



CHNEP Technical Advisory Committee

Thursday February 12, 2015

9:30 am – 2:45 pm

Morgan Family Community Center

6207 W. Price Blvd, North Port, FL

Please RSVP for TAC Meeting & Pizza Lunch at: <http://doodle.com/c9k52m74wk9cbmhg>

AGENDA

Networking & Coffee 9:15 am – 9:30 am

1. Call to Order and Introductions — Keith Kibbey, Co-Chair
2. Agenda Additions or Deletions — Keith Kibbey, Co-Chair
3. Public Comments on Agenda Items — Keith Kibbey, Co-Chair
4. Consent Agenda — Keith, Co-Chair (page 3)
Consider all items together unless a motion is made to pull any item from the Consent Agenda.
 - a. TAC October 9, 2014 Meeting Minutes (page 3)
Action Item: Approve the minutes of the October 9, 2014 TAC meeting.
 - b. CHNEP FY16 Public Outreach Grant Guidance Document (page 11)
Action Item: Recommend that the Management Conference approve the Public Outreach Guidance Document.
 - c. CHNEP 2014 Advocacy Summary Report (page 23)
Action Item: Recommend that the Management Conference accept the 2014 Advocacy Tracking Report.
5. CHNEP Draft FY16 Workplan Discussion — Lisa Beever, CHNEP (page 35)
Action Item: Recommend Management Conference direct staff to provide the CHNEP draft Workplan budget to the City of Punta Gorda for inclusion in the City's draft budget.
6. CHNEP Research Needs Inventory — Lisa Beever, CHNEP (page 87)
Action Item: Recommend that the Management Conference direct staff to issue the Research and Outreach Needs Inventory survey, for completion by April 6, 2015.
7. CHNEP Restoration Needs Plan — Lisa Beever, CHNEP (page 101)
Action Item: Recommend that the Management Conference adopt the CHNEP "Restore the Balance" algorithms and resulting targets and direct staff to incorporate appropriate additions from partners' needs inventories and implement a methodology to identify priorities for funding.
8. Southwest Florida Oyster Working Group Subcommittee Update — Andrea Graves, TNC (page 165)

Lunch 11:45 am – 12:15 pm In-house – Please RSVP at: <http://doodle.com/c9k52m74wk9cbmhg>
Pizza Delivered (\$5 donation suggested)

9. Caloosahatchee River SAV Targets Working Group – Judy Ott, CHNEP (page 167)
10. Caloosahatchee River Visioning Update — Phil Flood, SFWMD (page 185)
11. Florida Water and Land Conservation Initiative Amendment 1 Update — Debi Osborne, Conservation Foundation of the Gulf Coast, CHNEP (page 187)
12. RESTORE Update — Liz Donley, CHNEP (page 193)
13. CHNEP Program Report – Staff, CHNEP (page 205)
 - a. Watershed Summit Proceedings
 - b. Program Deliverables (page 206)
14. Member Comments — Keith Kibbey, Co-Chair
15. Public Comments — Kibbey, Co-Chair
16. Next Meeting's Topics, Location and Date — Thursday April 9, 2015 – Bartow
17. Adjourn — Keith Kibbey, Co-Chair

THIS MEETING IS OPEN TO THE PUBLIC

Two or more members of the Everglades West and Caloosahatchee Basin Working Groups may be in attendance and may discuss matters that could come before the respective body.



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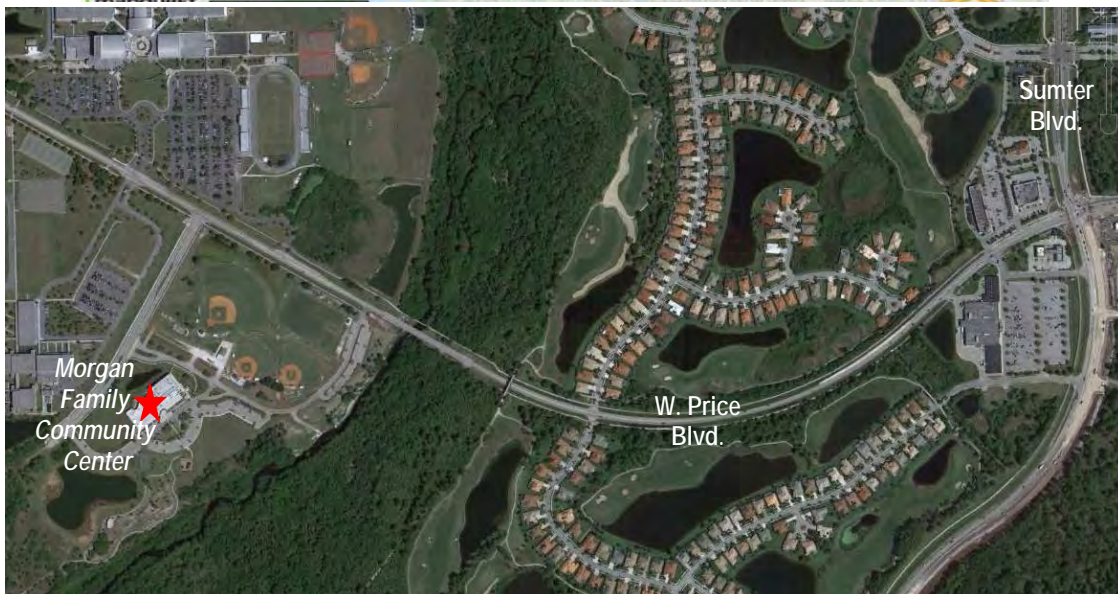
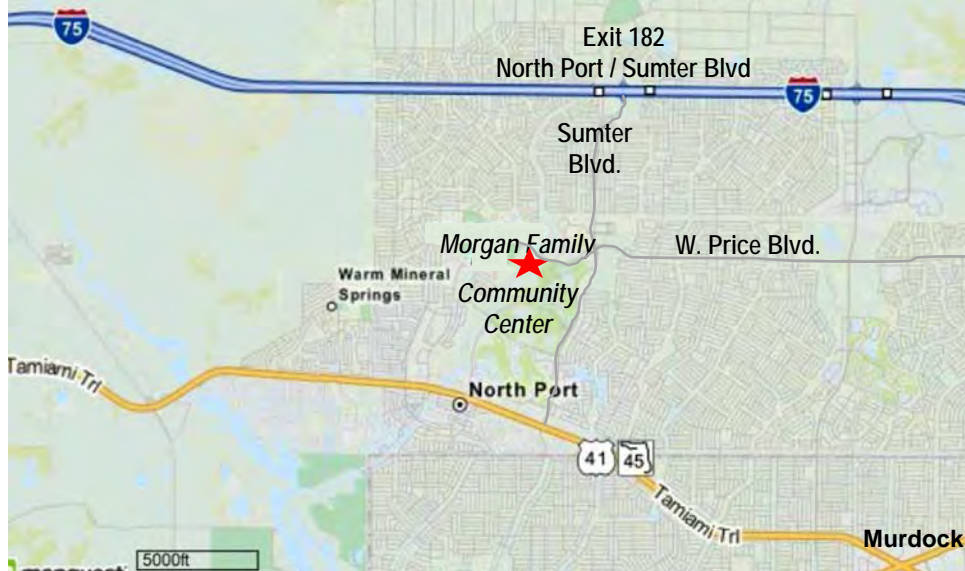
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DIRECTIONS TO MORGAN FAMILY COMMUNITY CENTER

Simplified directions: For more detailed directions, please consult a mapping program.



From North, South, East or West via I-75:

- Take I-75 to North Port Exit 182 for Sumter Blvd./Co. Hwy 771 & exit south towards North Port.
- Take Sumter Blvd./Co. Hwy 771 south ± 2.0 miles to W. Price Blvd. & turn right (west) on W. Price Blvd.
- Take W. Price Blvd. west ± 1.0 mile drive into Morgan Family Community Center on the left (south).
- Follow the Morgan Family Community Center drive past the baseball fields to the Community Center building & follow the CHNEP signs to the meeting room.

From North, South, East or West via US 41:

- Take US 41 to North Port to Sumter Blvd. & turn north on Sumter Blvd.
- Take Sumter Blvd. north ± 2.4 miles to W. Price Blvd. & turn left (west) on W. Price Blvd.
- Take W. Price Blvd. west ± 1.0 mile drive into Morgan Family Community Center on the left (south).
- Follow the Morgan Family Community Center drive past the baseball fields to the Community Center building & follow the CHNEP signs to the meeting room.

4A. MINUTES OF OCTOBER 9, 2014 TAC MEETING

The October 9, 2014 TAC draft meeting minutes are attached.

Recommendation: Motion to approve the minutes from October 9, 2014 TAC meeting.

Attachment: Draft minutes for the October, 2014 TAC meeting.



Draft Meeting Minutes
Charlotte Harbor National Estuary Program
Technical Advisory Committee
October 9, 2014
Punta Gorda, FL

MEMBERS PRESENT

| | |
|------------------|--|
| Thomas Hecker | Charlotte Harbor Environmental Center |
| Keith Kibbey | County - Lee |
| Greg Blanchard | County – Manatee |
| Hans Zarbock | County – Polk |
| Jon Perry | County – Sarasota |
| Melynda Brown | FL Department of Environmental Protection |
| Dave Blewett | FL Fish & Wildlife Conservation Commission |
| Betty Staugler | FL Sea Grant – Charlotte County |
| Shelley Thornton | Mosaic |
| Kellie Dixon | Mote Marine Laboratory |
| Rick Bartleson | Sanibel Captiva Conservation Foundation |
| Lizanne Garcia | Southwest FL Water Management District |
| Cynthia Ovdenk | U.S. Army Corps of Engineers |

ALSO PRESENT

| | |
|------------------|--|
| Lisa Beever | Charlotte Harbor National Estuary Program |
| Chris Anastasiou | Southwest FL Water Management District |
| James Douglass | FL Gulf Coast University |
| Carter Henne | Sea and Shoreline |
| Maran Hilgendorf | Charlotte Harbor National Estuary Program |
| Charles Kovach | Water Keeper |
| Don McCormick | Southwest FL Regional Planning Council |
| Chrissy Mehle | AMEC |
| Julie Neurohr | FL Department of Environmental Protection |
| Kathleen Okeife | FL Fish & Wildlife Conservation Commission |
| Judy Ott | Charlotte Harbor National Estuary Program |
| Megan Pikelli | U.S. Army Corps of Engineers (Volunteer) |
| Pete Quasius | Audubon |
| Michelle Sims | Mosaic |
| Ross Wherry | Caloosahatchee Water Keeper |

1. **Call to Order and Introductions** — Betty Staugler, Co-Chair
 Ms. Staugler called the meeting to order at 9:30 am.
2. **Agenda Additions or Deletions** — Betty Staugler, Co-Chair
 Dr. James Douglass requested to add an item to the agenda to discuss submerged aquatic vegetation and benthic algae problems in the Caloosahatchee River. The item was inserted in the agenda between Items 4 and 5.
3. **Public Comments on Agenda Items** — Betty Staugler, Co-Chair
 No public comments were offered.
4. **TAC July 17, 2014 Meeting Minutes** — Betty Staugler, Co-Chair

JOHN PERRY MOVED, SECONDED BY MELYNDA BROWN TO APPROVE THE MINUTES FROM JULY 17, 2014 TAC MEETING. THE MOTION PASSED UNANIMOUSLY.



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4a. Item Addition: Submerged Aquatic Vegetation and Benthic Algae Problems in the Caloosahatchee River — James Douglass, FGCU

Dr. Douglass' presentation raised 3 questions for TAC consideration regarding ecology and conservation of estuarine ecosystems in southwest FL: 1) Why isn't SAV recovering well in the meso- and oligohaline Caloosahatchee? 2) Is SAV loss in the Caloosahatchee affecting manatee movements and mortality? 3) How bad is our benthic algae problem and what can we do to manage it? High salinity episodes in the upper estuary killed *Vallisneria* in 2000 and it is not recovering noticeable, possibly due to lag time between stress and response. SAV stressors include grazing by fish, snails and manatees, as well as sediment instability. The impact of grazing could be tested by implementing SAV restoration with grazer exclusion fences. Because of lack of SAV for forage in the upper river, manatees travel down river from the warm water refuge of the Orange River to San Carlos Bay where SAV is more prevalent, passing through a congested area of the river, causing potentially higher mortality. The FWC manatee mortality database could be compared to SAV monitoring and mapping data to look for correlations. Southwest FL estuaries have a variety of macroalgae, epiphytes and benthic microalgal mates which can negatively impact seagrasses. Benthic algae abundance varies by place and time in southwest FL and over abundant algae indicates excess nutrient loading. Additional monitoring is needed to adequately assess benthic algae conditions, causes and effects on SAV.

Discussion ensued, including:

- Need to consider flow, sediment resuspension and turbidity impacts and the relationship between high numbers of freshwater turtles as grazers and alligator populations and flow.
- Need additional research on which species of *Lyngbia* are present because the species have different salinity tolerances.
- Need to separate the effects of high color, nutrients and salinity and how the effects get pushed downstream with higher flows.
- *Vallisneria* prefers salinity ranging from 0 – 10 ppt and salinities >15 ppt can be lethal.
- Apple snails tolerate salinities up to 10 ppt.
- Need to look at 1993 and historical SAV coverage in the Caloosahatchee River; not sure why *Vallisneria* isn't observed in the tidal Peace and Myakka rivers.
- Need to look at sediment cores for historical estimate of benthic algae, diatoms and SAV.
- Need to look at natural systems near the Caloosahatchee and mimic those conditions.
- Next step is to participate in CHNEP Caloosahatchee River SAV Targets Science Forum in December.

No motion requested, as the item was for information and discussion only.

5. CHNEP Research, Restoration and Outreach Needs Inventories — Lisa Beever, CHNEP

The CHNEP Comprehensive Conservation Management Plan (CCMP) Priority Action SG-N calls to "Update comprehensive inventories of research, restoration, legislative and outreach needs." In 2007, the research needs inventory was developed in concert with the 2008 CCMP Update. The Management Conference was surveyed and a comprehensive list of research and monitoring priorities was developed. The list has served CHNEP well to identify projects for Workplan and outside grant funding.

Discussion ensued, including:

- It is time to update the research, restoration and outreach needs surveys.
- Better tools are now available for conducting the surveys and compiling the information.
- Lisa will send a draft as survey for Management Conference approval in February and March, issue the final survey, the results will be reviewed in April and the final list compiled in May.
- It is important to identify urgent needs, performance measures and think creatively.
- Question about how the needs will be ranked? Commonalities among Management Conference committees will be an key factor in the rankings.



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- Priority needs will be used to pursue grants
- Question about ideas not included on the list? Can add needs to the survey.
- There will be 2 steps: making the list and then prioritizing the list.
- Some projects could be implemented by staff and partners.
- It would be helpful to reinstate the Research and Restoration Partners Project grants.
- As the budget increases, the RRPPs will be reinstated.

No motion requested, as the item was for information and discussion only.

6. Mosaic Permitting Updates and Offsite Mitigation Projects — Shelley Thornton, Mosaic

A permitting update was provided on the three (3) proposed Mosaic projects: Ona and DeSoto which are proposed new mines to replace mines slated to mine out and close, as well as Wingate East, which is an extension of the currently operating Wingate Mine. The proposed projects are located in Hardee, DeSoto and Manatee counties, respectively. In addition to the onsite mitigation required by the permitting agencies, Mosaic will also provide offsite mitigation projects of high ecological value in their respective watersheds. The offsite mitigation projects will implement priority actions as identified in the Charlotte Harbor National Estuary Program's Comprehensive Conservation & Management Plan (CCMP).

Discussion ensued, including:

- Compensatory mitigation is provided by Mosaic through offsite and onsite mitigation.
- The DeSoto mine offsite mitigation focuses on Horse Creek enhancements through restoring riparian wetlands and native habitat corridors, protecting headwaters and re-establishing more natural seasonal flows.
- The Wingate East Mine permit is still being reviewed.
- The Ona Mine offsite mitigation includes bay swamp creation, Payne Creek restoration and Bowlegs Creek enhancements.
- The offsite mitigation will create, enhance and/or restore over 300 acres of herbaceous wetlands, over 900 acres of forested wetlands and over 70,000 linear feet of stream channel.
- Question about what if adequate offsite mitigation can't be found? The acres of mined lands would have to be reduced.
- Question if maintenance of mitigation is required? Yes.
- See presentation for additional details.

No motion requested, as the item was for information and discussion only.

7. FDEP Estuarine Numeric Nutrient Criteria Changes & Draft Impaired Waters —Julie Neurohr, FDEP

An FDEP public meeting regarding proposed changes to estuarine numeric nutrient criteria, include some sections of the CHNEP estuaries, was held August 26, 2014 in Palm Bay. The key proposed changes in Section (d) Charlotte Harbor/Estero include: a) San Carlos Bay criteria were separated from Caloosahatchee River; b) Caloosahatchee River was divided into Upper, Middle and Lower; c) TP, TN and Chl *a* criteria expressed as long term averages (LTA) are not to be exceeded in any year; d) TP, TN and Chl *a* expressed as annual geometric (AGM) means shall not be exceeded more than once in 3 year; and e) TP and Chl *a* criteria expressed as LTA are defined for San Carlos Bay, Upper Caloosahatchee, Middle Caloosahatchee, Lower Caloosahatchee. The draft FDEP supporting document *Numeric Nutrient Criteria for Estuaries Addressed in the August 1, 2013 Report to the Governor and Legislature* is available at www.chnep.org. An FDEP public meeting regarding the draft Verified Impaired and Delist waters, including some waters within the CHNEP, was held August 24, 2014 in Fort Myers. The proposed estuarine numeric nutrient criteria changes and draft impaired and delisted waters were presented.



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Discussion ensued, including:

- Over the last 3 years, FDEP adopted Numeric Nutrient Criteria (NNC) for the majority of the state's estuaries, including Charlotte Harbor and the Caloosahatchee Estuary.
- NNC help maintain community health and were developed based on a reference water approach.
- Water quality and biological data were evaluated.
- Question was asked about how the sections of the Caloosahatchee River were defined. The methods are provided in the technical document available on the FDEP website.
- Comments were due October 13, 2014.
- Question was asked about including correct WBID (water body ID) boundaries. Many discrepancies were resolved.
- The SWFWMD contacted FDEP to ensure all CCHMN water quality data were included in the analyses.
- The draft verified impaired waters list for Charlotte Harbor was presented.

No motion requested, as the item was for information and discussion only.

8. CHNEP Outreach Approach — Maran Hilgendorf, CHNEP

The Charlotte Harbor National Estuary Program fulfills its *Comprehensive Conservation and Management Plan* (CCMP) by focusing on research, restoration and outreach. Outreach as defined by CHNEP is comprehensive and includes things such as the CCMP itself and the Charlotte Harbor Watershed Summit. At the CAC meeting on in February 2011 and again in August 2013, the committee accepted the CHNEP Strategic Communication Plan. At the CAC meeting on February 16, 2011, the committee accepted the CHNEP Financial Acknowledgement Policy. It categorized financial support received as financial partners, sponsors and donors. As of the 2012 calendar, sponsors were given ad space for their donation. At the CAC meeting on August 16, 2013, the CAC asked that the policy be expanded to consider accepting advertisements, specifically for *Harbor Happenings*.

Discussion ensued, including:

- CHNEP is funded primarily through EPA, through their host agency; NEPs funding strategies vary around the country; CHNEP is a governmental agency but TBEP is an independent special district; EPA requires an 80% match, CCMP and Management Committees.
- The first CHNEP CCMP was adopted in 2000
- The CHNEP watershed is estimated to have a population of over 1,000,000.
- 7 school district receive Adventures in the Charlotte Harbor Watershed.
- There are 5 science fairs in the region.
- Amy Hoyt from Lee County GIS created the CHNEP special places map.

No motion requested, as the item was for information and discussion only.

9. CHNEP Program Report — Staff, CHNEP

CHNEP activities for the past quarter will be presented, including: a) i-Tree Training; b) FY14 NEPORT Habitat & Restoration Projects; c) Watershed Summit Proceedings; d) Caloosahatchee River SAV Targets; e) Working Group; f) Southwest Florida Oyster Working Group; g) Program Deliverables

No motion requested, as the item was for information and discussion only.



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10. Member Comments — Betty Staugler, Co-Chair

Discussion ensued, including:

- Keith Kibbey suggested CHNEP offer a second CDOM (color dissolved organic matter) workshop to bring past and new members up-to-date on science advances since the 2007 CDOM workshop.
- James Douglass suggested that additional studies be conducted about light attenuation relationships to SAV in San Carlos Bay and the Tidal Caloosahatchee River and Estuary.

14. Public Comments — Betty Staugler, Co-Chair

No public comments were offered.

15. Next Meeting Topics, Date and Location — Betty Staugler, Co-Chair

Thursday February 12, 2015 in North Port.

16. Adjourn — Betty Staugler, Co-Chair

Ms. Staugler adjourned the meeting at 1:00 pm. Members were offered a tour of the new CHNEP offices at the Punta Gorda City Hall.

4B. CHNEP FY16 PUBLIC OUTREACH GRANT GUIDANCE

The Guidance Document prepared for those who wish to submit a Public Outreach Grant application for funding consideration in FY16 is provided for Management Conference review. Members of the CAC Grants Committee provided thoughtful comments and improvements to the Guidance Document. Changes to note include:

- In FY15, the most substantial change was to emphasis water quality outreach since EPA provides the funds for these grants.
- Because the FY16 workplan is not yet approved, the budget for public outreach grants as stated in this guidance document is that it is “anticipated to be \$30,000.”
- All references to SWFRPC were changed to the City of Punta Gorda and contracts were changed to purchase orders.
- Only one draft and final application are required and applicants have the option of mailing hard copies or sending PDF versions through a secure network such as DropBox.
- All applicants will be required to complete PDF versions of the budget and transmittal forms. (These are not yet finalized. The draft guidance document includes partially developed forms. The final forms will require certain fields be completed and will calculate formulas.)
- In 2013, the most current information available, volunteer labor was valued at \$22.55/hour by Independent Sector (http://independentsector.org/volunteer_time). This is up from \$22.14 in 2012.
- Once applications are approved by the CAC and the Program Director, applicants must be recognized by the City of Punta Gorda as a vendor. If they aren’t already in the system, a W-9 form will be required. Once the applicant has a vendor number, staff will process a purchase order. The City will generate a purchase order from this requisition which staff will provide to each applicant. No other action will be required to obligate the funds.
- The project must be completed so that a grant report and invoice are received by CHNEP no later than August 31. A progress report is required by March 31.

The FY16 Public Outreach Grant schedule is:

Action

Approve grant guidance document
 Post guidance and promote grants
and announce in Florida Administrative Weekly
 Deadline for 1 copy of draft application for staff review
 Deadline for final application for CAC Grants Committee review
 CAC Grants Committee meets by
 CAC meeting

FY16 Schedule

Feb-March 2015*
 April 2015

 September 2, 2015
 September 14, 2015
 October 2, 2015
 October 21, 2014

* These steps were delayed from earlier years because of the CHNEP office move and change of fiscal host on October 1, 2014.

With the change in the procedure as of FY06, applications are considered by the CAC Grants Committee then by the CAC then by the Program Director. The applications are posted online and members of the Management Conference are asked to provide comments prior to the CAC Grants Committee meeting. As of the FY16 cycle, easier file-sharing services will be used instead of FTP, probably DropBox.

Additional information about the number of applications received and funded each year and descriptions of the projects are at www.CHNEP.org.

