Erosion, Invasive species, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands, Water reuse, Water supply
Proposed Metric(s)	Launching and number of students logging in/schools using digital curriculum. Pre and post tests, surveys and interviews over 6 months after participation in programs.
Project Contact Name	Christy Scally
Project Cost	=<$500,000

Project Map #	5
Latitude	30.477289
Longitude	-86.054621
Project Title	Walton 164-052913 Aquatic and Upland Herpetology Educational Center for the Florida Panhandle
Location Description	4956 State Highway 20 East, Freeport, FL 32439-6038
Project Description	The E.O. Wilson Biophilia Center's educational programs bring awareness to the interconnectedness of ecosystems. In particular, these programs stress the integrity and management of natural systems so that the next generation of aspiring scientists and environmentalists will understand more clearly how to manage our ecosystems in a pristine structure. The Center would like to expand by building a 4,250 SF Aquatic and Upland Herpetology Educational Center for the Florida Panhandle to its existing 31,000 SF facility (which houses a natural museum, theater, classrooms, labs, exhibits, and a birds of prey complex). This additional 4,250 SF Aquatic and Upland Herpetological building would provide a permanent location for our aquatic and terrestrial turtles, amphibians (including salamanders), and snakes. In this new building, the E.O. Wilson Biophilia Center will be able to highlight how several of these animals are "indicator species" as their health indicates the health of the environment. Aquariums, terrariums, audio visual equipment, and solar panels would be installed in this building.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Lack of environmental awareness
Proposed Metric(s)	Pre and post tests, surveys, interviews at least 6 months after participation in program, number of students participating in program.
Project Contact Name	Christy Scally
Project Cost	>$1 million

Project Map #	6
Latitude	30.5244
Longitude	-86.4786
Project Title	City of Niceville - Evans Branch - Meigs
Location Description	Central Project Location
Project Description	The Cypress-Meigs project improvements include the addition of a storm water management pond, vortex sediment collection chamber and pretreatment swales near the outfall into Cypress Creek. The City of Niceville has seen dramatic improvements using these vortex devices reducing sediment to the Bayou. The vortex devices when working with storm water ponds has been a very effective means of reducing sediment, controlling flooding and achieving improved TMDL's. This location has public lands (park) that can also be introduced into the overall improvement plan. The residents in this area can readily see how their quality of life is improved. An important part of this project is the City of Niceville's ability to maintain its storm water facilities With its storm water utility, funds are available to keep these improvement operational and at peak performance.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Domestic wastewater, Erosion, Ineffective stormwater systems, Lack of adequate funding
Proposed Metric(s)	The City of Niceville will monitor outfall flows and measure the quality of improvements gained by the implementation of environmental controls. The project has a 44 acre basin with a populated residential area greater than 70 percent with no storm water management controls. The needs assessment ranked this project as a number one needs candidate for improvements. The runoff from this basin has a short distance to travel to Boggy Bayou. Previous monitoring of this runoff indicated higher than normal pollution concentrations which keeps this location a valuable target project to achieve substantial improvements with the investments identified for the basin. Not only will the stakeholders of Niceville receive an improved quality of life, but also the users of the Bay. The water quality improvements will enhance fish propagation, address the threaten mussel species, the floridan aquifer recharge water quality and specifically improve the Choctawhatchee Bay.
Project Contact Name	Bruce Price
Project Cost	=<$1 million

Project Map #	7
Latitude	30.399319
Longitude	-86.59299
Project Title	Okaloosa County Baywalk
Location Description	The project is located in Okaloosa County on Okaloosa Island, along the southern shoreline of Choctawhatchee Bay, approximately 0.5 miles east of Brooks Bridge in Fort Walton Beach and 4.6 miles west of East Pass inlet. The latitude/longitude point represents the center of the project area. The project area consists of approximately 22+ acres of partially-vegetated uplands (previously the Okaloosa Island Golf Center), an existing public park (Ross Marler Park), and nearshore submerged lands.
Project Description	Okaloosa County proposes a unique and potential flagship project that integrates natural habitat restoration with recreational and educational features for the benefit of residents, tourists, and the environment. The project area consists of approximately 22+ acres of partially-vegetated uplands (previously the Okaloosa Island Golf Center), an existing public park (Ross Marler Park), and nearshore submerged lands. The project aims to transform the former golf course into a diverse ecosystem by restoring the currently eroding shoreline using natural materials and vegetation to create a living shoreline. The living shoreline will include low and high saltwater marsh creation areas, seagrass recruitment areas, and segmented nearshore oyster reef breakwaters to attenuate wave energy and provide habitat for fish and wildlife. The oyster breakwaters will consist of clean repurposed concrete rubble, limestone, or prefabricated concrete units and will serve as suitable substrate, or "cultch", for oyster colonization. The proposed project will stabilize the eroded shoreline, protect upland property and natural resources, and increase natural habitat for both terrestrial and aquatic species. The project will also benefit local water quality via filtration of upland runoff and surface waters. Notably, saltwater marsh and oyster communities comprise two of the primary natural communities adversely affected by the BP Horizon oil spill. Upland coastal strand restoration will include planting a variety of woody and herbaceous native coastal dune and coastal strand species that will benefit wildlife including reptiles, birds, and small mammals. The project also provides numerous public access/recreation amenities (offshore pier for day-use docking/fishing, kayak/paddleboard launch, swimming areas, upland boardwalks and interpretive walking trails). Educational features will likely include signage and kiosks that provide information about the local ecosystem and the importance of habitat protection and restoration. The project has the potential of becoming a keystone amenity and economic draw for the County by appealing to a wide range of visitors including bird enthusiasts and naturalists looking to observe wildlife along the nature trails and boardwalk or families simply interested in a bay-front picnic. The project property will also likely attract larger group functions such as school programs, day camps, eco-tours, outdoor events, weddings, and many others. The project complements the County's plan to further enhance the existing park and the long-term goal of constructing a linear park/boardwalk along the ~0.5-mile developed shoreline adjacent to the project area, connecting to the Gulf Islands National Seashore. The implementation of the living shoreline fulfills objectives of the FDEP, the Gulf Coast Ecosystem Restoration Council, NFWF, NOAA, The Nature Conservancy, the Choctawhatchee Basin Alliance, and many other organizations.

Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Contamination, Domestic wastewater, Environmental changes / issues, Erosion, Invasive species, Lack of environmental awareness, Limited economic diversity, Loss of vegetation, riparian buffers, and/or wetlands
Proposed Metric(s)	Okaloosa County has hired a coastal and environmental consultant to design and ensure the success of the diverse and self-sustaining coastal ecosystem providing coastal strand, saltmarsh, seagrass, and oyster habitat restoration. The installation of salt marsh plants and the rock (oyster reef) breakwater system will enhance water quality via nutrient uptake, filtration, and by trapping sediments. Post-construction surveys and annual monitoring surveys (likely required by regulatory authorities) will document the acreages of salt marsh and oyster reef restoration areas. The post-construction survey will also document the estimated 16+ acres of coastal strand restoration, 1.5 acres of seagrass recruitment area, and 2.7 acres of saltmarsh restoration area. Okaloosa Baywalk will provide numerous public education and outreach components focusing on natural resources including the importance and difference between various natural communities, threatened and endangered fish and wildlife species, and the significance of ecosystem restoration and protection. The County also plans to collaborate with local schools and environmental groups (CBA, ECWLR, GCMLC, etc) to document their educational activities and participation. The increase in neighboring property values, enhancement to ecotourism, and increased storm protection will contribute to community coastal resilience. The proposed project will implement these metrics to ensure long-term environmental and economic productivity.
Project Contact Name	Jim Trifilio
Project Cost	>$1 million

Project Map #	8
Latitude	30.5244
Longitude	-86.4786
Project Title	City of Niceville - Evans Branch - Cypress Avenue
Location Description	Evans Branch at Cypress Avenue
Project Description	The City of Niceville will construct a stormwater management pond with a pretreatment swale to capture and treat runoff before it enters Evans Branch. It is noted that Evans Branch is a tributary to Boggy Bayou and every improvement made improves the water quality of Choctawhatchee Bay. This project will enhance and improve the ability of environmental systems to support native habitat, improve fish propagation and enlighten the community to a better way to coexist with its natural wildlife and environment.The project will include a collection basin, improved collection system, vegetative enhancements to improve habitat and allow its natural function.These improvements are consistent with the intent to provide water quality and quantity improvements to the region.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Contamination, Environmental changes / issues, Erosion, Ineffective or unused BMPs, regulations & development codes, Ineffective stormwater systems, Invasive species, Lack of adequate funding, Quantity and timing of freshwater flow
Proposed Metric(s)	This project will be monitored to determine the amount sediment removed from the system and the levels of water quality improved by the installed devices. These devices will consist of a stormwater management pond, with pretreatment and the use of a vortex device to capture and remove sediment from the stormwater. This project is part of the City's facility improvement plan and has been classified by its stormwater matrix as one of its top needed projects.
Project Contact Name	Bruce Price
Project Cost	=<$500,000

Project Map #	9
Latitude	30.5144
Longitude	-86.4797
Project Title	City of Niceville - Thomas Branch - Boxer Avenue
Location Description	This is a central point of the basin
Project Description	The City of Niceville will introduce an improved collection system that includes a stormwater management pond to provide improved water quality and flood control to Thomas Branch. This project will reduce pollutant loading, sediment reduction and enhanced vegetation All of these things will address a condition of improved discharge to Thomas Branch, Boggy Bayou and ultimately Choctawhatchee Bay. The drainage basin is 94 acres and is part of a 250 acre basin improvement plan. Enhanced vegetation along the Branch will help improve water quality, improve the habitat conditions and allow the natural function of the Branch to be restored.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Environmental changes / issues, Erosion, Ineffective or unused BMPs, regulations & development codes, Ineffective stormwater systems, Invasive species, Lack of adequate funding, Loss of vegetation, riparian buffers, and/or wetlands, Quantity and timing of freshwater flow
Proposed Metric(s)	Since the clean water act was implemented in 1972, efforts have been underway to create and grow a partnership between the environment and its users. The City of Niceville has become a partner to the state and federal governments process to improve our communities surface and groundwater resources. This project is planned to improve water quality/quantity with the introduction of an improved collection system and a strormwater management pond.
Project Contact Name	Bruce Price
Project Cost	=<$500,000

