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The St. Andrew Bay Ecosystem, Our Environment

A Revision of "A Look to the Future"

Written By:

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for

The St. Andrew Bay Environmental Study Team and The St. Andrew Bay Environmental Study Team, Inc.

DEDICATION:

We wish to dedicate "The St. Andrew Bay Ecosystem, Our Environment" to Ms. Candis Harbison in recognition of her tireless volunteer efforts to conserve and preserve our ecosystem over the last 25 years. Her accomplishments and service to our community are too many to list here. However, we are aware that Ms. Harbison has, among many volunteer efforts, served as a Chairperson of BEST and as a BEST Steering Committee member for many years. She is a founding member of BEST, Inc. and has been President since its beginning. She has served as the President of the Bay County Audubon Society numerous times, as an officer when not the President, and has been the Chairperson of the Society's Conservation Committee for many years. She is a founding member and President of the Bay County Conservancy and a member of the Growth Management Working Group for Bay County. In addition to the above, one must add her service with The League of Women Voters, the Guardian Ad Litum program, service on the Northwest Florida Water Management District Governing Board, and numerous citizen groups and committees formed to address particular areas of concern or interest. All who know her appreciate her devotion to Bay County and our environment.

On a more personal note, this document would not have been completed if Ms. Harbison had not encouraged us to do so. We hope that this will show her, at least in a small way, just how much she is appreciated.

Edwin J. and Lisa A. Keppner, May 2001

Preface

"A Look to the Future. A Management Plan for the St. Andrew Bay Ecosystem" was printed in June 1998 and was the culmination of nine months of intensive work by the Department of Environmental Protection, Ecosystem Management Team and the Department's Northwest District, Panama City Branch Office and the St. Andrew Bay Environmental Study Team (BEST). The original writing and printing of the document was made possible by a grant from the National Oceanic and Atmospheric Administration (NOAA) and administered by the State of Florida Department of Community Affairs (DCA), Coastal Zone Management Program to the Department of Environmental Protection's (FDEP) Northwest District Ecosystem Management Section. The senior author of this revision had the pleasure of authoring sections of the original plan and coordinating the efforts of the DEP and the members of the BEST Steering Committee in completing the plan.

BEST and BEST, Inc. determined that "A Look to the Future" should be revised and updated to reflect the accomplishments of various entities toward fulfilling the Action Plans in the original document and to add to or revise the Action Plans as needed. The Northwest Florida Water Management District published a Surface Water Improvement Management plan (SWIM) for the St. Andrew Bay Drainage basin in September 2000. SWIM plans are directed at the maintenance of the quality of surface waters and address many ecosystem functions related to water quality. The SWIM plan for the St. Andrew Bay drainage basin adopted much of the organization and information provided in "A Look to the Future" including a majority of the Action Plans as described in "A Look to the Future". As a result of the incorporation of most of "A Look to the Future" in the SWIM plan, it was decided that the revision should be accomplished with more emphasis on total ecosystem management and a de-emphasis on water quality to separate it from the SWIM plan. Therefore, the purpose of this revision is to make it an adjunct to the SWIM plan rather than a repeat of the SWIM plan and "A Look to the Future".

This document relies on "A Look to the Future". The authors rewrote and rearranged the introductory material and Part 1. Part 2 is from the original plan with modifications from the SWIM plan and updates by the authors. Part 3 is from the original plan with modifications by the authors. Part 4 has been modified by the authors and relies on the original document. The authors have modified the biodiversity section of Part 5 and added the section on accomplishments for each Action Plan. Mr. Michael Brim, U.S. Fish and Wildlife Service authored the Contaminants section and Action Plans for the original plan, and these were carried over to the revision with additional material added as was provided. The following were also carried over and/or modified from the original plan with the author; Hydrology, Mr. Kennard Watson, St. Andrew Bay Resource Management Association; Point Source Discharges, Mr. Steven Kelley, DEP; Air Quality, Mr. Richard Spaulding, DEP; Impaired Water Bodies, DEP, Pensacola; and Solid Waste, Mr. Clarke Millikan, DEP.

The original "A Look to the Future" was the result of the dedicated volunteer spirit of the members of BEST who devoted a considerable amount of their time to the successful completion of that plan. The authors hope that this document will have the same positive affect as the original plan.