Recommendation:

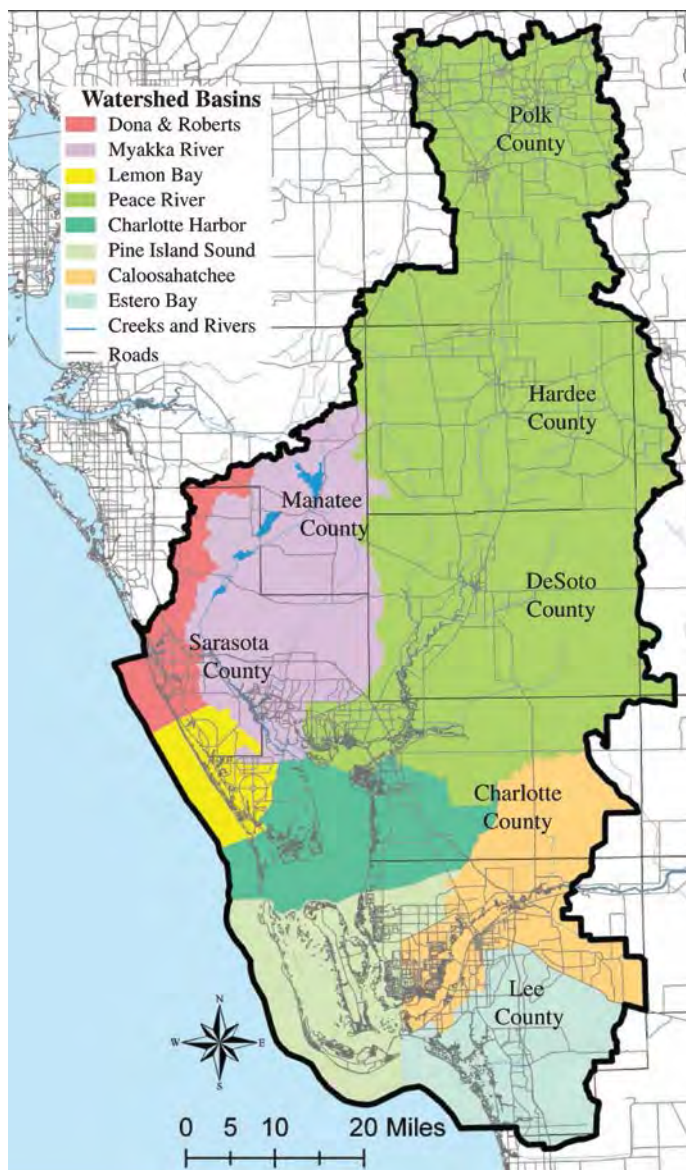
Motion to recommend that the Management Conference approve the FY16 Public Outreach Grant Guidance Document.

Attachment:

Draft CHNEP FY16 Public Outreach Grant Guidance Document



CHARLOTTE HARBOR NATIONAL ESTUARY PROGRAM



The Charlotte Harbor National Estuary Program is a *partnership* that protects the natural environment in Florida from Venice to Bonita Springs to Winter Haven. This partnership gives citizens, elected officials, resource managers and commercial and recreational resource users in the 4,700-square-mile watershed a voice to address diverse resource management concerns, including fish and wildlife habitat loss, water quality, water flow and stewardship. The watershed includes all or portions of Charlotte, DeSoto, Hardee, Lee, Manatee, Polk and Sarasota counties.

Request for Public Outreach Grant Applications

To further the partnership to protect and restore the greater Charlotte Harbor estuarine system and watershed, the CHNEP offers Public Outreach Grants to citizens, organizations, businesses, government agencies, schools, colleges and universities. The maximum grant request is \$5,000 but most applications are funded in the \$2,500 to \$3,000 range. *This document provides guidelines to develop Public Outreach Grant applications for projects that may begin as early as November 2015.*

Deadlines

Both application deadlines must be met for an application to be considered.

Draft applications must be received by 5 P.M. on September 2, 2015.

Final applications must be received by noon on September 14, 2015.

The CHNEP also offers micro-grants (up to \$250) year round.

Additional information about the CHNEP is posted at www.CHNEP.org.

Charlotte Harbor National Estuary Program

326 West Marion Ave, Punta Gorda, FL 33950
 941/575-3374 ~ toll-free 866/835-5785 ~ www.CHNEP.org
 Maran Hilgendorf, Communications Manager ~ maran@chnep.org
 Public Outreach Grants are managed by the person in this position.

Important Dates

Wednesday, September 2, 2015 by 5 p.m.: One copy of the complete *draft* application is due in the Program Office. The CHNEP Communications Manager will review the application for completeness and provide comments to the Applicant regarding completeness and recommended modifications or revisions.

Monday, September 14, 2015 by noon: One copy of the *final* application is due in the Program Office. The transmittal form *must* include be signed by the official authorized to negotiate a purchase order for the Applicant.

NOTE: Both application deadlines (Sept. 2 and 14) must be met for an application to be considered. Applications may be delivered/mailed to CHNEP *or* sent as a PDF through DropBox. (This is a free service that lets you securely share files. Go to www.dropbox.com to learn more.) Applications will *not* be accepted or considered if they are received after deadlines or if they are submitted by telegram, facsimile, email or telephone.

November 2015: Funding decisions will be announced by November 2015. Applications that are approved may begin once they are recognized as a vendor by the City of Punta Gorda, the CHNEP's fiscal host, and a purchase order is signed by both parties. Additional guidance will be provided. The Applicant will have 90 days from notification of award to submit a signed purchase order.

Thursday, March 31, 2016: Applicants are required to submit at least one progress report by March 31 to document the work accomplished to date.

Wednesday, August 31, 2016: Applicants shall perform all services necessary to accomplish the work specified in the purchase order scope of work so the final report and invoice (on letterhead) are received by August 31. (The scope of work is the Public Outreach Grant application.) Applicants are reimbursed funds once a final report and an invoice for work accomplished are accepted.

Application Checklist

Please read through this guidance document!

Each application must include, in this order:

1. Transmittal form with abstract (see pages 5 and 9) signed by an official *authorized to negotiate a purchase order for the Applicant*.
2. Budget form (see pages 5, 7, 8 and 10)
 The transmittal and budget forms are included in this packet and can also be downloaded at www.CHNEP.org. The application must include the PDF version of the forms.
3. *On a new page*, begin four-point essay marked with headings from "I. Project Rationale, Geographic Area and Common Problems Addressed" through "IV. History and Personnel" (see pages 5 to 8).
4. Appendix: One-page resume for each member of the proposed project team (page 8).
5. Appendices may also include items such as:
 - Maps of the project site (see pages 5 to 7).
 - Letters of support (see page 5). If a service is being provided, it is strongly advised to include letters of support from those who will be targeted, such as school boards, school principals, etc., and with written confirmation that these partners are willing to financially support the project in any way specified in the application (see page 8).
 - Additional support material (see page 5).

Essential Facts About Public Outreach Grants

The CHNEP has supported many types of initiatives with Public Outreach Grants but all have furthered the Program's plan to protect the natural environment from Venice to Bonita Springs to Winter Haven. The descriptions of each project supported, the number of applications received each year and the applications funded each year are posted at www.CHNEP.org. Please refer to this information if you are uncertain if CHNEP has provided prior grant support to your organization. The CHNEP has been able to support approximately half the applications received in most years.

Who May Apply: Any citizen, organization, business, government agency, school, college or university may apply for a Public Outreach Grant but the project *must* occur within the greater Charlotte Harbor watershed. In this document, the word *Applicant* is used to refer to the individual, organization, business, government agency, school, college or university that is submitting the Public Outreach Grant application. An Applicant may submit more than one application but each must be independent and complete on its own.

All applications are subject to the conditions specified herein. **Applications that do not comply with the following conditions are subject to rejection.** On any purchase order resulting from this application, the Applicant shall hold and save the Program, its officers, agents and employees harmless against claims by third parties resulting from the vendor's acts.

Review Process: Applications *received* (not postmarked) by the deadline of 5 p.m. on September 2 will be reviewed by the CHNEP Communications Manager who may then recommend modifications to the application. Applicants may consider the recommendations and revise the application. The CAC Grants Committee will review Public Outreach Grant applications that are received on September 14. Their funding recommendations will be forwarded to the CAC and then to the Program Director for final approval by November 2015. Applications that are approved may begin once they are recognized by the City as a vendor and a purchase order is signed by both parties. The Applicant will have 90 days from notification of award to complete the purchase order.

The CAC Grants Committee considers if the Public Outreach Grant application:

- Helps to fulfill the Program's *Comprehensive Conservation and Management Plan* (CCMP) by producing a desired result/benefit that addresses at least one of the common priority problems (see page 6 of this document). Applications will be more favorably reviewed if the project addresses a water quality outreach issue.
- Benefits those who live within the CHNEP study area.
- Has demonstration value to the community.
- Informs and educates the public. This is important of all projects.
- Has long-term applicability and addresses resource management issues.
- Increases awareness of the CHNEP and its purposes.

The CAC Grants Committee also considers if the Applicant:

- Follows the guidelines as established in this application package.
- Has been previously supported. All things being equal, applications that have *not* been previously supported by the CHNEP are more likely to be supported than those that have previously received financial support from the Program.
- Has successfully completed previously funded applications. Applications are less favorably considered if the Applicant has projects that are not in good standing.

- Requests support for the purchase of equipment, unless the equipment is integral to an education program. The Committee often does not favorably review applications that are for these types of expenses.
- Allows public access to the site if the project proposes property improvements.
- Requests support primarily for staff. Applications tend to be less favorably considered if the budget is primarily for salaries.

Public Outreach Grants *cannot* be used for the following:

- Improvements on private property or projects that personally benefit the Applicant, such as purchases that remain the property of an individual and are only available for private use.
- Fundraising activities.
- Reprinting of existing material unless part of a larger educational program.
- Subsidizing organization's normal business operations.
- Refreshments or T-shirts, hats or other promotional items and clothing.
- Completed projects.

Funding: The maximum Public Outreach Grant award is \$5,000 but most applications are funded in the \$2,500 to \$3,000 range. Matching funds are *not* required; however, cooperative funding is encouraged. In the application, please list the sources and amounts of support provided for any match received to complete this application so **that the full cost of the project is known**.

Funding is provided through a federal source (Clean Water Act, Section 320 CFDA 66.456). Each applicant must be capable of meeting federal guidelines for expending funds. For example, funding may *not* be used to purchase refreshments or produce T-shirts, hats or other promotional items and clothing. Equipment purchases and subcontracts must also follow federal guidelines.

Reports/Invoices Required: Applicants shall perform all services necessary to accomplish the work specified in the purchase order scope of work so the final report and invoice on letterhead are received by August 31. (The scope of work is the Public Outreach Grant application.) Applicants are required to submit at least one progress report by March 31 to document the work accomplished to date. **Applicants are reimbursed funds once the final report and invoices for work accomplished are accepted.** Payment will not be made until the final report and an invoice has been received and accepted. Checks are made payable only to the entity specified in the purchase order. Reimbursement checks are sent from the City of Punta Gorda, the CHNEP host agency. Due to staffing schedules it may take up to 30 working days from the time the report is received and accepted for the funds to be received. Please be sure to plan accordingly.

Project Development/Publicity: The Applicant must provide opportunities to the CHNEP Communications Manager to provide input and review the progress of the project. The Applicant will provide **advance information** to the CHNEP Communications Manager regarding any planned events, promotion or activity and allow the staff access to the site to take photographs of the progress and completion of the project.

The Applicant must mention the Charlotte Harbor National Estuary Program in all promotional materials. The Applicant must also mention the CHNEP during any presentations and the logo must be displayed on any signs, information or materials created for this project.

What to Submit

by 5 P.M. Wednesday, Sept. 2, 2015 *and* by Noon on Monday, Sept. 14, 2015

Each application must include, in this order, a (1) transmittal form, (2) budget form, (3) four-point essay and (4) appendix of one-page resumes for each member of the proposed project team. The application may also include appendices of items such as maps of the project site, letters of support, materials used as part of the project, example of item to be replaced, etc. If a service is being provided, it is strongly advised to include letters of support from those who will be targeted, such as school boards and principals, and written confirmation that these partners are willing to financially support the project in any way specified in the application. By 5 p.m. on September 2, submit one draft copy of the application. By noon on September 14, submit one copy of the final application. **Both deadlines must be met for an application to be considered.** Additional guidance is provided on page 3 of this document in the “Review Process” section.

Format and Packaging of the Public Outreach Grant Application: Applications must be typed. The font type must be at least 12 point in size with one-inch margins. Figures and graphics may be attached as additional pages but must be clearly described in the application. If possible, please provide as a PDF file. If providing a paper application, copy on both sides of the paper, collate and paper clip pages together.

(1) Transmittal form and (2) budget form: Complete the PDF versions of the transmittal and budget forms and attach as the *first pages of the application*. The forms are available on pages 9 and 10 of this document and can also be downloaded from www.CHNEP.org. Do *not* re-create these forms. Be sure to complete both forms in their entirety. Be sure to show the full cost of the project.

The transmittal form includes the abstract or executive summary of the project. The abstract should succinctly describe the project. Limit the abstract to about 1,800 characters so the transmittal form does not exceed one page in length. Don't refer reviewers to other sections of the application.

The transmittal form submitted Sept. 14 *must* be signed by the official authorized to negotiate a purchase order for the Applicant. If the application is funded, the applicant must be recognized by the City of Punta Gorda as a vendor. A W-9 form must be provided to receive this recognition. Additional guidance will be provided.

(3) Essay: *On a new page*, begin description of the application using the following four-point outline. Begin each of the four points with the headings as defined below with roman numerals (I, II, III, IV). This outline must be followed or the application *will not* be considered for funding. The essay portion of the application should not exceed ten pages.

I. Project Rationale, Geographic Area and Common Problems Addressed

The CHNEP provides grants to help others fulfill its plan to protect the natural environment of southwest Florida, specifically in regards to habitat loss, water quality, water flow and stewardship. Succinctly describe the Applicant and how the Public Outreach Grant application supports the CHNEP's efforts to protect the estuarine system by protecting or restoring the greater Charlotte Harbor watershed. Additional guidance is listed under “Review Process” on page 3 of this document. Additional information about the CHNEP is posted at www.CHNEP.org. Be sure the essay explains:

- How awareness of the CHNEP will be furthered by this project.

- How the CHNEP watersheds will benefit from actions or changes in behavior that result from the proposed project.
- Which watershed is covered by the project, including listing the cities where the project is located and any surface waters that will be affected by the project. Projects *must* take place in the greater Charlotte Harbor watershed. A map of the project site may be included as an appendix. Maps are available at www.CHNEP.org. Be sure to also provide this information on the transmittal form.

Watersheds within the Greater Charlotte Harbor Watershed (see cover map)

- Upper Peace River watershed north of Zolfo Springs
 - Lower Peace River watershed south of Zolfo Springs
 - Tidal Caloosahatchee River Watershed east to the Franklin Locks
 - Venice/Lemon Bay/Cape Haze
 - Myakka River watershed
 - Estero Bay Watershed/Estero Island
 - Islands (other than Estero Island)
 - Charlotte Harbor proper
- How the project directly relates to and addresses at least one of the four **common priority problems** identified by the CHNEP. Be sure to also provide this information on the transmittal form. The common priority problems are:
 - **Hydrologic Alterations:** Adverse changes to amounts, locations and timing of estuarine and freshwater flows.
 - **Fish and Wildlife Habitat Loss:** Degradation and elimination of headwater streams and other habitats caused by development, conversion of natural shorelines, cumulative impacts of docks and boats, invasion of exotic species, and cumulative tank system loadings, atmospheric deposition and groundwater.
 - **Water Quality Degradation/Nutrient Enrichment:** Including but not limited to pollution from agricultural and urban runoff, point-source discharges, septic and future impacts.
 - **Stewardship Gaps:** Promote programs and methods to educate the public and enhance personal responsibility for ecosystems of the Charlotte Harbor watershed.

In the essay be sure to list the specific priority actions that this project will help fulfill. The CCMP is available at www.CHNEP.org.

II. Management Plan, Time Line and Evaluation

The Applicant shall present a project management plan that will serve to guide the work necessary to accomplish the project, including the guidelines for accomplishing the scope of work and a list of the products or accomplishments resulting from this project. Please write concisely and precisely, yet assume that the reviewers know nothing about the project.

The detailed time line, including the project start and end dates, should describe the estimated time needed to complete the project. Be realistic with time requirements. It is important that projects are expeditiously completed. The time line must demonstrate that the project can be initiated once a purchase order is signed (no earlier than November 2015) and be completed by August 31, 2016.

Identify any products and accomplishments expected as a result of this grant. Include a brief description of any planned public education or outreach materials and estimate how long any product is anticipated to be available. In other words, what is the life expectancy of the item(s) purchased or produced? Describe target audiences and the number of people the project will serve. Describe any

materials that will be developed for the project that will be transferable to other areas or organizations. Identify the amount and purpose of fees, if any will be charged, to participants. Educational projects and number of classes or field/boating trips should note the estimated number of participants expected and whether they are children or adults. If printed materials, signs or video information will be produced during the project, the number of copies that will be created and methods of distribution must be described. If an Applicant proposes any construction, it is critical that as much detail as possible is provided, such as size of construction project, itemized list of materials required, etc. A sketch of the construction project is highly recommended. Attach photographs, sketches, maps or tables as appendices. Specify any safety equipment or training that is required to accomplish the project. **In summary, provide as much specific information as possible.**

Education programs are encouraged to target both adults and children. Projects that focus primarily on children should include a description of any adult education opportunities that will be accomplished with the project. Programs that include field trips are allowed; however, the target audience, number of participants and any participant fees must be detailed. Enhancement or expansion of existing programs is permissible. Applicants are encouraged to be innovative. Consider the cost to reach each person with your project.

If a service is being provided, it is strongly advised that letters of support be included from those who will be targeted, such as school boards, school principals, etc. Describe any seasonal limitations to conducting the project, including possible impacts to endangered species. Please name any permits that will be required to conduct the project. The U.S. Fish and Wildlife Service will review any construction or earth-moving projects selected for possible impacts to endangered species.

Describe how the project will be evaluated. Examples of measurements of success include the number of people that participate in project, the distribution of materials to the target audience, the completion of a demonstration project, etc.

III. Cost/Budget and Project Partners

In addition to the completed Budget Form, the application must also *summarize* the budget, providing any additional required *justification or explanation* in the essay portion of the application. **Do not assume the reviewers will understand budget expenses without explanation.** Be sure the request and matching funds pledged equal the total cost of the project and justify all costs. Round the budget to the nearest dollar amount; do not include cents. Please explain why this grant is required by the Applicant and is not covered as an operational expense incurred by the Applicant.

The budget section will be evaluated on how clearly and accurately funding needs are described and whether costs seem justified and appropriate. Applications that have been more explicit, such as specifying possible vendors, have been more favorably reviewed. The Program Office reserves the right to offer funding for a particular phase or task, rather than funding the entire project.

Please be sure to explain the budget in the essay portion of the application and show match so that the **full cost of the project** is known. The Applicant shall provide an explicit project budget detailing the following:

- Hourly fees and the estimated percentage of time of involvement (based on a 40 hour workweek) for each paid member of the proposed project team.

- Volunteer labor: Detail the estimated number of volunteer hours and the tasks that volunteers will perform. If including volunteer labor as match, value an hour of work at \$22.55, which is the 2013 rate provided by Independent Sector (www.independentsector.org).
- Projected travel costs.
- Equipment: Detail the intended use and location of the equipment once the project is complete. The Program Office and/or the U.S. EPA reserve the right to request the return of any equipment purchased with these funds once the project is complete.
- Supplies.
- Contractual services.
- If certain activities, phases or tasks have been funded or are expected to be funded by other means, these funding sources (in-kind services, cash, etc.), specify the sources, amounts of support provided or to be provided and whether these funds are requested or secured at the time of the application submission. If requested, also state when funding decisions will be made. Be sure to explain how the project will proceed if all funding requested by others is not received.

The application shall describe what the CHNEP will be asked to provide to assist in this effort and shall describe any additional organizations or funding sources that may be used to support the proposed project. Any letters of support should be attached as an appendix. Remember, project funding may *not* be used to purchase refreshments or produce T-shirts, hats or other promotional items and clothing.

IV. History and Personnel

Describe any past grants awarded to the Applicants by the CHNEP. Applications are less favorably considered if the Applicant has projects that are not in good standing. Describe any history of the project, no matter the funding source, so that the reviewers can understand the progress made.

List the individuals who will be authorized to make representations for the Applicant, including individuals' titles, organizations represented and contact information. The specific role of each person involved in the project team shall be described. The Applicant shall *also* submit a one-page resume for each member of the proposed project team as well as resumes of any candidate subcontractors in an appendix of the application. Each resume should describe, at a minimum, education, experience and other qualifications *related to this project*. If resumes longer than one page are submitted, only the first page of the resume will be considered.

In the event the Applicant proposes to subcontractor portions of the effort, indicate how subcontractors ordering will be integrated into the management of the project. The Applicant shall list and describe the specific tasks to be performed and the specific services and support to be obtained through subcontract ordering. Applications that specify purchase ordered work, including printing, sign development, etc., have been more successful in the application review process.

CHNEP 2015-16 Public Outreach Grant Application Transmittal Form

This one-page form may not be modified and is available at www.CHNEP.org.

1. Project Title:

2. Budget: Request \$ + Match \$ = Total \$

Be sure to provide financial details on the Budget Form and in the application. Round to nearest dollar.

3. Name of Person Submitting Application:

4. Organization:

5. Street Address:

City, State ZIP:

6. Area Code/Phone Number:

7. Email Address:

8. Email addresses of others who receive emailed notifications from the CHNEP:

9. Geographic Area (check all that apply)

☐ Upper Peace River Watershed (north of Zolfo Springs)

☐ Lower Peace River Watershed (south of Zolfo Springs)

☐ Tidal Caloosahatchee River Watershed (east to Franklin Locks)

☐ Venice/Lemon Bay/Cape Haze

☐ Myakka River Watershed

☐ Estero Bay Watershed/Estero Island

☐ Islands (except Estero)

☐ Charlotte Harbor Proper

10. Common Problems throughout Watershed Addressed by This Application (check all that apply)

☐ Hydrologic Alterations ☐ Fish & Wildlife Habitat Loss ☐ Water Quality Degradation ☐ Stewardship Gaps

I certify that this application is made without prior understanding, agreement, or connection with any corporation, firm, organization, or person submitting an application for the same contractual/cooperative agreement/grant services, and is in all respects fair and without collusion or fraud. This project helps implement the CHNEP Comprehensive Conservation and Management Plan (CCMP) to protect the natural environment from Venice to Bonita Springs to Winter Haven. I agree to abide by all conditions of this application and certify that I am authorized to sign this application for the Applicant. I, as undersigned, have authorization to represent the organization.

I understand and agree that my electronic signature is legally binding. Please check the appropriate box and provide your signature.

I Accept (check box)

I Decline (check box)

11. Signature

12. Abstract/Executive Summary: Please limit to space provided below.

CHNEP 2015-16 Public Outreach Grant Application Budget Form

Please be sure to explain the budget in the essay portion of the application and show match so that the full cost of the project is known. Round the budget to the nearest dollar. This form may not be modified. It is available at www.CHNEP.org.

1. Project Title:

| | Request to CHNEP | | Match | Budget |
|------------------------------------|------------------|---|-------|--------|
| 2. Salaries ^a | \$ | + | \$ | = \$ |
| 3. Materials/Supplies ^b | \$ | + | \$ | = \$ |
| 4. Travel ^c | \$ | + | \$ | = \$ |
| 5. Subcontractors ^d | \$ | + | \$ | = \$ |
| 6. Other Costs ^e | \$ | + | \$ | = \$ |
| 7. TOTAL | \$ | + | \$ | = \$ |

Itemize how the total budget for salaries, materials/supplies, travel and subcontractors (above) will be spent.

Be sure to explain in the essay what expenses the CHNEP is being asked to support.

^a **Salaries:** Itemize the hours estimated to be worked by each person and the full cost (salary, fringes, etc.)

| | | | |
|---------------|------------------|---|-----------------------|
| Staff person: | Billing rate: \$ | x | hours = Total cost \$ |
| Staff person: | Billing rate: \$ | x | hours = Total cost \$ |
| Staff person: | Billing rate: \$ | x | hours = Total cost \$ |
| Staff person: | Billing rate: \$ | x | hours = Total cost \$ |

^b **Materials / Supplies:** Itemize each item expected to be purchased and the cost.

| | |
|--------------------|--------|
| Item(s) purchased: | for \$ |
| Item(s) purchased: | for \$ |
| Item(s) purchased: | for \$ |

^c **Travel:** In the essay portion of the application, describe the travel required and costs involved.