Project Map #	10
Latitude	30.703125
Longitude	-85.844711
Project Title	Choctawhatchee Basin Restoration, Sedimentation Risk Index and Implementation
Location Description	This project will be located in Walton, Washington, and Holmes Counties. The Lat/Long represents where the three Counties' boundaries meet.
Project Description	The proposed project will conduct an inventory and evaluation of un-paved road crossings throughout the Choctawhatchee Bay Watershed within Florida using the Sedimentation Risk Index and improve identified priority crossings. The objectives of this project are to: (1) identify and inventory the location and magnitude of sediment deposition from un-paved road crossings within the Choctawhatchee Bay watershed including major tributaries; (2) identify and inventory fish passage impacts at road crossings in the watershed; and (3) implement restoration plans to improve roadways to reduce or eliminate sediment and pollutants at top priority road crossings. This project will benefit Walton, Washington, and Holmes counties by allowing them to use science based reasoning for developing a comprehensive plan for future road projects and funding that addresses the federally mandated water quality standards.
Major Actions	Reduce sedimentation.
Root Causes	Erosion, Ineffective or unused BMPs, regulations & development codes
Proposed Metric(s)	This project proposes to prioritize the most needed paving of dirt road crossing within Walton, Washington, and Holmes Counties due to sediment pollution. As the Counties are able to implement the restoration plans, short-term metrics will include the percent of priority gullies and Right of Ways areas that are paved and best management practices used. Long-term metrics will include the percent reduction in sediment load to surface waters.
Project Contact Name	Melinda Gates
Project Cost	>$1 million

Project Map #	11
Latitude	30.348244
Longitude	-85.216347
Project Title	Coastal Dune Lake Hydrologic Restoration
Location Description	(30.348244/85.216347) Culvert crossing at Draper Lake. (30.340497/85.196961) Culvert crossing at Big Redfish Lake. (30.337139/85.182994) Culvert crossing at Little Redfish Lake. (30.336972/85.173519) Culvert crossing at Alligator Lake. (30.307925/85.079081 Culvert crossing at Deer Lake.
Project Description	The coastal dune lakes are classified by Florida Natural Areas Inventory (FNAI) as G2 (imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction throughout its range); and S2 (imperiled in state because of rarity or because of some factor(s) making it very vulnerable to extinction throughout its range). Tributaries, groundwater seepage, and occasional inflow of the Gulf water feeds into depressions located along the coastline in south Walton county. These lakes break open periodically through the sand dunes, discharge to the Gulf of Mexico, and then close off again through a connection called an outfall. Water from the Gulf of Mexico enters periodically through these outfalls brining in saltwater and saltwater species. These coastal dune lakes act as mini-estuaries with freshwater entering mainly from the north side of the lake and salt water entering mainly from the Gulf of Mexico. This project proposes the removal of the old and dilapidated culverts under County Road 30A and replacing them with bridges on five (5) coastal dune lakes (Deer Lake, Big Redfish Lake, Little Redfish Lake, Alligator Lake, and Draper Lake). County Road 30A crosses these lakes where culverts separate the north and south sides of a once contiguous ecosystem. As a result, the north side of each lake has become an exclusively freshwater system while the south side has retained the brackish characteristics of a Coastal Dune Lake. The culverts act as barriers to fish and wildlife making it difficult for them to pass from one side to the other. Sediments accumulate on the upstream side of the culverts causing the depth of water to be dramatically different on the north and south side of the road. Additionally, the culverts restrict the lakes from flushing naturally. The proposed project will restore the connection and circulation of the lakes and improve the lake community and adjacent ecosystems. It will greatly improve water quality in the targeted lakes, thereby enhancing fish and wildlife habitat. The project will also decrease the effects of storm water runoff and improve flood protection by allowing the lakes to more completely flush when the natural openings occur. Pre- and post-restoration monitoring will be conducted through a cooperative project between Walton County, Choctawhatchee Basin Alliance (CBA), and the University of Florida LAKEWATCH. Walton County has an ongoing water quality monitoring program for the Coastal Dune Lakes. Through this water quality monitoring program, each lake is sampled monthly for Total phosphorus, Total nitrogen, Chlorophyll, Water clarity, Color, Temperature, Oxygen, Salinity, Turbidity, and pH. The County has been collecting this data in excess of 10 years. Future data collection will be utilized to evaluate the success of the restoration by comparative analysis.

Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas.
Root Causes	Ineffective stormwater systems
Proposed Metric(s)	This project proposes to remove culverts from five (5) Coastal Dune Lakes replacing them with a bridge infrastructure, which will restore the hydrologic connection of the north end of the lakes (or head waters) with the southern end of the lakes that periodically connect to the Gulf of Mexico. The short-term metric that will be used is once the culverts are replaced with a bridge infrastructure the hydrologic connection will be immediately be increased. The long term metrics will include the increase in fish and wildlife movement and water quality improvements by allowing flushing throughout the lake systems.
Project Contact Name	Melinda Gates
Project Cost	>$1 million