Edwin J. Keppner and Lisa A. Keppner, May 2001

Acknowledgements

Many individuals provided information that was included in the original document, and those persons are recognized in that document, and the authors wish to express their sincere appreciation to all of those people who contributed to the original "Look to the Future". The authors served as volunteers to accomplish the task of providing this revision for distribution. Sincerest appreciation is expressed to the people of the **Northwest Florida Water Management District** for permission to use tables and figures from the SWIM plan. The authors express their sincerest appreciation to Ms. **Candis Harbison** for her initial review, comments, patience, and understanding during the preparation of this revision. Sincere appreciation is also expressed to Mr. **James Barkuloo** for his professional contribution to the review and completion of the revision. A very special thank you to Ms. **Linda Chafin** of Florida Natural Areas Inventory for working her magic as an editor, reviewer, and biologist and to Mr. **Jon Blanchard** of The Nature Conservancy for his review and comments. Mr. **Michael Brim**, Mr. **Joseph McLernan**, Mr. **Charles Yautz**, Dr. **Neil Lamb**, and Ms. **Candis Harbison** served as reviewers from the BEST Steering Committee. The authors appreciate the time and effort that these reviewers expended in making this a better document and placing the stamp of BEST on it**. The members of BEST and BEST, Inc. express their sincere appreciation to the Northwest Florida Water Management District for support in printing this document.**

The St. Andrew Bay Environmental Study Team

The St. Andrew Bay Environmental Study Team (BEST) has met since 1987 to share information regarding the natural resources of the St. Andrew Bay ecosystem and to address cumulative concerns for the ecological integrity of the system. The mission and goals of BEST are stated in ecological terms. The mission of BEST is to evaluate the status of the St. Andrew Bay ecosystem, identify problems, and initiate corrective actions where necessary. The goal of BEST is to maintain and restore a healthy St. Andrew Bay ecosystem for the benefit of all people. Efforts to achieve that goal involve obtaining information regarding the biological, chemical, and physical components of the ecosystem through original research and literature summaries, providing that information to the public and decision makers, and improving coordination and communication between those responsible for the management of natural resources of the ecosystem. BEST is not an adversarial or advocacy organization. It provides information and recommendations pertinent to informed decision-making.

Membership in BEST is free and is available to any interested citizen or group that is interested in the management of the St. Andrew Bay ecosystem for the benefit all the people. BEST has no formal corporate structure, bylaws, policies, or rules to encumber the achievement of its mission, and members serve as volunteers. The only officer in BEST is the Chairperson who is selected by the Steering Committee each year. The Chairperson serves as the spokesperson for BEST, chairs the general membership meetings, and chairs the meetings of the Steering Committee. General membership meetings are held six times each year in January, March, May, July, September, and November. Members of BEST include representatives of federal agencies, state agencies, academia, industry, local government, citizen's organizations, and individuals.

The Steering Committee of BEST manages the activities of BEST and meets every other month. It consists of the Chairperson of BEST, the Chairperson from each subcommittee, the President of BEST, Inc., and individuals who represent various interests in the community. The four standing

subcommittees of BEST provide a means for achieving the goals of BEST. Membership on a subcommittee is open to anyone interested in the subject of the subcommittee, and all members serve as volunteers. The standing subcommittees of BEST are the Natural Resources, Education & Public Outreach, Contaminants and Stormwater, and Growth Management.

St. Andrew Bay Environmental Study Team, Inc. (BEST, Inc.)

BEST, Inc., by nature of its corporate status, bylaws, and organization, is an integral yet separate part of BEST. BEST, Inc. is a Florida not-for-profit, 501 (c) (3) corporation with a complete slate of officers and must comply with the rules of the State of Florida that govern such corporations. The by-laws of BEST, Inc. include a statement of purpose as follows. The St. Andrew Bay Environmental Study Team, Inc. is dedicated to charitable, scientific, and educational purposes in support of its mission to evaluate the status of the St. Andrew Bay ecosystem and its watershed (including all connecting bays, bayous, and waterways and pertinent uplands that drain into it) to identify any problems, and to initiate and implement corrective action. The Board of Directors of the corporation consists of a President, Treasurer, and Secretary. The Board of Directors, with the approval of the membership, have set the policies of the corporation. Meetings are held at least once each year and more often as needs arise. Minutes are recorded for each meeting. BEST, Inc. serves to receive donations and grant money, seeks such sources of funding, and administers those funds to fulfill the Action Plans of the ecosystem management plan.

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Cover Photograph: Sandhills xeric upland community (High Pine = longleaf pine-wiregrass) on the Econfina Creek Water Management Area taken by Edwin J. Keppner, December 1999.