^d **Subcontractor:** Itemize the work to be performed by each subcontractor.

| | | |
|---------|-----------------|----------|
| Vendor: | Work performed: | Cost: \$ |
| Vendor: | Work performed: | Cost: \$ |
| Vendor: | Work performed: | Cost: \$ |

^e **Other Costs:** Itemize the work to be performed, including any indirect overhead (____% of \$_____)

| | | |
|---------|-----------------|----------|
| Vendor: | Work performed: | Cost: \$ |
| Vendor: | Work performed: | Cost: \$ |
| Vendor: | Work performed: | Cost: \$ |

4c. CHNEP 2014 ADVOCACY SUMMARY REPORT

Although no advocacy letters were written in 2014, 15 letters of support to assist partners were issued.

The letters of support included:

| Date | Partner | Project | Funding Source | Agency |
|-------------|---|---|------------------------|---------------------|
| 9/30/2013 | City of Punta Gorda | Reverse Osmosis Water Treatment Plant Project | General Use | General Use |
| 11/4/2013 | University of South Florida | Water Atlas Expansion | Gulf of Mexico Program | EPA |
| 11/13/2013 | Charlotte Harbor Flatwoods Initiative | Bond Ranch Addition (650) acres | Permit Development | FDOT |
| 12/20/2013 | Association of NEPs | Interior and EPA's Top Coastal Restoration and Protection Programs | Appropriations | Congress |
| 1/14/2014 | SWFRPC | Community-wide Brownfields Assessment Program Initiative | Brownfields Program | EPA |
| 1/23/2014 | The Nature Conservancy | Climate Change Decision Support Assistance | Gulf of Mexico Program | EPA |
| 1/28/2014 | Gulf Coastal Training Programs | Gulf of Mexico Coastal Training Initiative | Gulf of Mexico Program | EPA |
| 3/5/2014 | Michael Juchnowicz | Fertilizer Ordinances | Local Ordinances | Counties and Cities |
| 5/6/2014 | City of Punta Gorda | Reverse Osmosis Water Treatment Plant Project | General Appropriation | Governor's Office |
| 5/13/2014 | The Nature Conservancy | On-going and Proposed Charlotte Harbor Oyster Habitat Restoration Efforts | General Use | General Use |
| 5/22/2014 | SFWMD | C-43 Water Quality Treatment and Testing Facility (Boma) | CWA Section 319 | FDEP |
| 5/23/2014 | Conservation Foundation of the Gulf Coast | Carlton Ranch Acquisition (Manatee) | Florida Forever + | General Use |
| 7/22/2014 | Conservation Foundation of the Gulf Coast | Myakka Island Conservation Corridor | Florida Forever | FDEP |
| 8/13/2014 | Charlotte Harbor Flatwoods Initiative | Bond Ranch Addition (650) acres | Florida Forever | FDEP |
| 9/19/2014 | Charlotte Harbor Flatwoods Initiative | Bond Ranch Addition (650) acres | Florida Forever | Governor's Office |

Recommendation:

Motion to recommend that the Management Conference accept the CHNEP 2014 Advocacy Summary Report.

Attachment:

CHNEP 2014 Advocacy Summary Report

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|------------|------------------|--|---------------------------|--|---|-----------|---------------------|
| | | | | 49 yes, 19 no, 3 pending, 5 partial, 3 no action | | | |
| 9/12/2013 | Yes | State Conservation Lands Assessment | ARC | Requested removal of CHNEP property from surplus consideration. | Property was removed from the potential surplus list. | Yes | Hank Vinson |
| 8/21/2013 | Yes | Caloosahatchee added to Lake O | Senator Joe Negron | Add the Caloosahatchee to consideration of Lake O releases. | Caloosahatchee added | Yes | Sen. Negron |
| 8/12/2013 | Yes | Addendum to Final AEIS | ACOE | Used addendum to reiterate findings from 6/3/2013 letter | Record of Decision will be within mine permits. | Pending | |
| 6/3/2013 | Yes | Final AEIS comments | ACOE | Modify several portions of the AEIS | Record of Decision will be within mine permits. | Pending | |
| 7/31/2012 | Yes | 4 mine permit letters | ACOE | Requested several additional no mine areas. | Review underway | Pending | |
| 7/31/2012 | Yes | AEIS Substantive Comments | ACOE | Modify several portions of the AEIS | Several comments were incorporated into FAEIS | Yes | |
| 6/13/2012 | Yes | AEIS extension for public comments | ACOE | Extend public comment on Draft Area-wide Environmental Impact Statement (AEIS) Phosphate Mining in the Central Florida Phosphate District | Extension granted but not as long as requested but was sufficient | Yes | Col. Pantano |
| 2/16/2012 | Yes | 2 letters concerning Proposed Hawthorne Creek, Prarie Creek and Myrtle Slough TMDL | EPA | Argued improvements in nitrogen and phosphorus levels of water body suggest TMDL no longer warranted. | TMDL adopted for 60-80% N and P load reduction on the basis of DO exceedences | No | |
| 1/25/2012 | Yes | Fertilizer Preemption | News-Press and WINK event | Do not approve HB 421 | HB 421 not passed | Yes | Sierra Club |
| 1/23/2012 | Yes | Sustainable Water Resource Management Plan for the Peace Creek Watershed | City of Winter Haven | CHNEP formally endorsed the plan. | The city used CHNEP endorsement to garner additional support and which the document forms the basis for the Peace Creek BMAP. | Yes | Mike Britt |
| 12/16/2011 | Yes | Lower Myakka River MFLs | SWFWMD | CHNEP support of draft MFLs for Lower Myakka River | Rulemaking completed and included CHNEP comments. | Yes | Sid Flannery |
| 10/26/2011 | Yes | Draft 62-302 & 62-303 FAC Numeric Nutrient Criteria | FDEP | Workshop letter we modified for formal public comment. Points that were incorporated into the draft rule were removed & final 4 major requests and general support were added. | Incorporated changes into draft rule. | Yes | Eric Shaw |
| 10/3/2011 | Yes | Draft 62-302 & 62-303 FAC Numeric Nutrient Criteria | FDEP | Introduced 8 major requests. Hand-delivered letter to public workshop, where several points were incorporated into the draft rule. | Incorporated changes | Yes | Eric Shaw |
| 4/30/2011 | Yes | Support for Aquatic Preserve Funding | Legislature | Restore funding to the Estero Bay Aquatic Preserve Office from cuts in draft budget. | Funding & office reinstated for FY 2011 | Yes | |
| 3/25/2011 | Yes | Opposition to bills preempting fertilizer ords. | Legislature | Opposition to HB 457 & CS/SB 606, preempting local fertilizer ordinances. | Bills did not pass | Yes | Chair Gary Aubuchon |
| 11/22/2010 | Yes | EIS Scoping | USCOE | Introduced 7 scoping requests. | Scoping requests included | Yes | |
| 11/22/2010 | Yes | MFL for Lower Myakka | SWFWMD | Introduced 4 major requests. | Incorporated in peer review | Yes | Sid Flannery |
| 6/11/2010 | Yes | Stormwater Treatment | FDEP | Endorsed the rule & handbook. Made a few comments | Delayed by Governor. | No action | |

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|------------|------------------|------------------------------------|--------------------------------|--|--|----------|---------------------------|
| 5/28/2010 | No-Director | Florida Forever List | ARC | Requested the Peace River Refuge & Peaceful Horse Ranch projects be added to the Florida Forever project list. | Both Projects added to list & ranked. | Yes | |
| 5/21/2010 | Yes | River of Grass | SFWMD | Endorsed River of Grass Acquisition | Portion acquired | Yes | Governing Board |
| 3/24/2010 | Yes | Designated Uses Law | FDEP | Proposed Revisions to F.A.C. 62-302.400 Designated Use & Surface Water Classification System, Technical Support Document. | Rule adopted | Partial | |
| 12/28/2009 | No-Director | Nutrient Criteria | EPA | Request that once the CHNEP estuarine numeric nutrient criteria are completed, they replace any interim EPA estuarine numeric nutrient criteria utilized for modeling freshwater numeric criteria or other purposes for which they are used. | EPA removed DPVs from draft rule. | Yes | EPA |
| 11/16/2009 | Yes | MFL for Lower Peace | SWFWMD | Letter to Governing Board requesting modification to MFL including low flow threshold of 130 cfs, maximum diversion amount, trigger to move into block 2 or 3, & a reevaluation in 5 years. | Recommendations presented to GB & PRMRWSA & MFL document to incorporate modifications. | Yes | Marty Kelly & Bruce Wirth |
| 6/17/2009 | Yes | MFL for Lower Peace | SWFWMD | Letter to Governing Board requesting more time to review draft MFL. | Additional time granted. | Yes | Governing Board |
| 3/19/2009 | Yes | F/W Flows to Caloosahatchee | USACOE | Request continuation of beneficial base flow. | Base flows continued | Yes | Col. Grosskruger |
| 12/18/2008 | Yes | Estero Bay AP | Governor | Encourage continued state support for the Estero Bay Aquatic Preserve programs, activities & office. | Preserve Office funded. | Yes | Gov. Crist |
| 12/1/2008 | Yes | NPDES Monitoring | FDEP | Consider the value of existing ambient monitoring programs & provide flexibility in using these programs for MS4. | All requests were incorporated into the rule. | Yes | Phil Coram & Steve Kelly |
| 10/30/2008 | Yes | CRWPP | SFWMD | Adoption of plan with 15 recommendations | CHNEP recommendations included in plan. | Yes | Janet Starnes |
| 3/26/2008 | Yes | Fertilizer Preemption | Senator Aaronberg | Request SB 2352, which included preemption language, not be adopted. | Written response, Not adopted | Yes | Senator Saunders |
| 1/18/2008 | Yes | CF South Pasture Mine Modification | FDEP | Request additional information regarding application. | FDEP incorporated comments, additional modeling. | Yes | CFI & Orlando Rivera |
| 1/7/2008 | Yes | Fertilizer Preemption | Consumer Fertilizer Task Force | Made 7 recommendations regarding final recommendations. | No Response, but pre-emption not successfully adopted. | Yes | |
| 12/19/2007 | Yes | CF South Pasture Mine Modification | FDEP | Request for extension of public comment period. | CF & FDEP worked together to extend it. | Yes | Rick Cantrell |
| 12/18/2007 | Yes | EIS | USACOE | Reaffirm support for EIS within the Peace & Myakka Basins. | Response that request is too broad & to look to local/state permitting processes. | Yes | Tom Welborn |
| 11/19/2007 | Yes | Stormwater Design Criteria | FDEP | Modifications to the report "Evaluation of Current Stormwater Design Criteria in Florida." | Response committing to including all BMPs in rule. | Yes | Eric Livingston |

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|-----------|------------------|--|-----------------------------|---|---|----------|-------------------------|
| 9/4/2007 | No-RRCT | SWFFS funding | USACOE | Requests that USACOE preserve funding necessary to maintain the current schedule for completing the Southwest Florida Feasibility Study (SWFFS). | Funding & schedule preserved from draft language. | Yes | Quality Review Board |
| 8/20/2007 | Yes | S Ft Meade Mine Expansion | USACOE | Request ACOE review permit applications on phosphate mining activities for consistency with the Charlotte Harbor National Estuary Program's (CHNEP) Comprehensive Conservation & Management Plan (CCMP); Special consideration be paid to potential Cumulative & Indirect Impacts in review of this & other permit applications in the region; A Determination of Consistency with the CHNEP CCMP & Cumulative & Indirect impacts be included in the Statement of Finding; & the CHNEP receive a copy of the Statement of Finding for the South Fort Meade Mine Expansion & other mine permit applications in the Peace River & Myakka Basins at the above address or my email account. | No response | Yes | |
| 6/7/2007 | Yes | C-43 PIR | USACOE | Caloosahatchee River (C-43) West Basin Storage Reservoir Draft Project Implementation Report (PIR) & Environmental Impact Statement (EIS) | Some Recommendations Incorporated | Yes | |
| 4/25/2007 | Yes | HB 957/SB 2082, Environmental Permitting | House of Representatives | Opposed to section 6 of the bill that would preempt local rules concerning wetland protection. | Not adopted | Yes | Rep. Trudi Williams |
| 4/18/2007 | Yes | Proposed Fertilizer Preemption | FL House & Senate | Proposed Fertilizer Preemption language not be permitted as an amendment to any legislation this session. | Not adopted | Yes | |
| 4/4/2007 | Yes | HB 1816, Restoring Caloosahatchee River | US House of Representatives | Adopt Restoring the Caloosahatchee River: A Legacy for Florida, House Bill 1816. | Not adopted | No | |
| 3/30/2007 | Yes | SB 2176 Inland Navigation Districts | Senate | Hold legislation in abeyance until Florida Department of Environment Protection, Office of Coastal & Aquatic Managed Areas (CAMA), can: 1) complete its statewide plan for aquatic preserve management, 2) update the management plans for each of 6 Aquatic Preserves within the Charlotte Harbor NEP Study Area & 3) develop the General Permit for the West Coast Inland Navigation District (WCIND) channel designations. | Not adopted | Yes | Senator Michael Bennett |
| 3/23/2007 | Yes | SB 0548 Protection of Seagrasses | Senate | Support bill which provides for enforcement, restoration & education associated with seagrasses. | Not adopted | No | |
| 3/23/2007 | Yes | SB 2178 Restoration of Sea Grass Beds | Senate | Support bill & request that the bill add Charlotte County as a pilot program area for seagrass restoration. | Not adopted | No | |
| 3/23/2007 | Yes | SB 2346/HB 1281 Myakka River Designation | Senate | Support bill to expand designation of the Myakka River Wildlife & Scenic River to include Charlotte & Manatee Counties. | Bill adopted to study expanded designation | Partial | Senator Michael Bennett |
| 3/23/2007 | Yes | HB 535, SB 392 | House of Representatives | Support adoption of Northern Everglades & Estuaries Protection Act (NEEPA). | Adopted | Yes | Rep. Trudi Williams |

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|------------|-------------------------------------|---|--------------------------|--|--|-----------|-----------------------|
| 11/20/2006 | Yes | Cape Coral Burrowing Owls | Cape Coral | Request Cape Coral invite Tom Allen to present results of study & identify important burrowing owl habitat to protect. | No initiation | No | |
| 9/26/2006 | Yes | Lake O Regulation Schedule Study | USACOE | Several changes to draft LORRS project were requested. | LORRS modified | Yes | |
| 6/8/2006 | Yes | Pirate Harbor Inner Channel | FDEP | Request participation in review process. | Not granted. | No | |
| 5/2/2006 | Yes | 90-day Extension for comment period | USACOE | Requested 90-day extension for the Ona Mine Public Comment Period. | Not granted. | No | |
| 4/21/2006 | Yes | Babcock Ranch Acquisition-SB 1226 | Senate | Adopt SB 1226 to acquire Babcock Ranch. | Adopted | Yes | Senator Paula Dockery |
| 4/17/2006 | Yes | Horse Creek OFW | FDEP | Reiterate our support of designating Horse Creek as an Outstanding Florida Water. | Not Designated | No | |
| 4/14/2006 | Yes | EIS | USACOE | Reaffirm support for EIS within the Peace & Myakka Basins. | Not funded but Peace River CIS & Recourse Management Plan was funded by State. | Yes | Tom Welborn |
| 3/24/2006 | Yes | HB 1345, SB 2490 supporting crab trap retrieval program | FWC | Adopt HB 1345/SB 2490 providing a funding mechanism for the removal of crab traps. | Not adopted. | No | |
| 3/24/2006 | Yes | HB 1459 supporting laws to regulate reptiles | House of Representatives | Adopt HB 1459. | Not adopted. | No | |
| 3/24/2006 | Yes | Babcock Ranch Acquisition | Sun-Herald | Place on the record our support of the Babcock Ranch acquisition. | Babcock Ranch acquired for conservation purposes. | Yes | |
| 11/8/2005 | Yes | State-wide Aquatic Preserve Document | DEP Contractor | Request minor revisions & offer support. | State never adopted document. | No action | |
| 5/9/2005 | Yes | WQ Component for C-43 Reservoir | SFWMD | Include a water quality component for the Accelerate C-43 reservoir project | Received response on 6/27/05. | No | |
| 3/21/2005 | Yes | FPL Land Acquisition | FPL | Sell property on Gasparilla Island for conservation purposes. | Received response on 4/14/05 committing to work with GICIA. | No action | |
| 1/14/2005 | 11/15/04 Policy Committee follow-up | SWUCA | SWFWMD | Policy Committee requested staff meet with SWFWMD staff regarding 2/18/04 comments & present comments to the Governing Board. CHNEP staff met with SWFWMD on 12/17/04 & issued a letter outlining ways to address 2/18/04 recommendations & 11/15/04 discussion. | Presented points to the SWFWMD Governing Board on 1/15/05. | Partial | |
| 1/14/2005 | Yes | Corps Public Notice | USACOE | Review of SAJ20049692 Bethel Community with no objections. Met with consultants (Johnson Engineering) 1/14/05 & established links to EPA reviewers Robert Lin & Rhonda Evans. | Established contacts & procedures to comment on Corps public notices. | Yes | |
| 10/11/2004 | Yes | WSE Regulations | SFWMD | Review of FONSI stated the CLA adoption was premature, increased damaging freshwater flows, & ignored FWC recommendations regarding lake levels. CHNEP oral presentation of comments to USACE-Jax concerning proposed changes to WSE schedule. | Not adopted | Yes | |

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|------------|-------------------|------------------------------|---------------|---|---|----------|---------------|
| 10/4/2004 | Yes | Phosphogypsum Research | EPA | Approve research into beneficial uses for phosphogypsum | Brevard County withdrew support based on increased hurricane activities & the need for additional space for a methane gas initiative. | No | |
| 7/14/2004 | 2/18/04 Follow-up | WSE Regulations | SFWMD | 2/18/04 request resulted in proposed revision to WSE which was slightly worse for the Caloosahatchee. FAX to request west coast public meeting. | Public meeting held 8/04/04 & CLA revised | Yes | |
| 2/18/2004 | Yes | SWUCA | SWFWMD | Request SWUCA Recovery Strategy include goal to stop saltwater intrusion of Floridan Aquifer & establishing flow ranges. | SWFWMD 3/5/04 response | No | |
| 2/18/2004 | Yes | WSE Regulations | USACOE/ SFWMD | USACOE & SFWMD modify the regulations affecting flows from Lake Okeechobee to the Caloosahatchee estuary, including FWC recommendations. | Corps 3/23/04 & SFWMD 3/12/04 response committing to revision. | Yes | |
| 11/17/2003 | Yes | Corps Phosphate Mine Inquiry | USACOE | 1. A summary of phosphate mining permits with review timetables. We may forward a federal consistency determination within the applicable review timetables; & 2. A presentation by Corps staff on their progress to address cumulative impacts of the proposed phosphate mine projects, pending phosphate mining permits in the Charlotte Harbor Study area, & how the Charlotte Harbor NEP can best assist the Corps in their review & CCMP consistency requirements. | No response from the Corps. However, the Corps has issued a new website to track public notices on a weekly basis. | Yes | Tom Welborn |
| 11/17/2003 | Yes | Programmatic EIS | USACOE | Reiterate that a programmatic Environmental Impact Statement (EIS) is probably required to comply with the spirit & intent of the National Environmental Policy Act (NEPA), recognizing that Corps permitting & funding activities within the Peace & Myakka River Basins of the Greater Charlotte Harbor watershed constitute federal actions that may have significant effects on the environment, particularly when considered cumulatively. | No response. However, the Florida legislature funded a cumulative impact review for the Peace River basin. The contractor (PBS&J) recommended using the NEP committees for public & technical review. | Yes | Tom Welborn |

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|-----------|------------------|------------------------------|---|--|----------|----------|---------------|
| 9/24/2003 | Yes | Caloosahatchee Coordination | USACOE, SFWMD, FDEP, FFWCC, Lee, Charlotte. | 1. Develop & implement a Recovery Strategy for the Caloosahatchee River in conjunction with the land management strategies of the local governments to ensure the MFL rule will not be violated in the future; 2. Pending establishment & implementation of a Recovery Strategy, establish an interim measure or series of measures for ensuring the MFL is met should the 200 cfs not be provided by drainage west of S-79, including consideration of supplemental Lake Okeechobee releases; 3. Acquire land within the watershed that will allow for additional storage & natural hydrology; 4. Develop, obtain funding & construct projects to restore & maintain a more natural hydrology; 5. Encourage that future development projects within the Caloosahatchee watershed will not have deleterious influence on groundwater & tributary inputs west of the Franklin Lock system; 6. Research & monitor effects of flows to estuarine resources & water quality to better predict & document causes of failure & necessary actions to correct deficiencies; & 7. Establish a plan for protective maximum flows & levels to the Caloosahatchee Estuary to assure significant adverse impacts do not occur to significant estuarine resources. | | No | |
| 6/19/2003 | Technical | Charlotte Harbor TMDL & PLRG | FDEP | Encourage the Department to review & incorporate the Southwest Florida Water Management District's work to develop a Pollutant Load Reduction Goal (PLRG) for Charlotte Harbor into the TMDL process for WBIDs 2065A and 2065 B. | | | |
| 6/18/2003 | Technical | SWANCC Request | USACOE | Quantify the number of acres & the location of the wetlands that will be affected or reclassified as non-jurisdictional by the SWANCC decision within our study area. Explain how the determination of non-jurisdictional status is made for these areas. | | Yes | Tom Welborn |
| 2/21/2003 | Yes | Babcock Ranch Acquisition | FL House & Senate | Support the acquisition of the Babcock Ranch. | | Yes | |

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|------------|------------------|-----------------------------------|--------|---|---|----------|---------------|
| 12/12/2002 | Pre-dates | Upper Peace River MFL | SWFWMD | 1. Develop Minimum Flows & Levels rules to protect medium & high flows in addition to the low minimum flows & levels currently proposed; 2. Clarify & modify the Fish Passage Criteria target of a "maximum of 0.6 feet" to a minimum of 0.6 feet for a specific width of the stream channel; 3. Incorporate the loss of flow to subsidence features or reference the Fish Passage & Wetted Perimeter Inflection Point Criteria within the rule; 4. In addition, the Management Conference endorses a rule that provides for the periodic inundation of instream woody habitats, such as snags & roots. However, the period of inundation for the Instream Woody Habitats Criteria should be consistent with the Department of Environmental Protection's recommendations for the Stream Condition Index & Bioassessments; & 5. The Management Conference requests that the Southwest Florida Water Management District revisit the established MFL rules for the Upper and Middle Peace Rivers soon after it has completed rule development for the lower/tidal portion of the river system to ensure consistency & that the established flows & levels are adequate to protect the ecological integrity of the entire system. | 2/19/03 Letter From SWFWMD agreed with the points but would not modify anything for this round. | No | |
| 12/6/2002 | Pre-dates | NMFS letter | NMFS | Initiate Essential Fish Habitat consultation pursuant to the 1996 amendment of the Magnuson-Stevens Act as part of the Corps review of these mining proposals. | NMFS provided verbally that indirect impacts are difficult to quantify | No | |
| 9/6/2002 | Pre-dates | Horse, Joshua, Shell MFL Schedule | SWFWMD | Include tributaries Horse, Joshua & Shell Creeks for minimum flows & levels development by 2005. | | No | |
| 8/23/2002 | Pre-dates | Reservations | SFWMD | The white paper be modified to include the Caloosahatchee estuary & Estero Bay as legal source user basins for environmental purposes. | Though not adopted, the issue remains on the table. | Partial | |
| 5/17/2002 | Pre-dates | CH Basin Status Report | FDEP | 1. Work with EPA to consider information beyond the 1998 Florida 303(d) list & current Florida water quality standards in developing the upcoming revision; & 2. Include all water quality data with a State or Federally approved Quality Assurance Plan in the determination of impairments. | CHNEP funded uploading additional water quality data to STORET | Yes | |