Project Map #	12
Latitude	30.385694
Longitude	-86.239131
Project Title	Walton County Marine Fisheries Hatchery/Enhancement Center
Location Description	The location is the center of the project/parcel.
Project Description	Walton County is working with the Florida Fish and Wildlife Conservation Commission (FWC), the Wildlife Foundation of Florida, the Northwest Florida State College (NWFSC), and the Choctawhatchee Basin Alliance of NWFSC (CBA) to develop a saltwater plant nursery and fish hatchery in Churchill Bayou (Walton County, Florida). The Walton County Marine Fisheries Hatchery/ Enhancement Center will have four (4) main components: 1. Fish Hatchery: Hatchery production (up to 500,000 fish annually) is fully integrated with a 'sister facility' in Pensacola—that facility will produce the small fingerlings (1-2 inches in size, called Phase I fish) that are then raised to larger size fingerlings (5-7 inches in size, called Phase III fish) at the Walton County facility. Fish culture techniques are based on the use of intensive (i.e., indoor, tank-based) recirculating aquaculture systems that reduce water usage and effluent discharge. 2. Plant Nursery: The plant nursery will serve as the primary source of much-needed native marine and estuarine aquatic marsh plants needed for the Gulf Coast regional-wide coastal restoration efforts. The WMEC Plant Nursery also serves a vital function in the required final stage of effluent filtration for the WMEC Fish Hatchery; where the effluent is filtered via native coastal wetland plant species and through the on-site greenhouse nurseries for coastal wetland/dune plants and seagrasses. In this manner, nutrients from the aquaculture facility are recycled as native plant biomass, which will support ongoing regional coastal habitat restoration efforts. 3. Water Quality Laboratory: The water quality laboratory will serve as a much-needed state-certified water quality testing facility for the region to support not only any hatchery/nursery needs, but also CBA's extensive volunteer water sampling program that assesses these waters in compliance with the State's numeric nutrient criteria. 4. OYSTER (Offer Your Shell To Enhance Restoration) Shell-Recycling Center: The oyster shell-recycling center will provide a dedicated location for oyster shell collection and reprocessing. Discarded oyster shells are collected from participating local restaurants, cleaned through natural processes, then bagged and used to construct oyster reefs in Choctawhatchee Bay. CBA oyster reefs are just one component of the Living Shorelines concept, an alternative to hardened structure (e.g., seawalls, rip-rap), which provides several ecosystem services: correction and prevention of erosion, habitat for many and various marine species, as well as wave attenuation which supports the restoration of shoreline grasses in particular and intertidal habitat more generally. The WMEC will serve as a hub for regional habitat restoration planning and will house a facility for curing oyster shell and creating oyster bags/modules for installation.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Increase cooperation and coordination for monitoring, funding, implementation, outreach.

Root Causes	Lack of adequate funding, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands
Proposed Metric(s)	Short-term Metrics:·Creation of a facility that can raise Phase III finglings fish to be distributed in the Choctawhatchee Bay and Gulf of Mexico.·Creation of a plant nursery facility that will serve as a source regionally for native marine and estuarine aquatic marsh plant species.·Creation of a water quality laboratory facility that will provide regionally testing for nutrient criteria.·Creation of a OYSTER Shell-Recycling Center that will provide a location for oyster shell collection and reprocessing for erosion prevention project, habitat for marine/estuarine species, and wave attenuation for intertidal habitats.Long-term Metric:·Increase in availability of bay and gulf fish species.·Increase in availability of native marine and estuarine aquatic marsh plant species.·Increase in availability of water quality laboratory sources and reduction in cost for water quality programs regionally.·Increase erosion protection in the Choctawhatchee Bay.·Increase in habitat availability for marine/estuarine species.
Project Contact Name	Melinda Gates
Project Cost	>$1 million

Project Map #	13
Latitude	30.442207
Longitude	-86.32831
Project Title	Creating community resilience by implementing L iving Shorelines projects using innovative programs such as OYSTER Shell Recycling and Grasses in Classes along with comprehensive monitoring of Choctawhatchee Bay.
Location Description	Middle of Choctawhatchee Bay
Project Description	This proposal will support essential Choctawhatchee Basin Alliance (CBA) programs for a 5-year period. CBA is committed to sustaining and providing optimum utilization of our water resources. We propose a multi-pronged approach to providing restoration and health assessments in Choctawhatchee Bay, which include the following types of projects: oyster shell recycling program; living shorelines initiative involving community-based oyster reef construction and shoreline plantings produced by K-12 salt marsh nurseries (Grasses in Classes); comprehensive monitoring of water quality, seagrass and contructed oyster reefs; invasive plant removal to improve aquatic and wetland habitat. The long-term, permanent result of all of these projects will be a more balanced, connected and sustainable coastal/estuarine ecosystem. Project benefits to coastal ecosystems: ·Coordinate Living Shoreline projects within Choctawhatchee Bay for 5 years that provide community resilience for Choctawhatchee Bay, habitat creation, improved water quality, decreased erosion, flood control and alternatives to armoring. ·Oyster Shell Recycling Program–public involvement, education,resources for living shorelines initiative. ·Monitoring Program-public involvement, collection of data needed for annual health assessments, identification of needed restoration areas. ·Educational Program-fostering the next generation of environmental stewards. ·Invasive Plant Removal Program--public involvement, wetland and aquatic habitat restoration.Project objectives: ·Construct Living Shoreline projects that annually provide approximately 2,000 ft. of constructed reef and 3,000 native shoreline plants planted per year for 5 years. ; Coordinate OYSTER (Offer Your Shell To Enhance Restoration) Shell Recycling Program at local restaurants throughout Okaloosa and Walton County for 5 years. ·Monitor water quality monthly, sea grass distribution and abundance annually, and constructed oyster reefs annually for 5 years in Choctawhatchee Bay. ·Conduct hands-on estuarine lessons at approximately 20 K-12 schools (~80 classes containing 2,500 children) monthly through out Okaloosa and Walton Counties and set up salt marsh nurseries, with 10,000 plants, for Grasses in Classes for 5 years. ·Coordinate 30 volunteers and 6 agencies to remove invasive species from wetland and aquatic habitats within the Choctawhatchee watershed.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach.