Table of Contents

Summary

This report is the result of the volunteer efforts of the authors and the members of the St. Andrew Bay Environmental Study Team (BEST) and the St. Andrew Bay Environmental Study Team, Inc. (BEST, Inc.). The report provides a summary of the quality of the environment provided by the St. Andrew Bay ecosystem to the citizens of the ecosystem and describes actions considered important in conserving and preserving a part of the natural ecosystem as the human population of the system increases. It is based upon "A Look to the Future. A Management Plan for the St. Andrew Bay Ecosystem" that was printed in 1998 and the Surface Water Improvement Management (SWIM) plan produced by the Northwest Florida Water Management District in the year 2000. The purpose of the report is to revise and bring to date the actions accomplished for each of the Action Plans in "A Look to the Future" and to serve as an adjunct to the SWIM plan.

The report begins with a discussion of the perspective of BEST and BEST, Inc. regarding ecosystem management, the definition of an ecosystem, and the components of an ecosystem. The remainder of the report consists of five sections each describing a component of the ecosystem, the St. Andrew Bay estuarine system, and Action Plans directed at providing information necessary to the management of the St. Andrew Bay ecosystem to maintain the functions of that system. Bay County is provided special attention because it constitutes about two thirds of the ecosystem and contains the entire St. Andrew Bay estuarine system within it's boundaries. The emphasis is on the living components of the ecosystem, because the SWIM plan is directed primarily at the maintenance of surface and ground water quality in the ecosystem.

The sections of the report are not intended to be a thorough examination of each characteristic but to provide general information and sources of more specific information for the interested reader. The emphasis on the living components of the ecosystem are directed at obtaining a more complete understanding of the distribution of natural biotic communities and species of plants and animals of interest and addressing fragmentation of the ecosystem in relation to the expanding human population.

The Action Plans were developed to address the aspects of each component of the ecosystem that are considered priority components. Seagrass beds and wetlands receive special consideration as do those species in the ecosystem that are protected, rare, or endemic to the ecosystem. Linking the public lands in the ecosystem and conserving or preserving sensitive biotic communities is also a priority of the report. The growth management process is identified as the primary method of implementing the plan. Each Action Plan begins with a description of the actions that have been completed pertaining to that particular Action Plan since the printing of "A Look to the Future" with additional information as seemed appropriate. This is followed by a description of the action to be taken, followed by background information, followed by a strategy to complete the action, and followed by a description of the expected benefits. A few Action Plans also contain a section for monitoring the results of the action.

The following table is a summary of the Actions Plans in the report and the major component of the ecosystem to which they apply.

Summary of the Action Plans in Relation to the Components of the Ecosystem

Maintenance & Restoration of the Living Components	**Maintenance & Restoration of Specific Biotic Communities**	**Maintenance & Restoration of Non-living Components**	**Implementing the Ecosystem Management Plan**
BD1. Species Diversity	SG1. Monitor Seagrass Beds	A1. Determine Air Quality	IM1. Coordinate Growth Management Plans
BD2. Survey of Finfishes in St. Andrew Bay	SG2. Protect Seagrass Beds	CC1. Sediment Chemical Contaminant Monitoring	IM2. Ecosystem Management & Comprehensive Plans
BD3. Assess Land	SG3. Restore Seagrass Beds	CC2. Evaluate Dioxin Compounds	IM3. Land Planning & Transferable Development Rights
BD4. Identify & Map Corridors Between Land	SG4. Restore West Bay Seagrass Beds	CC3. Monitor Biological Organisms	
BD5. Primary Tributaries to St. Andrew Bay	SG5. Educate about Seagrass Beds	CC4. Restoration of Martin Lake	
BD6. Freshwater Inflow to North Bay	SG6. Pier & Dock Construction	CC5. Restoration of Watson Bayou	
BD7. Restore Audubon Island	W1. Wetlands Inventory	CC6. Restoration of Massalina Bayou	
BD8. State Owned Submerged Land Assessment	W2. Wetland Restoration and Preservation	CC7. Assessment of Lynn Haven Bayou	
BD9. State Owned Lands Policy	W3. Vegetative Buffers for Wetlands & Waters	PD1. Cumulative Assessment of Point Source Discharges	
BD10. Mitigation Bank for the Ecosystem		PD2. Assimilative Capacity of St. Andrew Bay	
BD11. Grand Lagoon Bridge Repalcement		ST1. Maintenance of Stormwater Facilities	
PS1. Assess Imperiled Species of Plants		ST2. Assess Treatment Pond Sediment Quality	
PS2. Guidelines for Protected Species, Participation		ST3. Retrofit Stormwater Infrastructure	
PS3. Assess Imperiled Species of Animals			

PS4. Preserve the Panama City Crayfish			