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|-----------|------------------|---------------------|--------|---|--|----------|---|
| 4/24/2002 | Pre-dates | Myakka TMDL | USEPA | 1. EPA & the State of Florida should consider additional contaminants as causing impairment of uses in the Myakka system & include this information in the 303(d) list & proposed TMDL rule. We understand that the Agency may be limited to developing limits for contaminants determined to cause impairment through the 303(d) listing process; however, the current 303(d) list, accepted by the Agency, is inadequate. We understand that the State of Florida is developing a revision to the 303(d) listing which is due Fall 2002. We strongly urge that the Agency & State consider information beyond the 1998 Florida 303(d) list & current Florida water quality standards in developing the upcoming revision; 2. The Agency should incorporate additional relevant research, such as studies documenting the aforementioned biological impairments & numerous appropriate empirical loading models, into the development of the proposed TMDL rule; 3. The Agency should clarify the language in the TMDL rule. Since the actual quantitative poundage of pollutants introduced into the river is in question, the TMDL should make clearer that the actual limit is "no additional pollutant loading" in lieu of a current loading estimate calculated by a mechanistic model. | | | |
| 4/15/2002 | Pre-dates | PLRG | SWFWMD | Support the Pollutant Load Reduction Goal (PLRG) recommendations for Charlotte Harbor. | | Yes | |
| 2/15/2002 | Pre-dates | Lower CH SWIM | SFWMD | Designate Lower Charlotte Harbor as a Priority 1 Surface Water Improvement & Management Program waterbody | Lower Charlotte Harbor is a Designated SWIM waterbody in direct response to NEP action | Yes | Trudi Williams, Carol Wehle, & Akin Owosina |
| 9/7/2001 | Pre-dates | Myakka MFL Schedule | SWFWMD | Request that the Myakka River be considered for inclusion within the list of water bodies to have MFLs established by the year 2005. | MFLs have been scheduled for 2006 | No | |

CHNEP Advocacy Summary Report 1999 - 2014

| Date | Advocacy Process | Short Title | To | Request | Outcomes | Success? | Gratitude to: |
|-----------|------------------|--------------------|--------|--|----------------------|----------|---------------|
| 2/9/2001 | Pre-dates | Caloosahatchee MFL | SFWMD | 1. Flows for the months of April, May & June should be addressed; 2. The time frame necessary to attain "significant harm" should be shortened from "3 consecutive years" to "1 year"; 3. Research & monitoring should be conducted to assure significant impacts do not occur to important estuarine resources; 4. Research & monitoring should be conducted to predict & document causes of failure to maintain minimum flows & thereby identify necessary actions to correct deficiencies; & 5. A protective maximum flow & water level should be identified to assure significant adverse impacts do not occur to significant estuarine resources for use during operation of the water management system. | #3 request conducted | Partial | |
| 9/26/2000 | Pre-dates | Region-wide EIS | USACOE | Undertake a Region-wide Environmental Impact Statement for federal permitting & funding activities within the Peace & Myakka River Basins of the Greater Charlotte Harbor watershed. | | Yes | Tom Welborn |
| 6/7/1999 | Pre-dates | TMDL Delisting | FDEP | Objecting to delisting of several segments from Planning List | | No | |

5. CHNEP DRAFT FY16 WORKPLAN DISCUSSION

The FY16 Workplan with FY15 amendments is the first workplan drafted after moving to the City of Punta Gorda as the CHNEP host agency. To facilitate the transition from the Southwest Florida Regional Planning Council to the City of Punta Gorda, all public outreach projects and all but five technical projects were closed out at the end of FY14. The balance of technical projects carried to the City totaled \$182,760. Cash returned by the SWFRPC totaled \$72,424.36 and un-invoiced SWFWMD contracts totaled \$95,080.00, providing a positive balance of \$15,255.64 going forward into FY15.

During the first few months with the City of Punta Gorda, staff has gained a better understanding of City fiscal policies. The City fiscal software and procedures demands a tie between revenue sources and expenditures, benefitting CHNEP. This tie is made through project codes, which the City has allowed CHNEP to define. It made more sense to allocate staff time by hours rather than by annual percentage, and it is reflected in the workplan document.

The workplan document structure follows the EPA guidance from 3 years ago and is similar to last year. Budget tables are in the front of the document.

The public outreach and technical projects represent continuing projects, with no brand new initiatives. FY15 new initiatives include Morgan Park restoration (with funding from SWFWMD and Mosaic Foundation) and Mangrove Heart Attack (with funding from EPA Region 4 WPDG.)

The end of FY15 carry-over is estimated at \$39,255.80 with an end of FY16 reserve of \$59.23. At this time last year, the draft workplan had a deficit of \$138,366 at the end of FY15 (\$31,739 of which occurred at the end of FY14).

The City of Punta Gorda asks its departments to submit draft budgets by February 28, in preparation for budget approval by September.

Recommendation:

Motion to recommend that the Management Conference direct staff to provide the CHNEP draft Workplan budget for consideration by the City of Punta Gorda for inclusion in the City's draft budget.

Attachment:

Draft FY16 Workplan and FY15 Amendments

FISCAL YEAR 2016 WORKPLAN & Fiscal Year 2015 Workplan Amendments



Credit: www.puntagordadailyphoto.com

The City of Punta Gorda became the fiscal host of the Charlotte Harbor National Estuary Program Office will be hosted by City of Punta Gorda beginning October 1, 2014.
The CHNEP Office is now at historic City Hall.

Charlotte Harbor National Estuary Program Technical Report 15-1 Draft: 1/8/2015



326 W. Marion Avenue
Punta Gorda, FL 33950
(941) 575-6090
www.CHNEP.org

The Charlotte Harbor National Estuary Program is a partnership of citizens, elected officials, resource managers and commercial and recreational resource users working to improve the water quality and ecological integrity of the greater Charlotte Harbor watershed. A cooperative decision-making process is used within the program to address diverse resource management concerns in the 4,700-square-mile study area. Many of these partners also financially support the Program, which, in turn, affords the Program opportunities to fund projects. The entities that have financially supported the program include the following:

U.S. Environmental Protection Agency
Southwest Florida Water Management District
South Florida Water Management District
Florida Department of Environmental Protection
Peace River/Manasota Regional Water Supply Authority
Polk, Sarasota, Manatee, Lee, Charlotte, and Hardee Counties
Cities and Towns of Sanibel, Cape Coral, Fort Myers, Punta Gorda, North Port, Venice,
Fort Myers Beach, Winter Haven, and Bonita Springs

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Charlotte Harbor National Estuary Program

Policy Committee

Mr. Doug Mundrick, Co-Chair
Water Protection Division
U. S. Environmental Protection Agency, Region 4

Mr. Jon Iglehart, Co-Chair
South District Director
Florida Department of Environmental Protection

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Hon. S. Delshay Turner
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Hon. Adrian Jackson
City of Bartow

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Hardee County

Hon. Larry Kiker
Lee County

Hon. Robin DiSabatino
Manatee County

Mr. Jeff Spence
Polk County

Hon. Charles Hines
Sarasota County

Agencies

Ms. Patricia M. Steed
Central Florida Regional Planning Council

Dr. Philip Stevens
Florida Fish & Wildlife Conservation Commission

Mr. Phil Flood
South Florida Water Management District

Mr. Don McCormick
Southwest Florida Regional Planning Council

Mr. George Mann
Southwest Florida Water Management District

Management Committee Co-Chairs

Ms. Jennette Seachrist
Southwest Florida Water Management District

Mr. Mike Kirby
City of Bonita Springs

Technical Advisory Committee Co-Chairs

Mr. Keith Kibbey Ms. Elizabeth Staugler Ms. Shelley Thornton

Citizens Advisory Committee Co-Chairs

Mr. Roger DeBruler Mr. Kayton Nedza

Staff

Lisa B. Beever, PhD, Director
Elizabeth S. Donley, JD, Deputy Director
Maran Brainard Hilgendorf, Communications Manager
Judy Ott, MS, Program Scientist

GLOSSARY OF ACRONYMS

| | |
|----------|---|
| ABM | Agency on Bay Management |
| BMAP | Basin Management Action Plan |
| BMP | Best Management Practice |
| CAC | Citizens Advisory Committee |
| CAMA | Coastal and Aquatic Managed Areas |
| CCHMN | Coastal Charlotte Harbor Monitoring Network |
| CCMP | <i>Comprehensive Conservation and Management Plan</i> |
| CFRPC | Central Florida Regional Planning Council |
| CHEC | Charlotte Harbor Environmental Center |
| CHEVWQMN | Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network |
| CHNEP | Charlotte Harbor National Estuary Program |
| CH-RAMP | Charlotte Harbor-Regional Ambient Monitoring Program |
| CWPRA | Coastal Wetlands Planning, Protection and Restoration Act |
| CZM | Coastal Zone Management |
| EAR | Evaluation and Appraisal Report |
| EPA | Environmental Protection Agency |
| FDEP | Florida Department of Environmental Protection |
| FDOT | Florida Department of Transportation |
| FWC | Florida Fish & Wildlife Conservation Commission |
| FWRI | Fish and Wildlife Research Institute |
| GIS | Geographical Information System |
| GPRA | Government Performance and Results Act |
| HAS | Hydrological Alterations Subcommittee |
| HCS | Habitat Conservation Subcommittee |
| LID | Low Impact Development |
| MFL | Minimum Flows and Levels |
| NRCS | Natural Resources Conservation Service |
| NEP | National Estuary Program |
| NNC | Numeric Nutrient Criteria |
| NOAA | National Oceanic and Atmospheric Administration |
| NWR | National Wildlife Refuge |
| PIVOT | Performance Indicators Visualization Outreach Tool |
| PLRG | Pollutant Load Reduction Goal |
| PR/MRWSA | Peace River/Manasota Regional Water Supply Authority |
| R&R | Research and Restoration |
| RPC | Regional Planning Council |
| SFWMD | South Florida Water Management District |
| SRPP | Strategic Regional Policy Plan |
| SWFWMD | Southwest Florida Water Management District |
| SWFRPC | Southwest Florida Regional Planning Council |
| SWIM | Surface Water Improvement Management |
| SWUCA | Southern Water Use Caution Area |
| TAC | Technical Advisory Committee |
| TBRPC | Tampa Bay Regional Planning Council |
| TMDL | Total Maximum Daily Load |
| USACOE | United States Army Corps of Engineers |
| USF&WS | United States Fish and Wildlife Service |
| USGS | United States Geological Service |
| WCIND | West Coast Inland Navigation District |
| WMD | Water Management District |
| WQ | Water Quality |
| WQQOS | Water Quality Quantifiable Objectives Subcommittee |

Purpose and EPA Guidance

This document provides annual financial and task-based information to meet federal workplan requirements. The focus of this workplan continues to be the implementation of the Comprehensive Conservation and Management Plan (CCMP).

The latest Environmental Protection Agency (EPA) guidance for the development of the workplans is the National Estuary Program FY 2012 Funding Guidance. According to the guidance, NEP Workplans generally include the following items:

1. Summary information
 - a. CCMP goals to be focused on
 - b. Budget breakdown including match
 - c. NEP staff and their official responsibilities
2. New and Ongoing Projects
 - a. Project Name
 - b. Whether it is New or Ongoing
 - c. Project objective
 - d. Project Description
 - e. CCMP and Workplan priority problem project addresses
 - f. Potential Partners
 - g. Outputs/Deliverables
 - h. Milestones
 - i. Budget
 - j. Anticipated Results
 - Short-term deliverables
 - Intermediate outcomes and long term outcomes
3. Completed Major Projects/Actions (including highly leveraged partner projects implementing CWA core program)
 - a. Highlight success stories and examples of transferable activities, tools, etc.
 - b. Include:
 - Project objective
 - Lead Project Implementer(s)
 - Amount of Sec. 320 funds spent on project (if under budget how reallocated for drawdown)
 - Project deliverables and outcomes
 - External constraints
4. CWA funds used for travel (New fiscal year is not required.)
 - a. Section 320 funded travel taken during the fiscal year in which the new workplan is adopted (i.e. the amended year), October 1 to the date the workplan is approved by the Management Conference and the remainder of the FY. Information includes:
 - Number of personnel
 - Travel dates
 - Purpose
 - Location
 - Final and Estimated Cost of trips

Summary Information

CCMP Goals Focused On in FY14 and FY15

The Management Conference developed program goals as a guide in the development of the first Comprehensive Conservation and Management Plan (CCMP.) With the adoption of the CCMP in 2000, the goals were incorporated into the quantifiable objectives. The quantifiable objectives that CHNEP will focus on in FY14 and FY 15 include:

- **WQ-2:** "By 2020, develop and meet water quality criteria that are protective of living resources for dissolved oxygen, nutrients, chlorophyll *a*, turbidity, salinity and other constituents." CHNEP are working with Sarasota Bay Estuary Program-SBEP and Tampa Bay Estuary Program-TBEP toward developing numeric nutrient criteria for tidal creeks.
- **HA-2:** "By 2020, restore, enhance and improve where practical historic watershed boundaries and natural hydrology for watersheds within the CHNEP study area, with special attention to Outstanding Florida Waters and Class I water bodies." CHNEP will work with partners to design and attract funding to significant hydrologic restoration projects including Dona Bay Restoration, Coral Creek Hydrologic Restoration, Alligator Creek Hydrologic Restoration, Charlotte Harbor Flatwoods Initiative, C-43 Reservoir and East Lehigh Acres Weir Project. RESTORE Act funding will be sought.
- **FW-1:** "Protect, enhance and restore native habitats where physically feasible and within natural variability, including: Submerged aquatic vegetation (SAV); Submerged and intertidal unvegetated bottoms; Oyster; Mangrove; Salt marsh; Freshwater wetland; Native upland; and Water column." CHNEP will work with The Nature Conservancy toward permitting and constructing oyster reefs restoration.
- **SG-1:** "By 2025, a minimum of 75 percent of all residents will have recalled attending a watershed event, reading watershed material or hearing watershed/estuary information.... A minimum of 10 percent of all residents will be able to claim personal actions that protect the estuaries and watersheds." CHNEP will implement a "Citizens Academy" that will reach a broad cross-section of residents. CHNEP will host events, especially for underrepresented populations. CHNEP will develop its Watershed Education and Training for Ponds, Lawns and Neighborhoods (WET PLAN) program to assist neighborhood groups with their stormwater pond management and building green infrastructure.
- **SG-2:** "By 2020, the CHNEP will expand its role as a recognized resource to elected officials or their agents from local, state and federal government for policy advice." CHNEP will continue to implement its advocacy and review procedures by reviewing and providing comments on critical projects. CHNEP will continue working with local governments to address climate change resiliency.

Budget Breakdown

Table 1: Charlotte Harbor NEP FY15 and FY16 Income

| Funding Source | Approved FY14 Funding | FY15 Request | Approved FY15 Funding | FY16 Request |
|--|----------------------------------|-------------------------|----------------------------------|-----------------------|
| Section 320 Funding | \$512,000.00 | \$538,000.00 | \$538,000.00 | \$538,000.00 |
| Total Federal Income | \$512,000.00 | \$538,000.00 | \$538,000.00 | \$538,000.00 |
| DEP | \$74,997.85 | \$75,000.00 | \$74,998.40 | \$75,000.00 |
| SFWMD | \$200.00 | \$130,000.00 | \$0.00 | \$130,000.00 |
| SWFWMD | \$130,000.00 | \$130,000.00 | \$130,000.00 | \$130,000.00 |
| Peace Manasota Water Supply Authority | \$3,500.00 | \$5,000.00 | \$3,500.00 | \$5,000.00 |
| Subtotal Regional Income | \$208,697.85 | \$340,000.00 | \$208,498.40 | \$340,000.00 |
| Sarasota County | \$25,000.00 | \$25,000.00 | \$25,000.00 | \$25,000.00 |
| Charlotte County | \$30,000.00 | \$15,000.00 | \$15,000.00 | \$15,000.00 |
| Lee County | \$15,000.00 | \$15,000.00 | \$15,000.00 | \$15,000.00 |
| Polk County | | \$15,000.00 | \$15,000.00 | \$15,000.00 |
| Cape Coral | \$7,500.00 | \$7,500.00 | \$7,500.00 | \$7,500.00 |
| Fort Myers | \$7,500.00 | \$7,500.00 | \$7,500.00 | \$7,500.00 |
| Manatee County | \$5,000.00 | \$5,000.00 | \$5,000.00 | \$5,000.00 |
| Punta Gorda | \$2,500.00 | \$5,000.00 | \$5,000.00 | \$5,000.00 |
| Sanibel | \$2,500.00 | \$2,500.00 | \$2,500.00 | \$2,500.00 |
| Bonita Springs | \$2,500.00 | \$2,500.00 | \$2,500.00 | \$2,500.00 |
| Fort Myers Beach | \$2,500.00 | \$2,500.00 | \$2,500.00 | \$2,500.00 |
| Venice | | \$2,500.00 | \$2,500.00 | \$2,500.00 |
| North Port | \$1,000.00 | \$1,000.00 | \$1,000.00 | \$1,000.00 |
| Winter Haven | | \$1,000.00 | \$1,000.00 | \$1,000.00 |
| Hardee County | \$500.00 | \$500.00 | \$500.00 | \$500.00 |
| Arcadia | | \$500.00 | | \$500.00 |
| Bartow | | \$500.00 | | \$500.00 |
| DeSoto County | | \$500.00 | | \$500.00 |
| Subtotal Local Income | \$101,500.00 | \$108,500.00 | \$107,500.00 | \$109,000.00 |
| CF Industries | \$2,000.00 | | | |
| Mosaic Company Foundation | \$50,000.00 | \$40,000.00 | \$40,000.00 | \$40,000.00 |
| NARC Grant | \$4,000.00 | | | |
| EPA WPDG - Mangrove | | | \$150,283.00 | |
| Resources on hand, end of 15 | | | \$67,424.36 | |
| Un-invoiced SWFWMD, end 15 | | | \$95,080.00 | |
| Carry-over, end of FY15 | | | | \$37,893.87 |
| Subtotal Grants and Deferred | \$56,000.00 | \$40,000.00 | \$352,787.36 | \$77,893.87 |
| Match In-Kind: SFWMD | \$512,000.00 | \$538,000.00 | \$538,000.00 | \$538,000.00 |
| Subtotal In-Kind | \$512,000.00 | \$538,000.00 | \$538,000.00 | \$538,000.00 |
| Fiscal Year Grand Total | \$1,390,197.85 | \$1,565,500.00 | \$1,744,785.76 | \$1,602,893.87 |
| Program Cash | \$878,397.85 | \$1,027,500.00 | \$1,206,785.76 | \$931,892.27 |
| End of FY16 Reserve | | | | \$278.70 |

FY15 Budget Amendment

Major changes within the amended FY14 budget included:

- Carry-over amounts from FY13 contracts were added, totaling \$182,760.
- Mosaic Foundation granted CHNEP \$40,000 to begin Morgan Park Restoration.
- Mangrove Heart Attack project required more staff time at the expense of other tasks,
- Travel was combined into one expense to simplify fiscal tracking.
- SWFRPC retained \$20,000 of FY14 funds to pay for FY15 Audit, so the expense is no longer shown in the FY15 budget.

**Table 2: Budget Changes between
FY15 Budget (amended 8/25/14) and FY15 Budget Amendment (page 5)**

| Task # | Task | Personnel | Fringe | Travel | Other | Total |
|--------|-----------------------|------------|-----------|-----------|------------|------------|
| 1 | Management & Admin. | (\$4,331) | \$305 | \$9,000 | (\$24,500) | (\$19,527) |
| 2 | Public Outreach | (\$7,526) | (\$1,230) | (\$3,000) | \$0 | (\$11,757) |
| 3 | Research | \$30,740 | \$12,653 | (\$2,000) | \$177,840 | \$219,234 |
| 4 | Restoration | (\$18,360) | (\$5,148) | (\$4,000) | \$40,000 | \$12,492 |
| 5 | Advocacy & Leg Action | \$1,060 | \$215 | \$0 | \$0 | \$1,275 |
| | Total | \$1,582 | \$6,795 | \$0 | \$197,540 | \$201,717 |

Table 3: Ongoing Technical Projects (as of 10/1/14)

| Fiscal Year | Project/Contractor | Due Date | Contract | Outlay | Balance |
|-------------|---|-----------|---------------------|--------------------|---------------------|
| 2013 | CHNEP FY13 Water Atlas Enhancements - USF | 9/30/2015 | \$61,112.00 | \$45,132.00 | \$15,980.00 |
| 2013 | CHNEP FY13 Numeric Nutrient Criteria for Tidal Creeks - SBEP | 9/30/2015 | \$31,000.00 | \$9,300.00 | \$21,700.00 |
| 2014 | CHNEP FY14 Coastal Charlotte Harbor Monitoring Network Upper - FWC & Charlotte County | 9/30/2015 | \$55,080.00 | \$0.00 | \$55,080.00 |
| 2014 | CHNEP FY14 Coral Cr Restoration Fish Monitoring - FWC | 9/30/2015 | \$40,000.00 | \$0.00 | \$40,000.00 |
| 2014 | CHNEP FY14 Coral Cr Restoration Juvenile Fish Monitoring - BTT | 9/30/2015 | \$50,000.00 | \$0.00 | \$50,000.00 |
| | Subtotal = | | \$248,712.00 | \$99,383.05 | \$149,328.95 |
| | TOTAL | | \$237,192.00 | \$54,432.00 | \$182,760.00 |

Table 4: Ongoing Public Outreach Projects

| Fiscal Year | Project/Contractor | Due Date | Balance |
|---------------|--|----------|---------------|
| 2014 | All Public Outreach Projects closed out at the end of the fiscal year. | N/A | \$0.00 |
| Total= | | | \$0.00 |

Outlay=Amount expended on project as of September 30, 2013.

Contract= Contracted amount.

Balance=Unexpended amount left on contract.