Root Causes	Environmental changes / issues, Erosion, Invasive species, Lack of adequate funding, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands
Proposed Metric(s)	Environmental changes/issues--number of water samples collected, annual baywide seagrass monitoring accomplished, annual baywide oyster reef monitoring accomplished, annual baywide shoreline vegetation assessment accomplished, annual report of monitoring results compiledErosion-- number of shoreline vegetation planted, linear feet of intertidal oyster habitat created, tons of oyster shell recycledLack of adequate funding--number of dollars that go directly to programsLack of environmental awareness--Number of students reached, percent of students who show increased environmental awareness (as determined by pre- and post-tests); number of citizens reached, number of citizens who show increased environmental awareness (as determined by exit surveys), number of volunteers recruited/ retainedLoss of vegetation, riparian buffers, and/or wetlands--acres of wetlands, vegetation and/or wetlands restored, acres of habitat improved by restorationInvasive species--acres of invasive species removed, acres of habitat improved by removal,
Project Contact Name	Alison McDowell
Project Cost	>$1 million

Project Map #	14
Latitude	30.476701
Longitude	-86.331224
Project Title	Providing stormwater infrastucture, restoring critical habitat and increasing utilization opportunities at Choctaw Beach, Walton County
Location Description	Center of Choctaw Beach Park
Project Description	Project location and brief description: Choctaw Beach Park is a bayside recreation area off of Highway 20 in Walton County, Florida. It is widely used, but is in violation of storm water standards set by the Division of Transportation (DOT) and the Walton County Land Development Code. The Choctawhatchee Basin Alliance (CBA) requests funding to reduce untreated runoff and sediment load entering Choctawhatchee Bay from Choctaw Beach Park by (1)re-grading and paving the parking lot and adding an appropriate stormwater pond planted with native vegetation, (2) planting native vegetation along the waterside edge of the park with the help of community volunteers, and (3) evaluate the possibility of removing the septic tank and hooking to sewer/lift stations for the public restrooms. Features that would increase utilization of the bay will also be evaluated, for example: improving and extending boat ramp, installing dock areas around ramp, removing septic tanks and converting to lift station, improving park equipment and installing educational signage.This project would also address historic problems at Choctaw Beach involving illicit sedimentation as well as flooding that inundate the park and its resources, and reoccurring high bacteria counts. It will restore3 acres of coastal land and an additional 0.31 miles of shoreline. Project objectives: ·Reduce untreated runoff and sediment load entering Choctawhatchee Bay from Choctaw Beach Park ·Reduce bacteria counts in the swimming area at Choctaw Beach Park·Reduce shoreline erosionat Choctaw Beach Park ·Provide increased utilization and education on Choctawhatchee Bay ·Complete a project cited by the Walton Board of County Commissioners and supported by the public Project benefits to coastal ecosystems: ·Improved water quality and marine habitat by reducing sedimentation from untreated runoff ·Reduced bacteria levels in the swimming area at Choctaw Beach Park ·Flood control ·Ongoing public education via on-site signage
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Environmental changes / issues, Erosion, Ineffective or unused BMPs, regulations & development codes, Ineffective stormwater systems, Lack of adequate funding, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands

Proposed Metric(s)	Water quality--% of septic tank systems converted to sanitary sewer system, % of stormwater infrastructure addressed, amount sediment entering the bay reduced, percent reduction in bacteria levelsHabitat/resource protection--acres of habitat restoredEducation/Motivation of public--number of signs and educational materials produced, number of volunteers recruited
Project Contact Name	Alison McDowell
Project Cost	=<$500,000

Project Map #	15
Latitude	30.387133
Longitude	-86.238663
Project Title	Walton County Marine Fisheries Hatchery/Enhancement Center (WMEC)
Location Description	Facility location (proposed)
Project Description	Project location and brief description: This project develops a saltwater plant nursery and fish hatchery in Churchill Bayou (Walton County, Florida). This facility, known as the Walton County Marine Fisheries Hatchery/Enhancement Center (WMEC), will have a dual purpose; (1) serving as the primary Gulf Coast plant nursery for marine/estuarine aquatic plants needed for coastal restoration and (2) providing a recreational fish hatchery for restoring fishing activity (i.e., increase angler participation and the number of fishing trips) by providing hatchery production and eventual release of highly sought-after sportfish species such as red snapper, red drum, spotted seatrout, and Florida pompano. The project also proposes a much-needed state-certified water quality testing laboratory for the region to support not only any hatchery/nursery needs, but also CBA's volunteer water sampling program that assesses these water in State's numeric nutrient criteria.This facility will also support CBA's OYSTER Shell Recycling Program, Grasses in Classes Program, and Living Shoreline projects. NWFSC will utilize this facility in the potential development of degree/certificate programs to provide a trained work force for jobs that provide higher annual salaries than the median income for Walton County. The facility will also provide classrooms and overnight accommodations that would host various educational programs and needed research projects. Project benefits to coastal ecosystems: ·Restoration of critical habitat ·Restore the loss of fishing activity ·Changing perceptions of visitors and resident anglers ·Job development ·Developing the future conservationists and anglers
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Environmental changes / issues, Erosion, Lack of adequate funding, Lack of environmental awareness, Limited economic diversity, Loss of vegetation, riparian buffers, and/or wetlands
Proposed Metric(s)	Water quality--number of samples processedHabitat/resource protection--percent fish population enhanced, number of plants produced, tons of oyster shell recycled, acres of living shoreline createdEducation/motivation of the public--number of constituents educated, number of education materials and experiences providedCoastal Community resilience--increase in diversification of economic base
Project Contact Name	Alison McDowell
Project Cost	>$1 million

Project Map #	16
Latitude	29.842864
Longitude	-85.13958
Project Title	St. Joe Timberland
Location Description	Located in Gulf and franklin counties north of Lake Wimico. The Latiture/Longitude reprersents the middle of the subject property
Project Description	Located in Franklin and Gulf counties, Florida, this project is part of a vast ecosystem that begins hundreds of miles away in the Chattahoochee National Forest in Georgia at the headwaters of the Apalachicola River. The project area contains a large expanse of floodplain forest. The project area is an important element in conserving the nationally and internationally recognized biological diversity of the Apalachicola River and Bay ecosystem. This ecosystem has been designated as a United Nations International Biosphere site for its' vital role in sustaining ecological diversity. The area's outstanding wildlife habitats, including floodplain swamp, floodplain marsh, bottomland forest, and pine flatwoods support significant populations of both rare and common wildlife, including the red-cockaded woodpecker, Barbour's map turtle, southern bald eagle, and northern bobwhite. The area provides excellent opportunities for wildlife viewing, nationally recognized paddling opportunities, and other fish and wildlife-based public outdoor recreation opportunities such as hunting, fishing, camping, horseback riding, bicycling, and hiking.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach., Reduce impacts to groundwater.
Root Causes	Environmental changes / issues, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands, Water supply
Proposed Metric(s)	The projects success will be measured by the number of acres acquired. The impact will be the protection of the areas rich biological diversity.
Project Contact Name	Gary Cochran
Project Cost	>$1 million16

Project Map #	17
Latitude	30.436094
Longitude	-85.908286
Project Title	Unpaved Road Stream Crossing Initiative
Location Description	Unpaved Roads/Stream Crossing Initiative on the Choctawhatchee River Basin
Project Description	Direct connection between roads and streams can result in the delivery of sediment, alteration of natural surface and subsurface hydrology, and the risk of exposure to toxic chemical materials (USFWS, 2005). When hydrologic phenomena or anthropogenic activities result in substantial increases in suspended particle concentrations, many aquatic organisms exposed to such conditions may be adversely affected (Neumann et al., 1982). Hardening of road-stream crossings will minimize the amount of sediment entering the stream, thus improving in-stream habitats for both fish and wildlife.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce sedimentation.
Root Causes	Environmental changes / issues, Erosion, Ineffective or unused BMPs, regulations & development codes, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands
Proposed Metric(s)	Sediment Risk Indices and BANCS can be used to determine the amount of sediment entering the stream/bay before and after restoration to determine the impact restoration activities have had on the root cause.
Project Contact Name	Jessica Graham
Project Cost	>$1 million

Project Map #	18
Latitude	30.439444
Longitude	-86.347778
Project Title	Choctawhatchee Bay Seagrass Habitat Identification
Location Description	Choctawhatchee Bay Basin
Project Description	Seagrass have been identified in this watershed plan as being a high valued target for restoration. The health of this estuary is directly dependent on healthy seagrass habitats. Seagrass meadows provide many ecosystem services, and are one of the most productive habitats on the planet. The important ecological and economic functions of seagrass beds have been widely acknowledged, notably to their importance to fisheries (Bell and Pollard, 1989). The FDEP estimates that up to 90% of all commercial and recreational important marine species are dependent on seagrass habitat at some point in their lifespan. Many of the projects proposed for funding specifically address projects affecting seagrass. Decreasing storm water pollutants and sedimentation will increase water quality. Improvement in water clarity will in turn, increase available seagrass habitat much in the same way it has in Tampa Bay. In addition, educating boaters with signage will decrease the frequency of propeller scarring. However, few projects have addressed the need to restore large depressions to increase suitable seagrass habitat. These depressions may have been caused as a result of old dredging activities or large vessel groundings. Depressions caused from dredging cause a tremendous amount of damage to the waterbody. The depressions often act as nutrient sinks similar to storm water retention ponds. The lack of vegetation in the bottom of the depressions do not sequester the nutrients nor stabilize the muck substrate. Phytoplankton blooms can stimulate from the nutrient source, and hydrogen sulfides are released from the bacteria that break down the organics in the mucky substrate. Seagrasses are dependent on a high quantity of light to survive. Previously dredged sites create conditions that make seagrass recolonization impossible due to the water depth alone. However, after filling the feature back to grade, the site would make prime seagrass habitat. It is the intent of this project to identify multiple areas that were historically seagrass habitat which were subsequently dredged or heavily damaged. The sites would be ranked on their potential for seagrass restoration success and cost analysis. Included is an example of site that would greatly benefit if restoration occurred. The basin wide review would include detailed specifications for individual features identifying: 1.size of feature (volume and area)2.location in relation to a sediment sourc 3.estimated cost for restoration4.expected species of emergent and submerged vegetation that could be sud. Works Cited: Bell, J.D., Pollard, D.A., 1989. Ecology of fish assemblages and fisheries associated with seagrasses. In: Larkum, A.W.D., McComb, A.J., Sheperd, S.A. (Eds.), Biology of Seagrasses. A Treatise on the Biology of Seagrasses with Spatial Relevance to the Austrailian Region, Aquatic Plant Studies 2. Elsevier, Amsterdam, pp. 565-609.

Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Reduce nutrient loading., Reduce and treat stormwater., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Environmental changes / issues, Erosion, Ineffective or unused BMPs, regulations & development codes, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands
Proposed Metric(s)	Project will be considered successful if new potential seagrass habitat sites are identified, and a thorough restoration plan is determined.
Project Contact Name	Carter Henne
Project Cost	<$100,000

Project Map #	19
Latitude	30.4315
Longitude	-86.11066
Project Title	Upper Choctawhatchee Bay Nitrogen Reduction Project
Location Description	South Boundary
Project Description	The Upper Choctawhatchee Bay Nitrogen Reduction Project includes extending the City of Freeport Public Sewer to five areas of the Choctawhatchee Bay including the neighborhoods of McDaniels Fishcamp Road, Ramsey Branch, Lagrange Road, and Sparkleberry neighborhoods for the removal of 580 existing septic tank systems. The conceptual design has been completed and testing has been comploeted in the McDaniels Fishcamp community (313 homes) that demonstrates the need for these improvements. The 1999 DEP Study of water quality in the Choctawhatchee Bay cited Nitrogen as a major contributing issue related to the loss of shellfish and turbidity as a major contributing issure related to seagrass. The existing septic tanks have an extremely high failure rate and often discharge directly into Mallet Bayou, Lagrange Bayou, and Black Creek. The water quality in these tributaries would be improved dramatically through the elimination of the on site waste disposal systems. The community has requested assistance from both Walton County and the City of Freeport to extend the system to these neighborhoods however there is not adequate funding to secure the $1.7M match for the $5.2M project. The DEP State Revolving Fund would provide a 67% grant to the City of Freeport to complete the project and is very eager to assist with funding however the match is not available. This project is a very high priority for the Working Waterfronts Committee and the City of Freeport. The project could be completed in Phases however the need for all these areas to be completed is critical to the health of the Bay.
Major Actions	Reduce nutrient loading., Reduce sedimentation., Increase cooperation and coordination for monitoring, funding, implementation, outreach., Reduce impacts to groundwater.
Root Causes	Domestic wastewater, Environmental changes / issues, Lack of adequate funding, Lack of communication among diverse stakeholders, Lack of environmental awareness, Limited economic diversity, Loss of vegetation, riparian buffers, and/or wetlands

Proposed Metric(s)	The proposed project would eliminate 580 existing septic tanks that are on existing residential homes that have greater than 15% failure rate. The existing septic tanks were installed over a 30 year period when the rules regarding drain fields did not provide adequate separation from the groundwater table and a large portion of the systems are discharging directly into the Upper Choctawhatchee Bay. Testing has been completed to show the elevated nitrogen and fecal coliform counts in adjacent wetlands and tributaries throughout the project area and have been reported to the Walton County Health Department. The City of Freeport Sewer System can be easily extended to cover these five areas and the existing plant has capacity to handle the flows. The testing will be completed after the project to compare the baseline fecal and nitrogen levels and to prove the effectiveness of the project. The City of Freeport has been trying to move the project forward for the past three years and has not been able to come up with funding for the project. The fecal coliform count in the McDaniels Fishcamp neighborhood ranges from 1200 to 3400 in open ditches, swales, and canals adjacent to the 313 home development. Additional testing is being completed in Lagrange Bayou and Fourmile Creek to demonstrate the need for public sewer extensions.
Project Contact Name	Clifford L. Knauer, P.E.
Project Cost	>$1 million

Project Map #	20
Latitude	30.622846
Longitude	-85.899353
Project Title	Conservation of State and Federally_listed Coastal Species
Location Description	Choctawhatchee Bay watershed
Project Description	This program would include multiple projects to address the management, survey, monitoring, restoration, and research needs for Florida's State- and Federal-listed species identified in State's Imperiled Species Management Plan, other management plans, and Federal recovery plans. Projects would occur in multiple counties of the Choctawhatchee Bay watershed. Projects would include research activities to determine extent of impact to fish and wildlife resources; life history information, including habitat requirements; development of survey, monitoring, and management techniques require to restore and/or manage listed species and their habitats; and evaluation of economic impact of fish and wildlife resources. Projects also would include activities to restore and manage impacted listed species habitats and populations; survey listed species and associated species populations and their habitats; and short-term and long-term monitoring of species and habitats. Replenish and Protect Living Coastal and Marine resources. Develop and enact prioritized species management, monitoring, research, and recovery plans.
Major Actions	Protect, restore, create and/or manage natural habitat and resources, and increase buffer areas., Increase cooperation and coordination for monitoring, funding, implementation, outreach.
Root Causes	Environmental changes / issues, Lack of adequate funding, Lack of environmental awareness, Loss of vegetation, riparian buffers, and/or wetlands, Quantity and timing of freshwater flow
Proposed Metric(s)	Projects would be focused on state- and federally-listed species within the Choctawhatchee Bay watershed and would seek to address the root causes/issues by: - research activities to determine extent of impact to fish and wildlife resources - development of monitoring and management techniques required to restore and/or manage listed species and their habitats - evaluate economic impact to fish and wildlife resources - restore and managed impacted listed species habitats and populations - short and long-term monitoring of species and habitats
Project Contact Name	Brad Gruver
Project Cost	=<$1 million, >$1 million