Table 5: FY15 Workplan Budget Amendment

| Task # | Task | Personnel | Fringe | Travel | Other | Total |
|---------------|------------------|------------------|------------------|-----------------|------------------|--------------------|
| 1 | Mgmt. Conference | \$136,869 | \$45,505 | \$15,000 | \$108,625 | \$305,998 |
| 2 | Outreach | \$49,574 | \$17,070 | | \$162,850 | \$229,493 |
| 3 | Research | \$64,940 | \$23,553 | | \$431,840 | \$520,334 |
| 4 | Restoration | \$44,977 | \$15,080 | | \$40,000 | \$100,057 |
| 5 | Legislation | \$6,060 | \$1,815 | | \$4,500 | \$12,375 |
| Total | | \$302,419 | \$103,023 | \$15,000 | \$747,815 | \$1,168,257 |

Table 6: FY15 EPA Cooperative Agreement

| Task # | Task | Personnel | Fringe | Travel | Other | Total |
|---------------|------------------|------------------|-----------------|-----------------|------------------|--------------------|
| 1 | Mgmt. Conference | \$141,200 | \$45,200 | \$15,000 | \$109,730 | \$304,130 |
| 2 | Outreach | \$57,100 | \$18,300 | | \$134,315 | \$212,715 |
| 3 | Research | | | | | |
| 4 | Restoration | \$13,035 | \$4,120 | | | \$21,155 |
| 5 | Legislation | | | | | |
| | In-Kind | | | | \$538,000 | \$538,000 |
| Total | | \$211,335 | \$67,620 | \$15,000 | \$782,045 | \$1,076,000 |

Table 7: FY15 SWFWMD Contract

| Task | Project | SWFWMD | Project Total |
|---------------|---|------------------|----------------------|
| 1 | CCHMN (Coastal Charlotte Harbor Monitoring Network) | \$55,080 | \$55,080 |
| 2 | Restoration Project | \$40,000 | \$40,000 |
| 3 | Staff Support | \$34,920 | \$69,840 |
| Totals | | \$130,000 | \$164,920 |

Table 8: FY16 Workplan Budget

| Task # | Task | Personnel | Fringe | Travel | Other | Total |
|---------------|------------------|------------------|------------------|-----------------|------------------|------------------|
| 1 | Mgmt. Conference | \$138,787 | \$76,612 | \$15,000 | \$108,625 | \$339,024 |
| 2 | Outreach | \$51,117 | \$27,606 | | \$162,850 | \$241,574 |
| 3 | Research | \$61,601 | \$11,442 | | \$115,080 | \$188,123 |
| 4 | Restoration | \$44,821 | \$23,851 | | \$80,000 | \$148,672 |
| 5 | Legislation | \$6,060 | \$3,661 | | \$4,500 | \$14,221 |
| Total | | \$302,387 | \$143,172 | \$15,000 | \$471,055 | \$931,614 |

Table 9: FY16 EPA Cooperative Agreement

| Task # | Task | Personnel | Fringe | Travel | Other | Total |
|---------------|------------------|------------------|------------------|-----------------|------------------|--------------------|
| 1 | Mgmt. Conference | \$138,787 | \$76,612 | \$15,000 | \$108,625 | \$339,024 |
| 2 | Outreach | \$40,442 | \$23,691 | | \$124,285 | \$188,418 |
| 3 | Research | \$7,485 | \$3,073 | | | \$10,558 |
| 4 | Restoration | | | | | |
| 5 | Legislation | | | | | |
| | In-Kind | | | | \$538,000 | \$538,000 |
| | | \$186,714 | \$103,376 | \$15,000 | \$770,910 | \$1,076,000 |

Table 10: FY16 Proposed SWFWMD Contract

| Task | Project | SWFWMD | Project Total |
|---------------|---|------------------|----------------------|
| 1 | CCHMN (Coastal Charlotte Harbor Monitoring Network) | \$55,080 | \$55,080 |
| 2 | Restoration Project | \$40,000 | \$40,000 |
| 3 | Staff Support | \$34,920 | \$69,840 |
| Totals | | \$130,000 | \$164,920 |

Table 11 represents the individual public education and information projects that will be addressed, in FY15 and FY16. No earlier projects were completed by September 30, 2014.

**Table 11: Summary Public Education and Information Projects List
(for FY15 and FY16)**

| FY | Code | Title | Amount |
|-------------------|-------------|--|---------------------|
| 2015 | CH2ADV | CHNEP Adventures in the Charlotte Harbor Watershed | \$9,950.00 |
| 2015 | CH2AST | CHNEP Outreach assistance | \$4,000.00 |
| 2015 | CH2CA | CHNEP Citizens Academy | \$21,900.00 |
| 2015 | CH2CAL | CHNEP Calendar | \$23,000.00 |
| 2015 | CH2COL | CHNEP collateral, etc. | \$5,000.00 |
| 2015 | CH2HH | CHNEP <i>Harbor Happenings</i> | \$34,000.00 |
| 2015 | CH2MIC | CHNEP Micro-grants | \$12,000.00 |
| 2015 | CH2POG | CHNEP Public Outreach Grants | \$25,000.00 |
| 2015 | CH2TAR | CHNEP Target audience programs | \$25,000.00 |
| 2015 | CH2TNF | CHNEP Charlotte Harbor Nature Festival | \$2,500.00 |
| 2015 | CH2TRA | CHNEP professional development/training workshops | \$500.00 |
| Subtotal = | | | \$162,850.00 |
| 2016 | CH2ADV | CHNEP Adventures in the Charlotte Harbor Watershed | \$9,950.00 |
| 2016 | CH2AST | CHNEP Outreach assistance | \$4,000.00 |
| 2016 | CH2CA | CHNEP Citizens Academy | \$21,900.00 |
| 2016 | CH2CAL | CHNEP Calendar | \$23,000.00 |
| 2016 | CH2COL | CHNEP collateral, etc. | \$5,000.00 |
| 2016 | CH2HH | CHNEP <i>Harbor Happenings</i> | \$34,000.00 |
| 2016 | CH2MIC | CHNEP Micro-grants | \$12,000.00 |
| 2016 | CH2POG | CHNEP Public Outreach Grants | \$25,000.00 |
| 2016 | CH2TAR | CHNEP Target audience programs | \$25,000.00 |
| 2016 | CH2TNF | CHNEP Charlotte Harbor Nature Festival | \$2,500.00 |
| 2016 | CH2TRA | CHNEP professional development/training workshops | \$500.00 |
| Subtotal = | | | \$162,850.00 |
| Total= | | | \$325,700.00 |

Table 12 represents the individual technical projects that will be addressed in FY14 (totaling \$204,260), plus carry-over projects as of October 1, 2013 (\$206,598) and FY15 (totaling \$179,000). Projects in the two fiscal years total \$589,849.

**Table 12: Summary Technical Projects List
(for FY14 and FY15)**

| | FY | Project Title | Amount |
|-------------------|-----------|---|------------------|
| 2014 | CH14BT | CHNEP FY2014 BTT Juvenile fish monitoring | \$50,000.00 |
| 2014 | CH14CC | CHNEP FY2014 Coral Creek Monitoring | \$40,000.00 |
| 2013 | CH14TC | CHNEP FY2014 Tidal Creeks project | \$21,700.00 |
| 2014 | CH14UP | CHNEP FY2014 CCHMN – Upper Charlotte Harbor | \$55,080.00 |
| 2013 | CH14WA | CHNEP FY2014 Water Atlas Enhancements | \$15,980.00 |
| Subtotal = | | | \$182,760 |
| 2015 | CH3CDP | CHNEP SWFWMD Restoration Project | \$40,000.00 |
| 2015 | CH3CMN | CHNEP CCHMN-Upper Charlotte Harbor | \$55,080.00 |
| 2015 | CH3LCH | CHNEP CCHMN-Lower Charlotte Harbor | \$10,000.00 |
| 2015 | CH3MJB | CHNEP Mangrove Heart Attack-Jim Beever | \$60,000.00 |
| 2015 | CH3MOR | CHNEP Morgan Park | \$40,000.00 |
| 2015 | CH3MRL | CHNEP Mangrove Heart Attack-Robin Lewis | \$10,000.00 |
| 2015 | CH3MTT | CHNEP Mangrove Heart Attack-Terry Tattar | \$5,000.00 |
| 2015 | CH3WA | CHNEP Water Atlas Maintenance | \$50,000.00 |
| 2015 | CH3WSP | CHNEP Watershed Summit Proceedings | \$19,000.00 |
| Subtotal = | | | \$289,080 |
| 2016 | CH3CMN | CHNEP CCHMN-Upper Charlotte Harbor | \$55,080.00 |
| 2016 | CH3LCH | CHNEP CCHMN-Lower Charlotte Harbor | \$10,000.00 |
| 2016 | CH3WA | CHNEP Water Atlas Maintenance | \$50,000.00 |
| 2016 | CH4MO | CHNEP Morgan Park | \$40,000.00 |
| 2016 | CH4SWD | CHNEP SWFWMD Restoration Project | \$40,000.00 |
| Subtotal = | | | \$195,080 |
| Total = | | | \$666,920 |

Table 13: Summary Overhead Estimates

| FY | Code | Project Title | Amount |
|-------------------|-------------|--|------------------|
| 2015 | CH1COM | CHNEP Communications | \$0.00 |
| 2015 | CH1MAT | CHNEP Department Materials and Supplies | \$3,000.00 |
| 2015 | CH1OAD | CHNEP Overhead Administrative Charges | \$81,500.00 |
| 2015 | CH1OCP | CHNEP Overhead Computer | \$14,000.00 |
| 2015 | CH1ORN | CHNEP Overhead Office Rent | \$3,425.00 |
| 2015 | CH1PRO | CHNEP Promotional Activities-Meeting Support | \$4,500.00 |
| 2015 | CH1REG | CHNEP Meeting Registration, under travel | \$2,000.00 |
| 2015 | CH1SER | CHNEP Services-Unanticipated Costs | \$1,000.00 |
| 2015 | CH5ANP | CHNEP ANEP Dues | \$4,500.00 |
| Subtotal = | | | \$113,925 |
| 2016 | CH1COM | CHNEP Communications | \$0.00 |
| 2016 | CH1MAT | CHNEP Department Materials and Supplies | \$3,000.00 |
| 2016 | CH1OAD | CHNEP Overhead Administrative Charges | \$81,500.00 |
| 2016 | CH1OCP | CHNEP Overhead Computer | \$14,000.00 |
| 2016 | CH1ORN | CHNEP Overhead Office Rent | \$3,425.00 |
| 2016 | CH1PRO | CHNEP Promotional Activities-Meeting Support | \$4,500.00 |
| 2016 | CH1REG | CHNEP Meeting Registration, under travel | \$2,700.00 |
| 2016 | CH1SER | CHNEP Services-Unanticipated Costs | \$1,000.00 |
| 2016 | CH5ANP | CHNEP ANEP Dues | \$4,500.00 |
| Subtotal = | | | \$114,625 |
| Total = | | | \$228,550 |

Staff and their Official Responsibilities

The CHNEP staff includes four professional positions. As shown in the sub-task descriptions, many deliverables are prepared in-house. Several grants have been submitted to a variety of funding agencies.

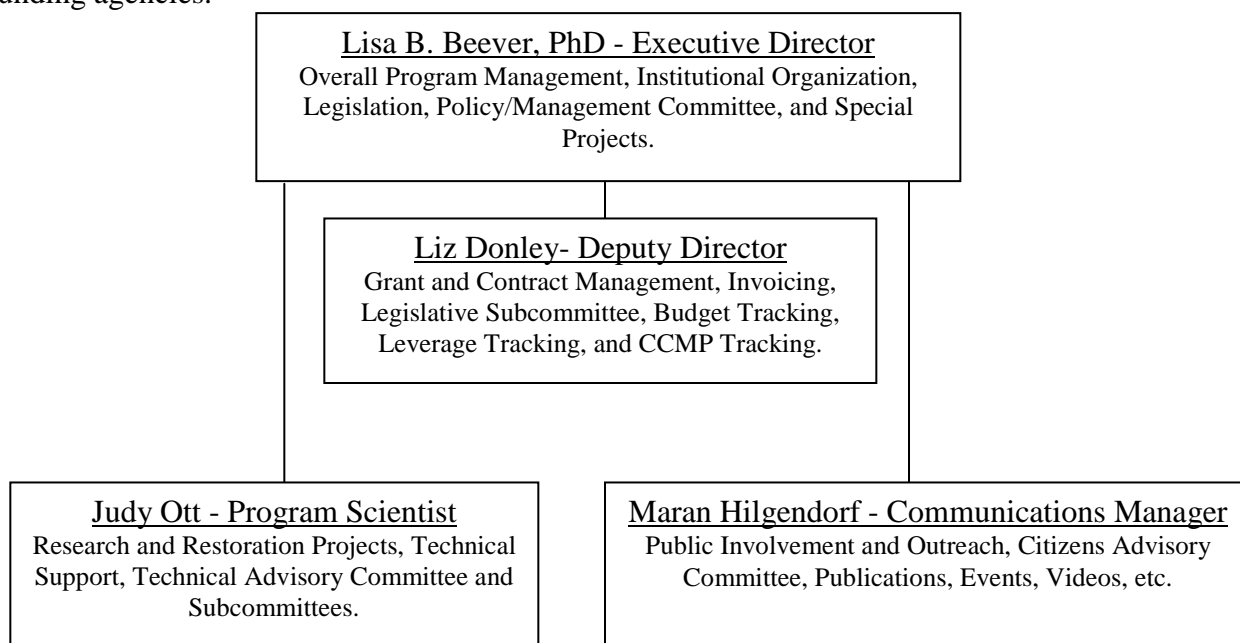


Table 14: Expected Staff Time Allocations by Task for FY15

| ProjCode | Title | Lisa | Liz | Maran | Judy | Hours |
|----------|-------------------------------|------|------|-------|------|-------|
| CHEPA1 | Management Conference | 555 | 894 | 250 | 330 | 2029 |
| CHEPA1 | Leave | 354 | 354 | 354 | 354 | 1416 |
| CHEPA2 | Outreach | 30 | 0 | 1182 | 0 | 1212 |
| CHDEP2 | Outreach-DEP | 50 | 0 | 250 | 0 | 300 |
| CHDEP3 | Research-DEP | 170 | 0 | 0 | 325 | 495 |
| CHSWF3 | Research-SWF | 231 | 250 | 0 | 212 | 693 |
| CHDEP4 | Restoration-DEP | 221 | 310 | 0 | 175 | 706 |
| CHEPA4 | Restoration-EPA | 210 | 160 | 0 | 300 | 670 |
| CHLOC5 | Advocacy & Legislative Action | 32 | 120 | 0 | 0 | 152 |
| CHWP15 | Mangrove Heart Attack | 235 | 0 | 52 | 392 | 679 |
| Total | | 2088 | 2088 | 2088 | 2088 | 8352 |

Table 15: Expected Staff Time Allocations by Task for FY16

| ProjCode | Title | Lisa | Liz | Maran | Judy | Hours |
|----------|-------------------------------|------|------|-------|------|-------|
| CHEPA1 | Management Conference | 582 | 1154 | 250 | 300 | 2286 |
| CHEPA1 | Leave | 354 | 354 | 354 | 354 | 1416 |
| CHEPA2 | Outreach | 30 | 0 | 1182 | 0 | 1212 |
| CHDEP2 | Outreach-DEP | 50 | 0 | 250 | 0 | 300 |
| CHDEP3 | Research-DEP | 170 | 0 | 0 | 325 | 495 |
| CHEPA3 | Research-EPA | 100 | 0 | 0 | 102 | 202 |
| CHDEP4 | Restoration-DEP | 160 | 260 | 0 | 160 | 580 |
| CHSWF4 | Restoration-SWF | 219 | 200 | 0 | 195 | 614 |
| CHLOC5 | Advocacy & Legislative Action | 32 | 120 | 0 | 0 | 152 |
| CHWP15 | Mangrove Heart Attack | 391 | 0 | 52 | 652 | 1095 |
| Total | | 2088 | 2088 | 2088 | 2088 | 8352 |

Cells in orange must be spent in the fiscal year. Cells in yellow may be carried into the next fiscal year. White cells have flexibility.

With the expected budget modification, hours under “Mangrove Heart Attack” may be carried to the early part of FY17.

New and Ongoing Projects

CHNEP projects are organized according to task. There are five tasks, with subtasks, as follows:

- Task 1: Management Conference
 - 1.1 Management Conference
 - 1.2 General Administration and Overhead
 - 1.3 Grants and Contracts Administration
- Task 2: Outreach
 - 2.1 Communications/Publications
 - 2.2 Events/Outreach
 - 2.3 Public Outreach Grants
 - 2.4 Micro-Grants
- Task 3: Research
 - 3.1 Research Coordination
 - 3.2 Targeted Research
- Task 4: Restoration
 - 4.1 Watershed Coordination
 - 4.2 Targeted Restoration
- Task 5: Legislative Action
 - 5.1 Legislative Agenda
 - 5.2 Advocacy and Review Procedures
 - 5.3 Leveraged Grants

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| 1.1 | Management Conference |
| Objective: To provide a committee structure that supports the implementation of the <i>Comprehensive Conservation and Management Plan (CCMP)</i> . | |
| Project Objective: Under Section 320 of the Clean Water Act, the CHNEP is required to convene a Management Conference for the seven purposes delineated at §320(b). | |
| Description: The primary committees of the CHNEP include the Policy Committee, the Management Committee, the Technical Advisory Committee (TAC), and the Citizens Advisory Committee (CAC). | |
| CCMP Priority Problem Addressed: All | |
| Potential Partners: Organizations and committee members represented in the Management Conference. | |
| FY15 Deliverables: <ul style="list-style-type: none"> ▪ Agenda Packets for committees and subcommittees ▪ Advertising and meeting space ▪ Adoption of FY15 Workplan ▪ Workplan Tracking System Update ▪ Evidence of extending CHNEP partnership ▪ Priority Action GPRA Report ▪ Travel to EPA/ANEP meetings ▪ Close –out of MOU with SWFRPC ▪ Triennial Performance Evaluation ▪ | Target Dates: <ul style="list-style-type: none"> ▪ Transmit and post one week before meeting ▪ Advertise on-line minimum of one week preceding date ▪ May 2015 ▪ September 30, 2015 ▪ September 2015 ▪ September 2015 ▪ November 2014 & Feb. 2015 ▪ February 2015 ▪ January through April 2015 |
| FY15 Deliverables: <ul style="list-style-type: none"> ▪ Agenda Packets for committees and subcommittees ▪ Advertising and meeting space ▪ Adoption of FY16 Workplan ▪ Evidence of extending CHNEP partnership ▪ Priority Action GPRA Report ▪ Workplan Tracking System Update ▪ Travel to EPA/ANEP meetings | Target Dates: <ul style="list-style-type: none"> ▪ Transmit and post one week before meeting ▪ Advertise on-line minimum of one week preceding date ▪ September 2016 ▪ September 2016 ▪ September 2016 ▪ December 2015 and February 2016 |
| Budget: \$100,000, staff and travel | |
| Intermediate Outcomes: Management Conference members and 4 primary committees are actively engaged in CHNEP's CCMP implementation. Access to citizens, scientific expertise and elected officials has been identified as the most valuable outcome of participating. | |
| Long Term Outcomes: Management Conference convenes on a regular basis and meets the seven purposes delineated in CWA section 320(b). A broad-based working relationship among various groups toward implementation of the CCMP. | |

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| 1.2 | General Administration and Overhead | |
| Objective: To support necessary administration of the CHNEP. | | |
| Project Objective: National Estuary Program Management Conferences may choose to be hosted by another agency. This task provides the necessary funding for CHNEP to implement those policies and processes. | | |
| Description: General administration includes general staff functions such as staff meetings. Activities required by the CHNEP Host Agency – City of Punta Gorda. Office space, utilities, IT support and financial/procurement/HR services. Supplies such as postage, rentals, telephone, computer/graphic supplies are included in this task. Unforeseen expenses that are at the Director’s discretion such as special computer equipment or software, training materials, subscriptions, memberships, etc. are included. The CHNEP was chosen in FY13 for in-depth audit of grants compliance. The CHNEP was deemed in compliance by the auditors. | | |
| CCMP Priority Problem Addressed: All | | |
| Potential Partners: City of Punta Gorda | | |
| FY15 Deliverables: <ul style="list-style-type: none">FY14 Audit ReportAgenda items for City Council, draft resolutions | | Target Dates: <ul style="list-style-type: none">February 2015Biweekly |
| FY16 Deliverables: <ul style="list-style-type: none">FY15 Audit ReportAgenda items for City Council, draft resolutions | | Target Dates: <ul style="list-style-type: none">March 2016Weekly |
| Budget: \$12,000 staff, \$121,925 overhead and \$4,200 supplies | | |
| Intermediate Outcomes: Ensure compliance with applicable, Federal, state and City of Punta Gorda policies. | | |
| Long Term Outcomes: Successful implementation of CHNEP personnel, purchasing and administrative policies. | | |

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| 1.3 | Grants and Contracts Administration |
| Objective: To implement the CCMP by seeking grants and ensuring compliance with awarded grant requirements, including reporting and invoicing. | |
| Project Objective: The annual EPA Assistance Grant, and the grants, contracts and purchase orders through which CHNEP partners fund the program contain reporting and invoicing requirements that must be fulfilled. This task supports both the compliance with these requirements and efforts to seek and develop proposal partnerships, and administer grants to implement the CCMP. | |
| Description: Ensure compliance with conditions of awarded grants, and cooperative assistance from Federal, state, local agencies and private sources. Develop and submit quarterly progress reports and final project reports as required. Invoice funding sources as required; ensure successful project progress and completion. Develop contracts, PO's and agreements with funding partners and for sub-awards and sub-contracts. Identify potential sources of funding for projects that support the CCMP. This task also supports staff time for the management of grants that do not include administrative support in the award, such as the FDEP annual assistance grant. In FY 2014, the CHNEP submitted 10 major grant proposals in addition to the annual EPA programmatic application, FDEP funding agreement and SWFWMD annual funding agreement. | |
| CCMP Priority Problem Addressed: All | |
| Potential Partners: City of Punta Gorda, other local and county governments, organizations and committee members represented in the Management Conference; organizations that implement the CCMP through projects and activities. | |
| FY14 Deliverables: <ul style="list-style-type: none"> ▪ Quarterly Progress Reports as required ▪ EPA semi-annual Progress and MBE/WBE Reports ▪ Final Reports (financial close out, work products) ▪ Invoices for payment ▪ Sub-contracts, sub-awards | Target Dates: <ul style="list-style-type: none"> ▪ January, April, July, October ▪ April and October ▪ As Required ▪ As Required ▪ As Required |
| FY15 Deliverables: <ul style="list-style-type: none"> ▪ Quarterly Progress Reports as required ▪ EPA semi-annual Progress and MBE/WBE Reports ▪ Final Reports (financial close out, work products) ▪ Invoices for payment ▪ Grant summaries and Draft City of Punta Gorda Resolutions for all grant submittals, ▪ Summaries of funding agreements and Draft City of Punta Gorda Resolutions for all partner funding agreements ▪ Grant Applications ▪ Formal requisitions and sub-contracts, sub-awards ▪ Request for payments to ASAP for Federal grants | Target Dates: <ul style="list-style-type: none"> ▪ January, April, July, October ▪ April, October ▪ As Required ▪ As Required ▪ As Required ▪ As Required ▪ As Required ▪ As Required ▪ As Required ▪ Monthly or bi-monthly |
| Budget: \$30,000, staff | |
| Intermediate Outcomes: Maintain compliance with awarded contracts and grants requirements; ensure full reimbursement of contract and grant funded activities, deliverables. | |
| Long Term Outcomes: Secure funding for CHNEP CCMP implementation. | |

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| 2.1 | Communications/Special Publications |
| Objective: To provide essential ongoing communications so that the CHNEP can address specific requirements and issues associated with the <i>Comprehensive Conservation and Management Plan (CCMP)</i> . | |
| Project Objective: To provide people with information that will assist them in making daily choices that protect and improve estuaries and watersheds. | |
| Description: SG-1 requires communication with the public. Key methods are through the website, quarterly magazines and special publications. Special publications that reach new audiences, capture the imagination of citizens and broaden our partnerships are tested and improved upon. The annual calendar is very popular, routinely brings in the most number of donations to the program and expands the knowledge of citizens who do not normally participate in our programs. <i>Adventures in the Charlotte Harbor Watershed</i> , the children's book, reaches every child in a certain age class within the study area's public school system. Videos reach the broad television and Internet viewing public. | |
| CCMP Priority Problem Addressed: Stewardship Gaps | |
| Potential Partners: Printers, School Districts, Artists, Environmental Educators | |
| FY15 Funded Deliverables: <ul style="list-style-type: none"> ▪ Quarterly Magazine ▪ Website ▪ 2015 Calendar ▪ <i>Adventures</i> Book for Children ▪ Collateral, Displays, Reprintings, etc. ▪ Outreach Assistance ▪ Strategic Communication Plan Initiatives | Target Dates: <ul style="list-style-type: none"> ▪ January, April, July, October ▪ Ongoing ▪ October 2014 ▪ February 2015 ▪ Ongoing ▪ Ongoing ▪ September 2015 |
| FY16 Funded Deliverables: <ul style="list-style-type: none"> ▪ Quarterly Magazine ▪ Website ▪ 2016 Calendar ▪ <i>Adventures</i> Book for Children ▪ Collateral, Displays, Reprintings, etc. ▪ Strategic Communication Plan Initiatives | Target Dates: <ul style="list-style-type: none"> ▪ January, April, July, September ▪ Ongoing ▪ October 2015 ▪ by February 2016 ▪ Ongoing ▪ September 2016 |
| Budget: \$97,850 for communications and special publications projects, plus \$17,500 staff | |
| Intermediate Outcomes: The CHNEP will provide information about itself, including the CCMP and success of its partners, through a multi-channel multi-media approach appropriate for each particular audience. | |
| Long-Term Outcomes: Increase number of people engaged in the CHNEP who are aware of the program and issues, who change their behavior and who become a partner helping CHNEP fulfill its plan to protect the natural environment of southwest Florida in order to protect the estuaries from Venice to Bonita Springs. | |