Project Map #	21
Latitude	NA
Longitude	NA
Project Title	Washington County Unpaved Roads Paving and Stabilization
Location Description	(Miller Lane - 1,753'), Shell Point Road (1,395'), Joe Neel Road (1,288'), Rooks Circle (5,064'), Pike Pond Road (11,363'), Kent Road (23,653'), Houston Road (10,580'), Hard Labor (26,216'), Mudhill Road (7,324')
Project Description	Paving of 81,312 LF (approx. 15.4 miles) along eight currently unpaved roads proximate to Choctawhatchee River and tributaries of the Choctawhatchee River to prevent sedimentation into the river and to Choctawhatchee Bay. (Miller Lane - 1,753'), Shell Point Road (1,395'), Joe Neel Road (1,288'), Rooks Circle (5,064'), Pike Pond Road (11,363'), Kent Road (23,653'), Houston Road (10,580'), Hard Labor (26,216'), Mudhill Road (7,324')
Major Actions	; Stormwater; Wastewater; Sedimentation and Turbidity; Sediment Toxicity; Seagrass Loss / Degradation; Oyster Loss / Degradation; Natural Nearshore (submerged) habitat loss; Restoration Uplands; Loss of other habitat types (Uplands); Recreational Use / Human Access; Upland Protection ; Community Resilience
Root Causes	; Protect, restore, create and/or manage nature habitat and resources and increase buffer areas; Increase cooperation and coordination for management, monitoring, funding, implementation, outreach, enforcement; Reduce impacts to groundwater and ensure adequate fresh water availability; Reduce and treat stormwater; Reduce nutrient loading; Reduce sedimentation; Increase economic diversification
Proposed Metric(s)	; % surface waters meeting designated use; Decrease in turbidity; Decease in nutrient loadingH2O/sediment Quality/Quantity; Economic impact of polluted water body; Return of loss uses; Percent of priority habitat areas created, restored, managed, and/or protected
Project Contact Name	Michael J. DeRuntz
Project Cost	>$1 million

Project Map #	22
Latitude	NA
Longitude	NA
Project Title	Washington County Blue Trail Map
Location Description	Washington, Holmes, Walton, Jackson, and Bay Counties - Choctawhatchee River and Bay, Ecofina Creek, St Andrew Bay, Chipola River and Apalachicola River and Bay Watersheds
Project Description	Development of a coordinated map identifying the existing river access facilities on the Choctawhatchee River, Holmes Creek, and Econfina Creek. This brochure would identify the distance between access points, natural resources in the area, public facilities at the access points, and roadway access to the river access facilities.
Major Actions	; Stormwater; Wastewater; Sedimentation and Turbidity; Sediment Toxicity; Seagrass Loss / Degradation; Oyster Loss / Degradation; Natural Nearshore (submerged) habitat loss; Restoration Uplands; Loss of other habitat types (Uplands); Recreational Use / Human Access; Upland Protection ; Community Resilience
Root Causes	; Protect, restore, create and/or manage nature habitat and resources and increase buffer areas; Increase cooperation and coordination for management, monitoring, funding, implementation, outreach, enforcement; Reduce impacts to groundwater and ensure adequate fresh water availability; Reduce and treat stormwater; Reduce nutrient loading; Reduce sedimentation; Increase economic diversification
Proposed Metric(s)	; % surface waters meeting designated use; Decrease in turbidity; Decease in nutrient loadingH2O/sediment Quality/Quantity; Economic impact of polluted water body; Return of loss uses; Percent of priority habitat areas created, restored, managed, and/or protected
Project Contact Name	Michael J. DeRuntz
Project Cost	<$100K;

Project Map #	23
Latitude	NA
Longitude	NA
Project Title	Northwest Florida Erosion Site Assessment
Location Description	Encompasses watershed-wide identification and assessment of active erosion features, together with project planning for erosion abatement and site restoration. Erosion and sedimentation have been identified as major issues affecting the Choctawhatchee watershed, resulting in water quality degradation and benthic and riparian habitat smothering.
Project Description	Development of a coordinated map identifying the existing river access facilities on the Choctawhatchee River, Holmes Creek, and Econfina Creek. This brochure would identify the distance between access points, natural resources in the area, public facilities at the access points, and roadway access to the river access facilities.
Major Actions	; Stormwater; Wastewater; Sedimentation and Turbidity; Sediment Toxicity; Seagrass Loss / Degradation; Oyster Loss / Degradation; Natural Nearshore (submerged) habitat loss; Restoration Uplands; Loss of other habitat types (Uplands); Recreational Use / Human Access; Upland Protection ; Community Resilience
Root Causes	; Protect, restore, create and/or manage nature habitat and resources and increase buffer areas; Increase cooperation and coordination for management, monitoring, funding, implementation, outreach, enforcement; Reduce impacts to groundwater and ensure adequate fresh water availability; Reduce and treat stormwater; Reduce nutrient loading; Reduce sedimentation; Increase economic diversification
Proposed Metric(s)	; % surface waters meeting designated use; Decrease in turbidity; Decease in nutrient loadingH_2O/sediment Quality/Quantity; Economic impact of polluted water body; Return of loss uses; Percent of priority habitat areas created, restored, managed, and/or protected
Project Contact Name	Michael J. DeRuntz
Project Cost	To Be Determined

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