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| 2.2 | Events/Outreach |
| Objective: To provide events and outreach programs to address specific requirements associated with implementation of the <i>Comprehensive Conservation & Management Plan (CCMP)</i> . | |
| Project Objective: Events involve people in the stewardship of their local natural resources. All events are developed in a collaborative way and typically receive funding from a broad partnership. They are developed to fill gaps in opportunities that are provided within the watershed. | |
| Description: The annual Charlotte Harbor Nature Festival has been held since 2002. It is a regional day-long opportunity for the public to meet with area environmental organizations and others. The CHNEP works with NOAA and others to bring at least one professional development opportunity to area public outreach and environmental education specialists. Twice a year an environmental education program is held to provide an opportunity to share knowledge, collaborate and network. Since 2012 an annual conservation lands workshop is held to provide an opportunity to share knowledge, collaborate and network. A Watershed Summit is held every three years with the next one scheduled for 2017. Since 2003, when the Watershed Summit is not held, the CHNEP works with area partners to bring public workshops, tailored to a particular community's needs. National Estuaries Days is celebrated with our partners as Estuaries Day, Every Day and are often supported with micro-grants. Opportunities to supplement Conservation Landscaping efforts with partners will continue. Opportunities to target audiences as identified in the CCMP will continue. | |
| CCMP Priority Problem Addressed: Stewardship Gaps | |
| Potential Partners: Environmental Educators | |
| FY15 Deliverables: <ul style="list-style-type: none"> Charlotte Harbor Nature Festival Professional Development Workshops CHNEP Environmental Education Program Conservation Landscaping Programs Guides, workshops, etc. to target audiences National Estuaries Days/Estuaries Day, Every Day | Target Dates: <ul style="list-style-type: none"> November 22, 2014 Dec. 3-4, 2014; Dec. 9-10, 2014, TBD June 5, 2015 and Sept. 2015 September 10, 2015 Ongoing Ongoing |
| FY16 Deliverables: <ul style="list-style-type: none"> Charlotte Harbor Nature Festival Professional Development Workshop CHNEP Environmental Education Program Conservation Landscaping Programs Guides, workshops, etc. to target audiences National Estuaries Days/ Estuaries Day, Every Day | Target Dates: <ul style="list-style-type: none"> November 21, 2015 TBD May 2016 and Sept. 2016 Feb. 2016 Ongoing Ongoing |
| Budget: \$28,000 for events, plus \$17,500 staff | |
| Intermediate Outcomes: The CHNEP will provide information through a variety of face-to-face meetings, workshops and events that engage various audiences. | |
| Long-Term Outcomes: Increase number of people engaged in the CHNEP who are aware of the program and issues, who change their behavior and who become a partner helping CHNEP fulfill its plan to protect the natural environment of southwest Florida in order to protect the estuaries from Venice to Bonita Springs. | |

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| 2.3 Public Outreach Grants | |
| Objective: To support CHNEP partners public outreach initiatives to further the <i>Comprehensive Conservation and Management Plan</i> (CCMP). | |
| Project Objective: Public outreach grants broaden participation of individuals and groups for implementation of the CCMP. Often, the best public outreach grant ideas are replicated elsewhere in the watershed, at no cost to CHNEP. | |
| Description: Public Outreach Grant projects occur in the CHNEP study area and facilitate public education of environmental issues identified in the CCMP. Projects are now typically completed in the fiscal year in which the award was made. No matching funds are required and the maximum funding per project is \$5,000. Information on all the projects funded with a grant is posted on the website at www.chnep.org/Grants.html . | |
| CCMP Priority Problem Addressed: Stewardship Gaps | |
| Potential Partners: Grant Applicants | |
| FY15 Deliverables: <ul style="list-style-type: none"> Public Outreach Grants (POG) FY15 Guidance Document Six public outreach grant projects | Target Dates: <ul style="list-style-type: none"> December 2014 Selected October 2014 Completed September 2015 |
| FY16 Deliverables: <ul style="list-style-type: none"> Public Outreach Grants (POG) FY16 Guidance Document Approximately 10 public outreach projects | Target Dates: <ul style="list-style-type: none"> April 2015 (postponed from Dec. due to office move) Selected October 2015 Completed by September 2016 |
| Budget: \$25,000 in grants, plus \$17,500 staff | |
| Intermediate Outcomes: To further the partnership to protect and restore the greater Charlotte Harbor estuarine system and watershed, the CHNEP offers Public Outreach Grants to citizens, organizations, businesses, government agencies, schools, colleges and universities. The CHNEP has supported many types of initiatives with Grants but all have furthered the CCMP. | |
| Long-Term Outcomes: Increase number of partners who are conducting projects that help fulfill the CCMP. | |

Public Outreach Grants

Public Outreach Grants applicants are now requested to complete the project in the fiscal year in which the award was made. The results of these projects are posted at www.chnep.org/Grants/POGAwarded.html. FY15 Public Outreach Grants include:

Taylor Ranch Elementary and Venice High School Reach into the Community with Conservation

Kay Thorpe Bannon

Third grade students at Taylor Ranch Elementary will reach into their home communities with native plant gardening, combined with wildlife conservation information, storytelling and presentations. Student and family awareness of habitat loss will increase and a sense of stewardship for our Florida environment will be encouraged. This project is an extension of grants completed with Venice, Taylor Ranch and Garden Elementary Schools, during which students worked with the Venice High School and community groups to address wildlife conservation issues as well as to install native plant gardens on the grounds of each elementary school. Their work will be chronicled in school newspapers and featured in local papers. The

CHNEP is providing \$1,534 toward this \$4,201 project. This project helps implement the CCMP by fulfilling SG-H, SG-F and WQ-K.

EcoCamp 2015

Charlotte Harbor Environmental Center

Two five-half day summer camps will be offered to up to 20 children ages 8 to 14 at Alligator Creek in Punta Gorda and Cedar Point Park in Englewood. The campers will have intensive, hands-on studies of water resource issues and concepts, including guest speakers, field trips and outdoor experiences. The children will learn and understand the interconnectedness of life within the estuary and how their action may affect the balance of this ecosystem. They will learn to embrace new experiences, to get out in nature and explore our beautiful and important estuaries and natural resources. The CHNEP is providing \$2,000 toward this \$3,800 project. This project helps implement the CCMP by fulfilling SG-F and SG-H.

Reduce, Recycle, Replenish, Restore: Community Rain Barrels

City of North Port Utilities

A year-round Water Stewardship Outreach Program involves, informs and inspires the community to adopt water conservation and protection practices in their daily lives. The rain barrel design contest for students in grades 6 to 12 will help raise awareness about water efficiency and the most common causes of storm water runoff pollution and what steps individuals can take to reduce this kind of pollution in local waterways, such as the Myakkahatchee Creek, which is North Port's main source of drinking water and home to many fish and wildlife. The contest will raise awareness on global pollution issues and help the entire community realize the importance of keeping waterways clean. The CHNEP is providing \$492 toward this \$492 project. This project helps implement the CCMP by fulfilling SG-1 and HA-P.

Natural Resource Education Station

City of Winter Haven

The City is committed to increasing environmental literacy in the community. This project will reach those who visit the City's busiest public facility, the library. The station will provide a variety of educational opportunities for patrons of all ages, including a digital touch screen program that allows participants to explore different components of the water cycle as it relates to the city, the Peace River and Charlotte Harbor. The CHNEP is providing \$2,600 toward this \$8,303 project. This project helps implement the CCMP by fulfilling SG-A, SG-D, SG-G and SG-K.

Harlem Heights Elementary Schools' Outdoor Classroom

Florida Native Plant Society Coccoloba Chapter

An outdoor classroom at Lee County's largest elementary school will provide hands-on learning to the 1,100 children by creating an outdoor learning environment in a wetland where fresh and salt waters mix in a mangrove forest. The CHNEP is providing \$3,000 toward this \$100,000 project. This project helps implement the CCMP by fulfilling SG-A, SG-D, WQ-M, HA-P, FW-P.

Peace River Watershed Educational Program: Lake Somerset Planting Project

Lakes Education/Action Drive

An ecological restoration of Lake Somerset shoreline will aid in stabilizing the bank to reduce erosion by planting appropriate vegetation and removing exotic plants. The plants will help improve water quality as well as enhance wildlife. Local student volunteers will help in the restoration and will create a short documentary to present to their schools and elsewhere. The CHNEP is providing \$3,957 toward this \$12,700 project. This project helps implement the CCMP by fulfilling SG-A, SG-C, SG-D, SG-H, SG-K, WQ-I, WQ-M, HA-P, FW-N and FW-P.

Please see **FY2014 Completed Major Projects and Actions, Communities of Practice**, for additional project information

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| 2.4 | Micro-Grants |
| Objective: To provide year-round support of CHNEP partners public outreach initiatives that furthers the <i>Comprehensive Conservation and Management Plan (CCMP)</i> . | |
| Project Objective: Micro-grants are a wonderful way for individuals or groups with a good idea that needs just a little bit of funding to implement that idea. It is a way to harness the creativity of people and test ideas. | |
| Description: One of the four initial Public Education Goals is “to establish and maintain environmental educational efforts with organizations, educational centers, and government agencies.” This project is also known as “micro-grants” which usually provide up to \$250 to support immediate public outreach opportunities. These funds allow the Program Office to respond to requests as they arise. The applicants provide audiences with information about CHNEP. Awards are granted under the Director’s authority to implement the CCMP. Information on all the projects funded with a grant is posted on the website at www.chnep.org/Grants.html . | |
| CCMP Priority Problem Addressed: Stewardship Gaps | |
| Potential Partners: Grant Applicants | |
| FY14 Deliverables: | Target Dates: |
| ▪ Approximately 50 projects and events | ▪ Available year round |
| FY15 Deliverables: | Target Dates: |
| ▪ Approximately 50 projects and events | ▪ Available year round |
| Budget: \$12,000 in grants plus \$17,500 staff | |
| Intermediate Outcomes: To further the partnership to protect and restore the greater Charlotte Harbor estuarine system and watershed, the CHNEP offers micro-grants to citizens, organizations, businesses, government agencies, schools, colleges and universities. The CHNEP has supported many types of initiatives with Grants but all have furthered the CCMP. | |
| Long-Term Outcomes: Increase number of partners who are conducting projects that help fulfill the CCMP. | |

Fiscal Year 2014 Micro-Grants

With the move to the City of Punta Gorda, micro-grant requests in FY15 weren’t considered until January 8, 2015.

| Contractor | MicroGrant Support |
|---|--|
| AWRA Florida Section: Karen Bickford | Southwest Florida Water Resources Conference: January 23, 2014, 23nd annual Sea Level Rise Flight or Fight |
| Big Brothers Big Sisters of the Sun Coast: Natalie Anderson | Cedar Point Wading Trip |
| Calusa Group of the Sierra Club: Connie Langmann | Bag It |
| Calusa Nature Center and Planetarium: Solveig Poynter | Life in the Micros |
| Calusa Nature Center and Planetarium: Solveig Poynter | Fire in Florida’s Ecosystems – Interacting Training Workshop: May 28, 2014 |
| Cape Coral Friends of Wildlife | Burrowing Owl Festival: February 22, 2014 -- 12th annual |
| Cape Coral Friends of Wildlife: Pascha Donaldson | Burrowing Owl Burrow Stakes |

| Contractor | MicroGrant Support |
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| Cape Coral Historical Society: Richard Roux | Cape Coral Historical Museum Florida Native Plant Signs and Stakes |
| Charlotte Harbor Preserve State Park: Ryan S. Brown | Bonneted Bat Housing Project |
| City of Bowling Green: Jerry Conerly | Jones Street Landscaping |
| City of Cape Coral: Honey Archey | Little Free Libraries in the City of Cape Coral (with focus on environmental literature) |
| City of North Port | Summer Camp Vegetable Garden, Composting and Worm Farm |
| East County Water Control District: Carla Ulakovic | Harns Marsh Wings Over Water Festival: Feb. 28-March 1, 2014 |
| East Lee County High School: Lee Moody | Biodiversity at Harns Marsh |
| Englewood Sailing Club: Hugh Moore | Three Summer Sailing Camps for Youngsters 9 to 15: 2014 |
| Estero Bay Buddies: Reggie McNeill | Paddling the Estero River: November 2, 2013 |
| Explorations V Children's Museum: Sue Schluender | Children's Festival: April 12, 2014 |
| FDEP South District: Terry Cerullo | FDEP South District Veterans Memorial Native Florida Plant Garden |
| FNPS Mangrove Chapter: Jane Wallace | Plant Native Day: February 22, 2014 |
| Friends for Extension: Betty Staugler | Great Bay and Sound Scallop Search in Lemon Bay and Gasparilla Sound: July 26, 2014 |
| Green Horizon Land Trust: Rachelle Selser | Green Horizon Land Trust Annual Meeting: March 2, 2014 |
| Gregg Klowden | Distributional changes of non-native geckos in southwest Florida – A 10 year study |
| Happehatchee Center: Genelle Grant | Mangrove Gathering Eco Café: March 22, June 21, Sept. 20 and Dec. 20, 2014 |
| Hardee Outdoor Classroom: Kayton Nedza | Ecocamp Cayo Costa Boat Trip 2014 |
| Keep Lee County Beautiful: Tricia Francher | Monofilament Madness - Marine Cleanup: October 26, 2013 |
| L.A. Ainger Middle School: Natalia Shea | Florida Native Beautification Landscape Projects at L.A. Ainger Middle School |
| Lakes Education Action Drive: Corrine Burgess | Lakes Appreciation Month |
| Lakes Education/Action Drive: Corine Burgess | Project E.A.G.L.E. |
| Laurel Rhodes | Sarasota County Legacy Trail Butterfly Interpretive Materials Installation |
| Lee BCC: Nancy Kilmartin | Industrial thermometer for Manatee Park |
| Lee County BOCC Parks and Recreation: Theresa Farrell | Florida Native Plant Landscaping at Karl J Drews Community Center in Fort Myers |
| Lemon Bay Conservation: Jane Wallace | Native Milkweed Plantings for the Butterfly Habitat at Wildflower Preserve |
| Manatee County Friends of Extension: Samantha Kennedy | Manatee County Water School 2014 |
| Meagan Shivers | CHNEP Student Ambassador Outreach Program messaging |

| Contractor | MicroGrant Support |
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| | bracelets |
| Myakka River Management Coordinating Council | Myakka River Management Coordinating Council website 10/1/2014 to 9/30/2015 |
| Nature Connections: Mary Lundeborg, Betty Baust | Coastal Native Plants Brochure for Stump Pass State Park |
| Nora Demers | Sign replacement for Mulloch Creek Demonstration Florida Yards |
| Pete Quasius and Don Eslick | EcoVoice: Environmental Voice of Southwest Florida: 2009 sponsorship |
| Polk County Extension: Shannon A. Carnevale | Polk County Extension Water School |
| Polk County Utilities: Jacqueline Hollisters | 7 Rivers Water Festival: May 3, 2014 |
| Rotary Park: Vanessa Hazelton | Rotary Park Native Plant Label Markers |
| School District of Lee County: Rick Tully | Six-Mile Cypress Inspirational Plaque |
| Southwest Florida Gulf Coast Regional Envirothon | Southwest Florida Gulf Coast Regional Envirothon: December 13, 2013 |
| Special Equestrians/FGCU Service Learning: Emily Perez | Special Equestrians Native Plants |
| Team Parkside Lakes and Waterways Committee: Kathryn Preston | Parkside Lakes and Waterways Environmental Education Information and Resource Brochure |
| UF/IFAS/Lee County Extension: Joy Hazell | Great Bay and Sound Scallop Search in Pine Island Sound: August 23, 2014 |
| Venice Area Audubon Society: Alena Capek | Venice Area Audubon Bird Study Awards: Alena Capek |
| Venice Area Audubon Society: Brenda Bossman | Venice Area Audubon Bird Study Field Trip |

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| 3.1 | Research Coordination |
| Objective: To coordinate resource monitoring to assure availability of consistent, reliable, technically sound estuarine, freshwater, wetland and upland data throughout the CHNEP study area and identify research needs that can be implemented through partnerships. | |
| Project Objective: To protect and restore natural systems, sufficient region-wide water quality, biological and physical data and analyses are needed to understand the status, trends and complex interactions of the systems. Activities focus on coordinating partner organizations to collect, analyze and communicate scientific information from throughout the CHNEP study area. Funding under this program supports staff coordination of data collection and monitoring efforts. | |
| Description: CHNEP coordinates and assists partners with water quality, seagrass and shellfish monitoring including: Coastal Charlotte Harbor Monitoring Network (CCHMN), Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network (CHEVWQMN), Regional Ambient Monitoring Program (RAMP), FDEP seagrass transect monitoring, Water Management District seagrass aerial mapping, and FWC/Sea Grant shellfish monitoring. Participate in the Southwest Florida Tidal Creek, Seagrass, and Shellfish Working Groups. Identify opportunities to fill gaps and enhance consistency in water quality, vegetation and shellfish data. Provide partners with natural resource data and analyses throughout the CHNEP for studies including: Shellfish Restoration Plans, Southwest Florida Feasibility Study, Caloosahatchee River Watershed Protection Plan, Impaired Waters determinations, Minimum Flows and Levels and Water Supply Plans. | |
| CCMP Priority Problem Addressed: Water Quality Degradation and Fish and Wildlife Habitat loss | |
| Potential Partners: FDEP, SWFWMD, SFWMD, Counties, Cities, Conference Members | |
| FY15 Deliverables: <ul style="list-style-type: none"> ▪ Monthly CCHMN water quality monitoring. ▪ Monthly CHEVWQMN water quality monitoring. ▪ Quarterly RAMP meeting of partners. ▪ Annual CCHMN field audits, reporting and meeting. ▪ Annual FDEP seagrass transect monitoring. ▪ Bi-annual FL Water Resource Monitoring Council | Target Dates: <ul style="list-style-type: none"> ▪ Monthly ▪ Monthly ▪ Quarterly ▪ May 2015 ▪ September 2015 ▪ Spring and Fall 2015 |
| FY16 Deliverables: <ul style="list-style-type: none"> ▪ Monthly CCHMN water quality monitoring. ▪ Monthly CHEVWQMN water quality monitoring. ▪ Quarterly RAMP meeting of partners. ▪ Bi-annual SWFWMD and SFWMD seagrass aeriels. ▪ Annual CCHMN field audits, reporting and meeting. ▪ Annual FDEP seagrass transect monitoring. ▪ Triennial Watershed Summit Proceedings ▪ Bi-annual FL Water Resources Monitoring Council | Target Dates: <ul style="list-style-type: none"> ▪ Monthly ▪ Monthly ▪ Quarterly ▪ January 2016 ▪ May 2016 ▪ September 2016 ▪ Fall 2016 ▪ Spring and Fall 2016 |
| Budget: \$12,000 in staff | |
| Intermediate Outcomes: CHNEP will coordinate monthly water quality sampling throughout the estuaries and assist with field sampling in Lower Charlotte Harbor. CHNEP will assist partners with seagrass transect monitoring and aerial photography. CHNEP will ensure availability of water quality and seagrass data to partners through the CHNEP Watershed Summit Proceedings and Water Atlas. | |
| Long Term outcomes: Increase in water quality and seagrass data available for status and trends analyses, resource management, implementation of regulatory programs and education of the public and elected officials throughout the watershed. | |

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| 3.2 | Targeted Research |
| Objective: To conduct research targeted to implement the <i>Comprehensive Conservation and Management Plan</i> (CCMP) Priority Actions and fill Environmental Indicators gaps through partnerships. | |
| Project Objective: To continue to effectively restore water quality, hydrology and habitat conditions throughout the CHNEP study area in the future, targeted research is conducted to fill critical gaps in knowledge needed to support resource management and decision-making. Research focuses on topics identified by the TAC and implemented through partnerships with assistance from the CHNEP scientific community. | |
| Description: CHNEP contracted with three partners to conduct juvenile fishery monitoring: Mote Marine Laboratory in Alligator Creek, Bonefish and Tarpon Trust in Coral Creek and FWC in Coral Creek. CHNEP is working with Sarasota Bay Estuary Program (SBEP), Tampa Bay Estuary Program (TBEP), Florida Fish and Wildlife Conservation Commission (FWC) and local counties to develop rational numeric nutrient criteria for tidal creeks based on water quality, fishery and benthic macroalgae relationships. CHNEP hosted the Caloosahatchee River Submerged Aquatic Vegetation (SAV) Targets Science Forum to guide partners with compiling SAV data, identifying data gaps and initiating needed monitoring and analyses. | |
| CCMP Priority Problem Addressed: All | |
| Potential Partners: Mote, SBEP, TBEP, FWC, SWFWMD, USF, Conference Members | |
| FY15 Deliverables: <ul style="list-style-type: none"> Alligator Creek Restoration Fishery Monitoring Caloosahatchee River Submerged Aquatic Vegetation Targets Science Forums CHNEP Water Atlas Enhancements Coral Creek Restoration Fishery Community Monitoring Numeric Nutrient Criteria for Tidal Creek Wetlands field sampling for water quality, fishery and benthic macroalgae CHNEP Water Atlas Maintenance | Target Dates: <ul style="list-style-type: none"> October 2014 December 2014 and March 2015 May 2015 September 2015 December 2015 Ongoing |
| FY16 Deliverables: <ul style="list-style-type: none"> Coral Creek Restoration Juvenile Tarpon Fishery Monitoring Mangrove Heart Attack Project CHNEP Water Atlas Maintenance | Target Dates: <ul style="list-style-type: none"> June 2016 December 2016 Ongoing |
| Budget: \$179,000 in projects, \$20,700 in staff | |
| Intermediate Outcomes: CHNEP will assist partners in conducting field sampling, analyzing and reviewing data and developing estuarine water quality-water clarity models and tidal creek numeric nutrient criteria throughout the study area and southwest Florida. CHNEP will ensure availability of water clarity models, water quality and fishery data and suggested tidal creek numeric nutrient criteria to partners through the CHNEP Watershed Summit Proceedings, Water Atlas, partners' websites and Management Conference meetings. | |
| Long Term Outcomes: Increase in water quality-water clarity analytical tools and numeric nutrient criteria available for resource management, implementation of regulatory programs and education of the public and elected officials throughout the study area. | |

Targeted Research

Targeted Research Projects are initiated to fill in Environmental Indicators gaps, provide topic-specific data and answer questions raised by the TAC to improve resource management throughout the CHNEP and fulfill the CCMP. The complex technical projects are implemented with CHNEP support to one or multiple partners and generally take more than one year to complete to allow for adequate data collection and analysis and review by the TAC. Results of the Targeted Research Projects are available on the CHNEP website and Water Atlas. Targeted Research Projects to be completed in FY15 and FY16 are described briefly below.

Targeted Research Projects to be Completed in Fiscal Year FY15 and FY16

CHNEP Water Atlas Enhancements

University of South Florida, FY13 funding, \$15,980, due May 2015

To continue and improve public access to the wealth of natural resource data available on the CHNEP Water Atlas, University of South Florida-Florida Center for Community Design is adding tools to allow users to create fecal coliform contour maps and water quality status and trend analyses, as well as learn about Volunteer Water Monitoring, Shoreline Survey and the Charlotte Harbor Flatwoods Initiative. Improved access to water quality and shoreline condition data and analysis tools allows resource managers; elected officials and the public make better informed decisions. The Water Atlas Enhancement and Maintenance Projects implement many CCMP Priority Actions, including: WQ-C, SG-D, SG-K, SG-R and SG-S.

Coral Creek Restoration Fishery Community Monitoring

FWC, FY14 funding, \$40,000, due September 2015

To assist the SWFWMD, FDEP and partners with assessing the functional effects of hydrologic and restoration activities adjacent to Coral Creek, CHNEP contracted with FWC Fisheries Independent Monitoring to conduct fishery community monitoring in the creek prior to initiation of restoration activities. The fish community information will augment other fish, water quality, seagrass and wetland vegetation monitoring to evaluate the response of the habitats and biological community to the restoration. The project includes monthly sampling within the creek utilizing FWC tidal creek juvenile fishery methods from February 2014 – January 2015. Deliverables include data, analyses, GIS shapefiles and reports. The fishery monitoring project addresses several CHNEP CCMP Priority Actions and Environmental Indicators including: FW-F, WQ-E, HA-N and FW-d.

Numeric Nutrient Criteria for Tidal Creek Wetlands

Sarasota Bay Estuary Program, FY13 funding, \$21,700, due December 2015

To fill geographic and data gaps between recently adopted quantitative nutrient criteria for fresh and estuarine waters, CHNEP is working with SBEP, TBEP, and local partners to develop suggested numeric nutrient criteria for tidal creeks throughout southwest Florida. The project is evaluating the relationships between key water quality parameters (dissolved oxygen, temperature, salinity, nitrogen and phosphorus), fishery communities and benthic algae (chlorophyll) in a wide range of tidal creek conditions between TBEP and CHNEP. The project includes developing the field and data analyses methods, field sampling and analysis and reporting of data and results. The results will be available on the CHNEP Water Atlas and enhance resource managers and regulators ability to determine water quality conditions and impairments in tidal creeks in southwest Florida. The Numeric Nutrient Criteria for Tidal Creek Wetlands project implements many CCMP Priority Actions, including: WQ-B and WQ-G.

Coral Creek Restoration Juvenile Tarpon Fishery Community Monitoring

Bonefish and Tarpon Trust, FY14 Mosaic funding and CHNEP staff support, \$50,000, due June 2016

To assist the SWFWMD, FWC and Bonefish and Tarpon Trust (BTT) with better understanding how restoration project design can enhance juvenile tarpon habitat, CHNEP will implement a research project to compare fishery response to different hydrologic restoration designs in six finger canals along Coral Creek. CHNEP, FWC and BTT scientists will assist SWFWMD resource managers with designing a series of configurations of ponds and wetlands in the finger canals that will be incorporated into the SWFWMD restoration activities along Coral Creek. CHNEP will contract with BTT, who will provide match, to conduct before and after, control and response juvenile tarpon fishery monitoring to assess fishery response to the different restoration techniques. Deliverables, including data, analyses, GIS shapefiles and reports, will be reviewed by the TAC and approved by the Management Conference. The project addresses CHNEP CCMP Actions and Indicators including: FW-F, WQ-E, HA-N and FW-d.

Mangrove Heart Attack Project

Southwest Florida Regional Planning Council, Coastal Resources Group, Terry Tattar, FY15 EPA Wetland Program Development Funding and CHNEP staff support, \$75,000, due December 2016

To assist EPA, SWFRPC and partners with better understanding saltwater wetland loss, CHNEP will implement a research project to define the distribution, abundance, and composition of saltwater wetlands, including mangrove ecosystems throughout the CHNEP study area. The project will also assess the fate of these ecosystems as they respond to human caused hydrologic and climate change stressors; identify locations of mangrove forest die-offs and location of potential future loss; document changes in the position, composition and health of the landward and waterward edges of fringing mangrove ecosystems, and document changes in the relative proportions of mangrove ecosystem types in Southwest Florida. The project will focus on large mortality areas with adjacent areas showing stress and long term trends indicating little or no natural recovery, and expansion of the die-off to potentially thousands of acres. The project implements many CHNEP Priority Actions including: FW-1, FW-C, and SG-S and helps fulfill Research Needs relating to mangrove species composition monitoring.

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| 4.1 | Watershed Coordination |
| Objective: To develop and update a CHNEP Restoration Plan and participate in activities which implement the plan and CCMP objectives and actions relating to restoration. | |
| Project Objective: To most effectively restore water quality, hydrology and habitat, CHNEP participates in a variety of partnership resource management and planning activities. Funding under this program supports CHNEP staff review of watershed assessments and plans and provision of maps and data to partners which guide restoration priorities and track implementation of projects. | |
| Description: CHNEP provides staff support for restoration mapping efforts, including hosting the master restoration database and Shapefiles. Funding is allocated to support SWFRPC graphic services and GIS equipment costs. Tracking of restoration plan implementation is performed annually through development of the Government Performance and Review Act (GPRA) report. This subtask also include staff participation in watershed initiatives such as: Southern Water Use Caution Area (SWUCA) Recovery Strategy, Minimum Flows and Levels, Reasonable Assurance Plans, Basin Management Action Plans, Southwest Florida Feasibility Study, SFWMD Water Supply Plan, Caloosahatchee River Visioning process, and development of basin water budgets and management plans. CHNEP also participates in state and federal processes to develop landscape scale conservation corridors with public and private partnerships to provide habitat and species migration and climate change adaptation. Finally, partners, such as EPA and NOAA, frequently request data and supporting information about restoration and conservation efforts within CHNEP. As opportunities arise, CHNEP assists partners in restoration activities including: Water Planning Alliance, Estero Bay AB, Lemon Bay League, Forked Creek and Hendry Creek “Walk the Watershed”, Charlotte Harbor Flatwoods Initiative meetings and other activities. | |
| CCMP Priority Problem Addressed: All | |
| Potential Partners: EPA, ACOE, FDEP, Water Management Districts, Conference Members | |
| FY15 Deliverables: <ul style="list-style-type: none"> ▪ GPRA Report ▪ Public/Private Conservation Cooperative Support ▪ Staff support for regional watershed efforts including: CERP/SWFFS, SWIM planning, TMDLs, BMAPs, SWUCA, Caloosahatchee Regional River Visioning, Charlotte Harbor Flatwoods Initiative and Water Supply Plans | Target Dates: <ul style="list-style-type: none"> ▪ September 2015 ▪ Ongoing ▪ Ongoing |
| FY16 Deliverables: <ul style="list-style-type: none"> ▪ GPRA Report ▪ Public/Private Conservation Cooperative Support ▪ Staff support for regional watershed efforts including: CERP/SWFFS, SWIM planning, TMDLs, BMAPs, SWUCA, Caloosahatchee Regional River Visioning, Charlotte Harbor Flatwoods Initiative and Water Supply Plans | Target Dates: <ul style="list-style-type: none"> ▪ September 2016 ▪ Ongoing ▪ Ongoing |
| Budget: \$50,000 in staff | |
| Intermediate Outcomes: CHNEP will provide annual summaries of partners’ restoration activities through the GPRA report and will assist partners with compiling and analyzing data to develop and implement technically sound, consensus-based resource management plans. | |
| Long Term Outcomes: Increase in the number and effectiveness of implemented water quality and resource management Best Management Practices (BMPs), plans and restoration activities. | |

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| 4.2 | Targeted Restoration |
| Objective: To conduct restoration targeted to address the <i>Comprehensive Conservation and Management Plan</i> (CCMP) Priority Problems through partnerships. | |
| Project Objective: To restore priority water quality, hydrology and fish and wildlife habitat conditions identified by the TAC and resource managers, site-specific restoration projects are designed and implemented through partnerships with CHNEP support. Projects are designed to be technically sound and include monitoring to assess effectiveness. | |
| Description: CHNEP provides technical review of partners' oyster habitat restoration pilot project development and implementation, including monitoring to assess effectiveness. CHNEP provides funding, technical review and staff support for priority restoration projects identified by the TAC and scientific community, with a current focus on Alligator and Coral Creek hydrologic restoration and monitoring to assess the restoration effectiveness on fishery and vegetation communities. CHNEP also provides data and technical assistance to FDEP Estero Bay Aquatic Preserves and University of Florida Estero Bay Seagrass Restoration planning efforts. | |
| CCMP Priority Problem Addressed: All | |
| Potential Partners: FDEP, TNC, Mote, FWC, Bonefish and Tarpon Trust, Conference Members | |
| FY15 Deliverables: <ul style="list-style-type: none"> ▪ Punta Gorda Oyster Restoration Pilot Project ▪ Estero Bay Seagrass Restoration Plan ▪ Southwest Florida Oyster Working Group Identification of Priority Oyster Restoration Sites | Target Dates: <ul style="list-style-type: none"> ▪ March 2015 ▪ September 2016 ▪ Ongoing |
| FY16 Deliverables: <ul style="list-style-type: none"> ▪ Southwest Florida Oyster Working Group Implementation of Priority Oyster Restoration Sites | Target Dates: <ul style="list-style-type: none"> ▪ Ongoing |
| Budget: \$11,000 in staff | |
| Intermediate Outcomes: CHNEP will provide technical review of oyster restoration project and monitoring design and Alligator and Coral Creek hydrologic restoration fishery monitoring design. CHNEP will make restoration designs and results available through the CHNEP Water Atlas and Management Conference. | |
| Long Term Outcomes: Increase in healthy oyster and fishery habitats within the CHNEP estuaries and tidal creeks. | |

Targeted Restoration

Targeted Restoration Projects are implemented to focus restoration efforts into priority habitat, hydrology and water quality conditions and locations identified by the TAC and CHNEP resource management community. Targeted Restoration Projects address the CCMP Priority Problems. The multi-faceted restoration projects are implemented by partners with CHNEP staff and funding support for technical design, including monitoring to assess effectiveness. Targeted Restoration Projects generally take more than one year to complete to allow for adequate design and implementation, data collection and analysis and review by the TAC. Results of the Targeted Restoration Projects are available on the CHNEP website and Water Atlas. Targeted Restoration Projects to be completed in FY14 and FY15 are described briefly below.

Targeted Restoration Projects to be Completed in Fiscal Year FY14 and FY15

Punta Gorda Oyster Restoration Pilot Project

TNC, FY13 Mosaic funding and CHNEP staff support, due March 2015

To partially implement the CHNEP Oyster Habitat Restoration Plan (2012), The Nature Conservancy (TNC) successfully acquired funding support from Mosaic to implement a pilot oyster habitat restoration project in Punta Gorda in the near-shore waters of the Peace River. The site has habitat conditions likely to support successful oyster habitat re-establishment, including appropriate salinity and water depths, existing oysters, adjacent mangroves and a high suitability rating in the Habitat Suitability Index from the Plan. The project area will be ≤ 0.25 acres, include 9-12 patch reefs, three methods and inter- and sub-tidal locations. Monitoring will be conducted to evaluate the effectiveness of the different methodologies. Volunteers will assist with substrate deployment and monitoring. The project is located within federally endangered Smalltooth Sawfish critical habitat, which is a consideration in project design and permitting. Permits are currently obtained and deployment is expected to begin in the spring of 2014. The oyster habitat restoration project implements many CCMP Priority Actions including: FW-A, HA-1 and SG-B.

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| 5.1 | Legislative Agenda |
| Objective: To provide a structure for pursuing legislative action to support the implementation of the <i>Comprehensive Conservation and Management Plan</i> (CCMP). | |
| Project Objective: Several priority actions of the CCMP necessitate legislative changes. Funding under this task goes toward staff support to identify needed legislation, to track legislation at the state and federal levels, and draft support letters and comments to rulemakings for review by the Management Conference. | |
| Description: The Legislative Agenda is a formal document that presents projects, identified by the Management Conference, that implement the CCMP and which require additional support, either fiscal or policy, in order to be successfully completed. The Legislative Agenda is updated and revised to reflect the current and anticipated legislative opportunities for CHNEP to ensure that the CCMP is considered by elected officials when policy and funding decisions are being made. Moreover, with the updating of the CCMP in 2013, the Legislative Agenda is more dynamic. The Legislative Agenda is presented to policy-makers and decision-makers annually. Membership with the Association of National Estuary Programs (ANEP) and attendance at its meetings is encouraged by EPA. A portion of the \$4,500 dues is not eligible for EPA funding. Finally, this task also supports the Legislative Subcommittee. | |
| CCMP Priority Problem Addressed: All | |
| Potential Partners: Management Conference Members, elected officials, state and federal agencies. | |
| FY15 Deliverables: <ul style="list-style-type: none"> Present agenda to State and Federal Legislative Officials throughout the CHNEP study area Tracking of relevant legislation Electronic updates to Subcommittee members Letters of support as appropriate to legislators and policy makers ANEP membership Revised Legislative Agenda | Target Dates: <ul style="list-style-type: none"> Nov. 2014 – Sept. 2015 As Appropriate As Appropriate As appropriate As Opportunities Arise January 2015 Spring 2015 |
| FY15 Deliverables: <ul style="list-style-type: none"> Present agenda to State and Federal Legislative Officials throughout the CHNEP study area Tracking of relevant legislation Electronic updates to Subcommittee members Letters of support as appropriate to legislators and policy makers ANEP membership Revised Legislative Agenda | Target Dates: <ul style="list-style-type: none"> November 2015 – Sept. 2016 Year-round; and March through July for Florida As Appropriate February 2016 Spring 2016 |
| Budget: \$2000 in staff plus \$4500 ANEP Dues | |
| Intermediate Outcomes: CHNEP and the CCMP is recognized and utilized as a resource by legislators (local, state and Federal) and their staff. | |
| Long Term Outcomes: New, revised and re-authorized Federal and state Statutes, and rules, local ordinances, and Federal, state and local policies that assist in implementing the CCMP. | |

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| 5.2 Advocacy and Review Procedures | |
| Objective: To implement the Advocacy and Review Procedures adopted in February 2003. To provide federal consistency review as required by EPA and incorporate the existing federal consistency review process of the State Clearinghouse as set forth in the CCMP on page 219. | |
| Project Objective: Review and commenting on proposed legislation and rules has been identified as a key function of the CHNEP Management Conference. Since adoption of the Advocacy and Review Procedures on February 21, 2003, CHNEP has submitted over 60 letters of either support or comment to other agencies. Funding under this task goes toward staff support to review proposed rules and draft letters requesting modification. | |
| Description: The Management Conference developed a list of major categories of actions that may require CHNEP review, comment or letters of support. Staff will continue to develop letters of review, comment, support and inquiry as directed by the Management Conference. Based on the Advocacy and Review Procedures, eleven categories of actions include: <ul style="list-style-type: none"> ▪ Environmental Land Acquisition and Conservation ▪ Water Quality rules ▪ Hydrology rules ▪ Changes in structures specified in HA-4 ▪ Projects which improve water quality of Lake Hancock and the water exiting the lake ▪ Projects which significantly affect at least one of the habitats listed in FW-1 ▪ Projects which significantly affect hydrology in sub-basins ▪ Rules which reduce propeller damage to seagrass beds ▪ Projects that remove invasive exotic species ▪ Legislation that restricts citizen participation on environmental issues ▪ General permits affecting waterways ▪ Review of local comprehensive plans by the CHNEP partnership for implementation of the CCMP ▪ Participation in development of the Management Plan for the Babcock Ranch Preserve. <p>In FY14, the CHNEP submitted a clarification letter to the editor of the Sun-Herald, in the 1st quarter of FY15, the CHNEP has submitted letters supporting Ramsar designation of oyster reefs as wetlands, supporting the EPA's proposal for GULF NEP RESTORE act funding, and supporting Charlotte County's proposal for RESTORE Act funding.</p> | |
| CCMP Priority Problem Addressed: All | |
| Potential Partners: Management Conference Members, elected officials, state and federal agencies | |
| FY14 Deliverables: <ul style="list-style-type: none"> ▪ Review, Comment, Support and Inquiry Letters ▪ Public Testimony • Review of at least 2 Comprehensive Plan Updates | Target Dates: <ul style="list-style-type: none"> ▪ As required ▪ As appropriate ▪ By end of FY14 |
| FY15 Deliverables: <ul style="list-style-type: none"> ▪ Review, Comment, Support and Inquiry Letters ▪ Public Testimony | <ul style="list-style-type: none"> ▪ As required ▪ As appropriate |
| Budget: \$2000 in staff | |
| Intermediate Outcomes: Submission of Management Conference comments, remarks and suggested language in response to proposed rules and legislation. | |
| Long Term Outcomes: Incorporation of CHNEP Management Conference comments, revisions into adopted rules and legislation. | |

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| 5.3 | Leveraged Grants |
| Objective: To supplement implementation of the <i>Comprehensive Conservation and Management Plan</i> (CCMP) through funding of projects from sources other than the EPA Cooperative Agreement. | |
| Project Objective: Leveraging grants for partners to implement the CCMP is a key component of the Long Range Funding Strategy. Funding under this program goes toward staff support to grant objectives and to match them with partner needs toward CCMP implementation. | |
| Description: CHNEP staff are actively applying for and winning funding through grants from Federal, State and private organizations for our partner organizations to support the implementation of the CCMP. The Research Needs Inventory, in conjunction with the CCMP, guides CHNEP staff when reviewing grant opportunities. In FY13 CHNEP staff were successful in assisting partners in capturing grant funding from government and private sources for unfunded projects and programs. CHNEP staff assists partners in identifying, applying for and administering grants from various sources, including Federal and State agencies and private foundations. Staff also searches for funding for specific projects that are being conducted by partners, notify partners of grant opportunities and work with partners to form teams and partnerships for proposal submissions. Staff is maintaining a grants database to track annual grant opportunities to facilitate developing teams and projects in advance of the Request for Application announcements. In addition, CHNEP provides project specific letters of support to granting agencies on behalf of partners. In FY 2014, the CHNEP drafted 18 letters of support for partners and provided assistance to the SWFRAPC staff with proposal writing and grant submission. During the 1 st quarter of FY2015, the CHNEP has drafted 3 letters of support for partner projects. | |
| CCMP Priority Problem Addressed: All | |
| Potential Partners: Management Conference Members, elected officials | |
| FY15 Deliverables: <ul style="list-style-type: none"> ▪ Proposal Templates for Grant Opportunities ▪ Email notification of available grants ▪ Support letters for inclusion with grant applications ▪ Draft and Final Grant applications | Target Dates: <ul style="list-style-type: none"> ▪ Ongoing ▪ Ongoing, usually bi-monthly ▪ As Requested ▪ As Appropriate |
| FY16 Deliverables: <ul style="list-style-type: none"> ▪ Proposal Templates for Grant Opportunities ▪ Email notification of available grants ▪ Support letters for inclusion with grant applications ▪ Draft and Final Grant applications | Target Dates: <ul style="list-style-type: none"> ▪ Ongoing ▪ Ongoing, usually bi-monthly ▪ As Requested ▪ As Appropriate |
| Budget: \$3,400 in staff | |
| Intermediate Outcomes: Provide partners with assistance in identifying and capturing funding for projects that implement the CCMP. | |
| Long Term Outcomes: Maintain and nurture the culture of granstmanship among CHNEP partners in order to facilitate CCMP implementation throughout the CHNEP Study Area. | |

FY2014 Completed Major Projects and Actions

Alligator Creek Restoration Fishery Community Monitoring

Completion of this project is assisting the SWFWMD, FDEP and other partners with assessing the functional effects of hydrologic restoration activities adjacent to Alligator Creek, CHNEP contracted with Mote to conduct juvenile fishery monitoring in the creek utilizing methods consistent with previous juvenile fishery monitoring in the same location prior to habitat restoration. Implementation of the project is allowing the monitoring results to be used to compare pre and post, control and response fishery conditions. Field monitoring was be conducted bi-monthly in two creeks at from April to October 2013. The results, including a data base and analyses and GIS shapefiles, were approved by the Management Conference in summer 2014. The fishery monitoring project implements several CCMP Priority Actions including: WQ-E, FW-C and HA-N.

Punta Gorda Oyster Restoration Pilot Project

To partially implement the CHNEP Oyster Habitat Restoration Plan (2012), The Nature Conservancy (TNC) successfully acquired funding support from Mosaic to implement a pilot oyster habitat restoration project in Punta Gorda in the near-shore waters of the Peace River. The site has habitat conditions likely to support successful oyster habitat re-establishment, including appropriate salinity and water depths, existing oysters, adjacent mangroves and a high suitability rating in the Habitat Suitability Index from the Plan. The project area will be <0.25 acres, include 9-12 patch reefs, three methods and inter- and sub-tidal locations. Monitoring will be conducted to evaluate the effectiveness of the different methodologies. Volunteers will assist with substrate deployment and monitoring. The project is located within federally endangered Smalltooth Sawfish critical habitat, which is a consideration in project design and permitting. Permits are currently obtained and deployment is expected to begin in the winter of 2015. The oyster habitat restoration project implements many CCMP Priority Actions including: FW-A, HA-1 and SG-B.

Long Range Financial Strategy

With financial difficulties on the horizon, the CHNEP Management Conference chose to update its Long Range Financial Strategy, starting in August 2013. Through the year, the Management Conference elected to change its host agency to reduce overhead costs, work with member agencies to increase their contributions and retain more grants to support the CHNEP Program Office. Reduction of staff or CHNEP work products were rejected options.

Overall, implementation of these options have increased financial resources by \$140,000 and decreased them by \$15,000 for Fiscal Year 2015. This is a net increase by \$125,000. In addition, another \$130,000 has been requested from a member agency. Total improvement of CHNEP long range financial health may be \$255,000 or a 23% increase annually as a result of actions taken during Fiscal Year 2014.

After implementation of the above actions, the next option is to Pursue State Designation as an Independent Entity. Currently, Tampa Bay Estuary Program (TBEP) and Sarasota Bay Estuary Program (SBEP) are designated as independent entities under Florida Statutes. This requires an action by the State Legislature. In April 2014, the Governor called for independent entity designation for the Indian River Lagoon (IRL) NEP. The IRL advisory board approved the

concept of a separate, stand-alone entity for the IRL NEP and to reconvene as soon as they get feedback from state and federal agencies involved. They will hold a workshop to discuss pros and cons. CHNEP has taken no action to pursue state designation as an independent entity. However, there is an opportunity to work jointly with IRL to pursue designation for all Florida NEPs. Staff requests discussion by the committee.

Management Committee discussed state designation as the next highest option after the numerous actions that are being implemented. Although the Management Committee did not offer a motion, the general consensus was to allow the CHNEP program office to settle in with the City of Punta Gorda and to track IRL's experience.

Change of CHNEP Host

At their March 13, 2014 meeting, the CHNEP Policy Committee voted to establish a subcommittee charged to develop a Request for Interest to seek interested program hosts. The subcommittee met on April 3, 2014.

The subcommittee included 3 Policy Committee members and 2 each from the Technical Advisory Committee, Citizens Advisory Committee and Management Committee. Three members participated remotely. The committee made two motions: (1) to issue an Invitation to Negotiate and (2) to direct staff to incorporate their modifications to the draft, provide it to the Policy Committee and subcommittee for consent for issuance the next week.

CHNEP's office received inquiries from the City of Punta Gorda, Wildlands Conservation, Friends of the Charlotte Harbor Estuary, Inc., Southwest Florida Regional Planning Council, Calusa Nature Center and the Charlotte Harbor Environmental Center. One response packet was submitted by the May 19 deadline. It was from the City of Punta Gorda.

The key components of the City of Punta Gorda Response (modified by May 22, 2014 clarifications) include:

- Quoted overhead costs of \$102,500 plus \$5,500 for office space which is significantly lower than the SWFRPC at \$184,000. The quote is based on the entire budget. OMB circular A-87 states that: "The indirect cost rate calculation should exclude pass-through funds (funds provided to the prime for specific secondary recipients), sub award expenditures exceeding \$25,000 and food purchases." A portion of the SWFWMD annual agreement (\$70,000) is pass-through to CHNEP sub-contractors. CHNEP staff has asked for a recalculation.
- Offices offered at City Hall, where the Chamber of Commerce was once housed. This will still need approval by the City Council.
- Warehouse storage facilities to accept and distribute materials, associated with the Public Works Department.
- Flexibility concerning City policies so that existing CHNEP practices may continue, including Florida Retirement System enrollment.
- More depth in human resource, purchasing and IT capabilities.

On May 29, 2014 the Policy Committee directed CHNEP staff to enter into negotiations with the City of Punta Gorda to host the CHNEP. These negotiations were successfully completed, resulting in a Memorandum of Agreement between the CHNEP Policy Committee and City of

Punta Gorda. The CHNEP Program office relocated to the City effective October 1, 2014. To facilitate the transition, the CHNEP Policy Committee also entered into a Memorandum of Understanding with the Southwest Florida Regional Planning Council (the CHNEP's host from inception to September 30, 2014)

Use of Trees and Woody Shrubs in Green Infrastructure Stormwater Treatment

The CHNEP was awarded a \$4,000 grant from the National Association of Regional Councils and USDA Forest Service through its Regional Centers of Excellence program to conduct a project exploring the potential benefits for nutrient uptake by trees and woody shrubs in stormwater conveyances. This project is a follow-on to previous green-infrastructure projects conducted by CHNEP in conjunction with EPA.

The U.S. Forest Service and the EPA are promoting the use of natural processes and Green Infrastructure to help manage urban stormwater. In Florida, swales, filter marshes, and stormwater ponds utilize plants to assist in the uptake of nutrients in stormwater runoff. More cities and counties are considering using their natural resources for stormwater mitigating strategies to assist in managing water quantity and improving water quality. The CHNEP's TAC, comprised, in part of, government technical staff, is interested in the efficacy of increasing the use of woody shrubs and trees to increase nutrient uptake in stormwater conveyances.

Preliminary literature reviews and discussions with subject matter experts (EPA staff in Non-point Source, Green Infrastructure, LID staff, and Watershed Academy, Florida county and municipal staff, and consultants) revealed that there is little information regarding nutrient uptake by woody shrubs and trees utilized in stormwater runoff conveyances (i.e., the attenuation of nutrients such as nitrogen and phosphorous). Scientific studies and peer-reviewed models (SWMM, iTree, and National Stormwater Calculator) address interception of rainwater by tree canopies and roots (decreasing downstream volume of runoff), the frequency of rain events, the decrease in erosion (sediment capture and stabilization by roots) and the sequestration of carbon (greenhouse gas decrease).

Southwest Florida local governments strongly support the implementation of best management practices for the treatment of stormwater; green infrastructure is recognized in county-wide plans as the preferred means by which to treat stormwater. The TAC identified at its July 25, 2013, meeting a desire to establish green infrastructure BMPs to assist with removing nutrients from stormwater prior to it entering the estuary waters. The CHNEP TAC has identified an opportunity to partner with FDOT and county DOTs to utilize beautification efforts to treat stormwater.

Information concerning the nutrient uptake by trees and woody shrubbery planted within stormwater conveyance systems will assist counties and municipalities in deciding what types of vegetation to plant in medians, swales, rain gardens, stormwater pond littoral zones. The outcome is informing a broad diversity of Charlotte Harbor Estuary stakeholders as they adaptively manage stormwater runoff in urbanizing watersheds.

Outcomes

The CHNEP successfully completed all the project tasks on time and within budget.

The project Scope of Work called for a one-day forum: “Technical Advisory Committee Open Forum to discuss findings, data gaps and potential resolutions to data gaps, and overall efficacy of pursuing tree and woody shrub nutrient uptake as a stormwater BMPs.” Upon consultation with partners, the workshop was expanded to include a second day that focused on the presentation of successful neighborhood waterway restoration projects and the development of a conceptual neighborhood waterway restoration project to use to seek funding support. The two-day workshop was held June 4 and 5, 2014, in Punta Gorda, Florida. The workshop presentations were uploaded to the CHNEP website prior to the end of the second day.

Task 6 called for two subcommittee meetings, which the CHNEP conducted on August 26, 2014. In addition, the CHNEP utilized an existing partnership - CALOOSAHATCHEE WATERSHED INITIATIVE “ECWCD” - to assist in identifying an appropriate project for demonstrating the technical ability to quantify the effect of trees and woody plants on nutrient loading of stormwater to be utilized in the State-required permitting process. This ability will result in an incentive to protect mature trees and plan new trees on development sites.

Finally, the TAC Water Quality Quantifiable Objectives Subcommittee (WQQOS) and workshop participants are in agreement that additional research on the actual nutrient uptake of trees and woody plants in stormwater conveyances would yield useful data and assist in further integration of plantings into green infrastructure stormwater treatment Best Management Practices (BMP)s.

In addition, the TAC, WQQOS and CHNEP Management Conference are honored to have been part of the i-Tree Hydro module beta testing.

The WQQOS members identified a few specific next steps that the CHNEP will be pursuing in the upcoming fiscal year:

- CHNEP staff will more fully review i-Tree Hydro Manual, Appendix C, Calculating Pollution Load, page 44 and report back to WQQOS.
- WQQOS recommends that ECWCD submit the i-Tree Hydro results for the West Marsh project to the permitting agency (U.S. Army Corps of Engineers) since the project permit does not currently consider the effect of trees on-site. The ECWCD intends to retain a number of the trees that are currently on the site which is not a permit requirements nor has been considered in the load calculations. If the i-Tree Hydro data is submitted and the permitting agency will not accept the revised loads information it will not have an impact on the project timeline. The load reduction calculated by i-Tree Hydro is an enhancement to the overall project.
- iTree workshop participants will continue to familiarize themselves with the iTree software, and the
- CHNEP will seek out additional training options to offer partners.
- WQQOS would like to "run" the subwatershed of the Orange River (location of the West Marsh project) through i-Tree Hydro to better gauge the impact of retaining mature trees and planting new trees on the landscape.

- WQQOS identified the need for additional research on actual nutrient uptake as a data gap that requires resolution. The i-Tree Hydro module is an excellent beginning point but more specific data about nutrient loading removal would be very useful.
- The CHNEP Policy Committee is curious as to the impact of i-Tree Hydro results usage: could a single tree result provide credit for both carbon sequestration and reduction in nutrient loadings?

Optical Model Spectral Validation and Water Clarity Reporting Tool Refinement Project

In 2012, the CHNEP contracted with Mote Marine Laboratory and Janicki Environmental Inc. to create a spectral optical model in order to compute water clarity from water quality measurements (color, chlorophyll a and turbidity) and to estimate annual water clarity conditions for each of the estuary segments. The Water Clarity Reporting Tool was then used to generate annual scores for each of the estuary segments based on the percentage of water clarity measurements better or worse than reference values and to monitor the progress of water clarity over the years. The validated optical model output is available on the CHNEP Water Atlas (www.chnep.wateratlas.usf.edu/).

Relative to a reference period, stable water clarity was needed to support seagrass “protection” and improving water clarity to support seagrass “restoration.” There was, however, a lack of statistically rigorous relationships between water clarity estimates from field measurements of light attenuation and non-spectral model results.

More recent research indicated that spectrally-explicit optical models more consistently represented water clarity conditions than actual field measurements of light attenuation. In addition, a validated spectral optical model could be applied to past water quality data available prior to when light attenuation measurements were collected, allowing water clarity estimates to be made from historical data.

Mote Marine Laboratory developed an empirical, spectrally-explicit optical model for the estuary segments and applied the model to existing water quality data (color, chlorophyll a and turbidity) to estimate annual water clarity conditions for each of the estuary segments. Janicki Environmental then applied the Water Clarity Reporting Tool (first developed for observed clarity data in 2009) to the modeled clarity data. Annual distributions of modeled water clarity were compared to that of the reference period of 2003–2007, and “scores” computed based on statistical comparisons. Scores were assigned a color coding to draw attention to stable or worsening water clarity in segments needing “restoration” or improvement, and to worsening water clarity in areas needing “protection.”

The color coding of the Water Clarity Reporting Tool allows progress toward meeting the water clarity targets to be quickly conveyed to both scientists and the public. Additional information, including published reports, is available at www.CHNEP.org.

Seagrasses are submerged flowering plants found in shallow marine waters, such as bays and lagoons, and along the continental shelf in the Gulf of Mexico. A vital part of the marine

ecosystem due to their productivity level, seagrasses provide food, habitat and nursery areas for numerous vertebrate and invertebrate species. Seagrasses:

- Stabilize the sea bottom
- Provide food and habitat for other marine organisms
- Maintain water quality
- Support local economies

The vast biodiversity and sensitivity to changes in water quality inherent in seagrass communities makes seagrasses an important species to help determine the overall health of coastal ecosystems.

Watershed Summit

Charlotte Harbor Watershed Summit 2014 "Our Vision in Action" was held March 25-27, 2014 in Punta Gorda, Florida. The Watershed Summit is an essential part of the CHNEP process to bring public and private stakeholders together to discuss current studies and environmental issues facing our watershed. It is an important opportunity to review accomplishments completed since our last Watershed Summit in 2011 and discuss emerging topics affecting the Charlotte Harbor watershed in the future. The theme of the 2014 Summit is Our Vision in Action and the three key topics are research, restoration and stewardship.

The summit was held over 3 days with more than 40 presentations, 20 poster presentations, and more than 120 attendees. There were more than 15 sponsors whose diversity reflected the over CHNEP Management Conference both in geography and discipline. The Proceedings for the Charlotte Harbor Watershed Summit will be published in the peer reviewed Florida Scientist in fall of 2016.

Statewide General Permit for Oyster Restoration

The Nature Conservancy (TNC) lead a working group to facilitate discussions between regional, state and federal resource managers and regulators to develop a general permit for oyster habitat restoration which partially implemented the CHNEP Oyster Habitat Restoration Plan (2012). Restoring oyster habitat under previous regulations was challenging because the ecological values of oysters were not considered. When Florida initiated modifications to the Environmental Resource Permit (ERP) rule in 2012, it provided an opportunity to review the regulatory process relating to oyster restoration. The working group drafted a General Permit (GP) to provide criteria for small scale oyster restoration projects (low profile and less than 0.25 acres). The GP was included in the ERP adopted in October 2013 as 62-330.632, F.A.C General Permit for the Restoration, Establishment and Enhancement of Low Profile Oyster Habitat. The GP facilitates permitting of oyster restoration in a timely manner to meet grant funding constraints, thereby facilitating oyster restoration throughout the CHNEP and other Florida estuaries. The GP does not preclude the need for ACOE, NOAA or other state authorizations for permits that don't meet the specified criteria. Adoption of the GP implements several CCMP Priority Actions including: FW-A, FW-F and FW-G.

Communities of Practice: Environmental Educators, Conservation Land Resource Managers, Scientists and Engaged Citizens

Project Objectives: Network | Collaborate | Brainstorm | Learn

The CHNEP held a number of workshops and training opportunities for a wide variety of target audiences including: the public, citizen-scientists, educators, students, resource managers, researchers and decision-makers.

Public Outreach Grants

Public Outreach Grants typically take one year to complete. Fiscal Year14 Public Outreach Grants include:

- **Garden Elementary and Venice High School Reach into the Community with Conservation**

Third grade students at Garden Elementary reached into their home communities with native plant gardening, combined with wildlife conservation information, storytelling and presentations. Student and family awareness of habitat loss and increased their sense of stewardship for our Florida environment. This project is an extension of grants completed with Venice, Taylor Ranch and Garden Elementary Schools, during which students worked with the Venice High School and community groups to address wildlife conservation issues as well as to install native plant gardens on the grounds of each elementary school. Their work will be chronicled in school newspapers and featured in local papers. The CHNEP provided \$1,534 toward this \$3,774 project. This project helps implement the CCMP by fulfilling SG-H, SG-F and WQ-K.

- **Strolling Science Seminars**

Six half-day strolling science seminars for adults were developed. Subject experts lead each walk that will also provide hands-on activities. These programs provided citizens with information about wildlife and watersheds and skills to enable them to conduct citizen science projects. The CHNEP provided \$600 toward this \$1,200 project. This project helps implement the CCMP by fulfilling SG-B.

- **Student Stewards**

Because of this project, twice as many fourth-grade students had authentic field experiences in Lee County's estuarine grass flats. Students investigated the food webs of an estuarine environment. A total of 150 classrooms of 3,300 students, approximately 50 percent of the fourth grade student population, were able to have this field experience. The CHNEP provided \$4,992 toward this \$9,984 project. This project helps implement the CCMP by fulfilling SG-H.

- **Teach a Man About Fish (and he'll eat for a lifetime)**

Students and adults worked together in a variety of outreach venues to educate the public in ecological relationships between people, animals and their charged resources within the Charlotte Harbor watershed. Students learned about their interrelationships between themselves and the creatures of the watershed then presented lessons regarding the watershed and its inhabitants at two free school science nights and three community environmental festivals. Students learned about the watershed and estuarine environment then presented their knowledge in creative performances. The CHNEP provided \$1,300 toward this \$2,891 project. This project helps implement the CCMP by fulfilling SG-F and SG-H.

- **Environmental Education Center Field Studies Program at Circle B Bar Reserve for Fourth Grade Schools**

Approximately 4,000 fourth grade students participated in this pilot project to increase the students' awareness of the Peace River watershed, where water and pollution comes from and goes. Three curriculums aligned with 4th grade standards were developed, providing options so teachers could select the curriculum and program that best suits the needs of their students. The program was held at the 1,267-acre Circle B Bar Reserve located on the headwaters of the Peace River. The CHNEP provided \$4,996 toward this \$39,996 project. This project helps implement the CCMP by fulfilling SG-D and SG-H.

- **Student Naturalist Program at Circle B Bar Reserve**

Almost 30 junior and senior high school students participated in an extra-curriculum program focused on environmental experiences. Students involved in the pilot year were those interested in pursuing a college degree in natural sciences. The program provided practical experience in water and natural resource management and environmental education. The students worked with researchers and were required to give back by volunteering and creating environmental education products. The CHNEP provided \$3,000 toward this project. This project helps implement the CCMP by fulfilling SG-B, SG-4 and SG-H.

- **EcoCamp 2014**

Two five-half day summer camps were conducted for 20 children ages 8 to 14 at Alligator Creek in Punta Gorda and Cedar Point Park in Englewood. The campers had intensive, hand-on studies of water resource issues and concepts, including guest speakers, field trips and outdoor experiences. By the end of Eco-Camp, the campers had learned and understood the interconnectedness of life within the estuary and how their action may affect the balance of this ecosystem. They learned to embrace new experiences, to get out in nature and explore our beautiful and important estuaries and natural resources. The CHNEP provided \$2,000 toward this \$3,800 project. This project helps implement the CCMP by fulfilling SG-F and SG-H.

- **Environmental Safaris at Wildflower Preserve**

An 80-acre overgrown and abandoned golf course on the Cape Haze peninsula in Charlotte County is being transformed into a nature preserve. This project with nearby L.A. Ainger Middle School developed three "environmental safari" programs at Wildflower Preserve. Visitors will "hunt" for target plants and animals in three different areas of the preserve: freshwater wetlands, creek/estuarine and terrestrial. Samples will be collected for observation. As species are found, the trail guides will link their finds into broader discussions of environmental topics. The CHNEP provided \$1,562 toward this \$6,838 project. This project helps implement the CCMP by fulfilling SG-B, SG-D and SG-F.

- **Citizen's Stormwater Academy**

As part of the county's water quality improvement projects, a public education program for neighborhood groups was developed. The goal is to raise awareness of local water pollution issues and how that pollution affects them and to change behavior to reduce pollution. Initially the academy will focus on residents in the Caloosahatchee and Hendry Creeks watersheds through workshops, trainings, printed materials and storm drain stenciling. The CHNEP provided

\$2,200 toward this \$6,425 project. This project helps implement the CCMP by fulfilling WQ-1, WQ-E, SG-1, SG-F and SG-G.

- **Nature Parks Wetlands Project**

The city and the nonprofit volunteer organization developed a wetland garden within the city's 24-acre nature park located in the center of a large residential community. This project provides an educational system to teach about the conservation of our watershed, the benefits of using native plants and the sustainability of the natural environment through programs that include classes and lectures on conservation landscaping plants, wading birds, native plant species and habitat protection. The CHNEP provided \$2,816 toward this \$6,759 project. This project helps implement the CCMP by fulfilling SG-A, SG-B and SG-C.

Clean Water Act Core Program Support

The CHNEP supports the Clean Water Act (CWA) core programs through direct funding of projects, staff assistance to partners and partner activities. Provided below are representative activities of CHNEP support for CWA core programs during Fiscal Year 2014.

Water Quality Monitoring

CHNEP staff continue participating in the **Coastal Charlotte Harbor Monitoring Network (CCHMN)** monthly probabilistic sampling in the estuarine and tidal waters of the Study Area. Annual field monitoring audits of the field sampling partners are conducted by CHNEP. Results of the field audits and potential corrections are discussed at an annual meeting of field and laboratory partners. The CCHMN data are entered into the state and federal STORET water quality data base.

The CHNEP participates in the **Regional Ambient Monitoring Program (RAMP)** which holds quarterly meetings. RAMP participants share current water quality field and laboratory issues and conduct quality assurance field sampling and laboratory analyses.

The CHNEP provides on-going support to **Charlotte Harbor Estuary Volunteer Water Quality Monitoring Network (CHEVWQMN)**. CHNEP staff serve as a volunteer coordinator, assisting with annual quality control training, quality control compliance and monthly water quality monitoring. The data are uploaded into the Florida STORET database.

Controlling Non-Point Sources

WETPLAN: Watershed Education Training - Ponds, Lakes and Neighborhoods is an education program and resource for anyone interested in improving and caring for their neighborhood lakes and ponds. The program provides workshops several times a year with a panel of experts and assistance for home/condo owners associations and individuals upon request. WETPLAN is a partnership of water quality and lake management experts including members from the Charlotte Harbor National Estuary Program, the City of Bonita Springs, Lee County Natural Resources, Lee County Hyacinth Control District, Florida Gulf Coast University, Lee County Extension Services, the Florida Native Plant Society, and private partners including Conestoga-Rovers & Associates and Kimley-Horn. WETPLAN partners developed and held 3 workshops in Lee County in Fiscal Year 2014 with more than 100 attendees. In addition, the WETPLAN website went "live" www.wetplan.org

Applicable EPA-approved State Strategies and Program Plans

Listed below are the EPA-approved State Strategies and Program Plans that CHEP was able to identify.

- 1) State Nonpoint Source Management Program - Section 319 of CWA funds used on SWIM water bodies
 - Florida began full implementation of its revised NPS Program in May of 1989 following submission, review, and approval of the State's NPS Management Program and Assessment Report to the United States Environmental Protection Agency (EPA).
 - Coastal Nonpoint Source Management Program – Section 6217 of Federal Coastal Zone Act
 - Clean Lakes Program – Section 314 of CWA
 - NNC: On November 30, 2012, June 27, 2013, and September 26, 2013, EPA approved numeric nutrient standards adopted by the state of Florida for certain waters in the state.
 - TMDLs:
 - Group 3 Basin – Caloosahatchee Peace River Basin
 - Group 2 Basin – Charlotte Harbor
 - Group 1 Basin – Hendry Creek and Hendry Creek Marine, Imperial River
- 2) NPDES

In October 2000, EPA authorized the Florida Department of Environmental Protection (DEP) to implement the NPDES stormwater permitting program in the State of Florida (in all areas except Indian Country lands). DEP's authority to administer the NPDES program is set forth in Section 403.0885, Florida Statutes (F.S.). The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the State of Florida from certain municipal, industrial and construction activities. As the NPDES stormwater permitting authority, DEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement activities
- 3) Performance Partnership Agreement

DEP entered into a Performance Partnership Agreement (PPA) to further increase the efficiency and flexibility needed to accomplish Florida and federal environmental goals. The PPA serves as the workplan for EPA grants awarded to the state. The following federal programs are covered by the PPA:

 - Water Pollution Control (CWA Section 106, surface and ground water)
 - Public Water System Supervision (SDWA Sections 1443(a) and 1451(a)(3))
 - 3. Underground Water Source Protection (UIC) (SDWA Section 1443(b))
 - Resource Conservation & Recovery (RCRA) (SWDA Section 3011(a))
 - Clean Air Act Grant (CAA Section 105)
- 4) DRAFT - The State of Florida Wetland Program Plan, 2013-2016, 3rd Edition February, 2013 – this has been published on the US EPA Region 4 website but remains “draft.”

The CHNEP Management Conference certifies that the proposed work program contained in this FY2016 Workplan is consistent with the above elements. (Pursuant to 40 CFR 35.9094)

Clean Water Act Funds Used for Travel

Travel funds are used for purposes such as travel to NEP Directors Meetings, National and state conferences, meetings with EPA staff in Atlanta and Washington D.C., and other overnight travel as needed. Funds are also programmed to support additional special travel and local travel, tolls and parking expenses; including travel that is ineligible for federal reimbursement. See Table 18 for details.

Table 18: Completed and Projected Travel in FY15 (FY15 EPA Budget Sheet)

| Date | Purpose | # Travelers | Location | Length of Stay | Travel Mode | Reg. Fee | Estimated Cost |
|---------------------|-------------------------------------|-------------|--------------------|----------------|-------------|----------|----------------|
| Nov-14 | ANEP Directors meeting | 1 | Fort Washington MD | 5 | Air | \$150 | \$1,453 |
| Nov. 2014 | Florida Association of Bethologists | 1 | Tampa, FL | 3 | Auto | \$70 | \$449 |
| Mar-15 | Learning Solutions | 1 | Orlando | 2 | Auto | \$816 | \$1,718 |
| Feb-15 | NEP/EPA Spring Mtg. | 2 | Washington, DC | 5 | Air /\$800 | \$400 | \$2,300 |
| Feb. 2015 | AWRA | 1 | Fort Myers | 1 | Auto | \$70 | \$100 |
| March 11-12, 2015 | Florida Oceans Day | 1 | Tallahassee | 2 | Auto | \$0 | \$400 |
| May 19- 21, 2015 | GOM Climate Community of Practice | 1 | Tampa FL | 4 days | Air | \$100 | \$900 |
| June 16 - 18 , 2015 | GOMA, All Hands | 1 | Biloxi, MS | 4 days | Air | \$75 | \$1,600 |
| Spring 2015 | Meet with Region 4 Staff | 1 | Atlanta, GA | 3 days | Air | \$0 | \$675 |
| June 17 - 19, 2015 | Florida Stormwater Association | 1 | Sanibel | 3 days | Auto | \$250 | \$250 |
| FY 15 | Local Travel | 4 | Various | <1 day | Auto | \$100 | \$5,155 |
| | | | Total | | | | \$15,000 |

FY 13 Actual versus Adopted Expenses

Actual

| Sub-Task # | Sub-Task | Personnel | Fringe | Indirect | Travel- | Supplies | Contracts | In-House Other | Total |
|------------|------------------|------------------|------------------|------------------|-----------------|----------------|------------------|-----------------|--------------------|
| 1 | Mgmt. Conference | \$81,618 | \$35,786 | \$66,459 | \$5,750 | \$3,642 | | \$20,572 | \$213,827 |
| 2 | Outreach | \$56,757 | \$25,022 | \$46,469 | \$8,677 | \$613 | \$191,227 | \$50 | \$328,814 |
| 3 | Research | \$49,425 | \$21,790 | \$40,466 | \$1,571 | | \$273,429 | \$80 | \$386,761 |
| 4 | Restoration | \$40,544 | \$17,874 | \$33,195 | \$3,092 | | | \$988 | \$95,693 |
| 5 | Legislation | \$6,369 | \$6,819 | \$1,203 | | | | \$4,500 | \$18,891 |
| | Total | \$234,712 | \$107,290 | \$187,793 | \$19,090 | \$4,255 | \$464,656 | \$26,190 | \$1,043,985 |

Actual versus Adopted

| Sub-Task # | Sub-Task | Personnel | Fringe | Indirect | Travel- | Supplies | Contracts | In-House Other | Total |
|------------|------------------|-----------------|-----------------|-----------------|----------------|----------------|------------------|------------------|------------------|
| 1 | Mgmt. Conference | \$3,482 | \$1,414 | \$3,641 | \$4,250 | \$3,608 | \$0 | (\$3,872) | \$12,523 |
| 2 | Outreach | \$9,043 | \$3,678 | \$7,731 | (\$6,177) | \$387 | \$4,281 | \$250 | \$19,194 |
| 3 | Research | (\$28,125) | (\$12,490) | (\$22,966) | (\$571) | \$50 | \$318,633 | \$170 | \$254,701 |
| 4 | Restoration | \$42,256 | \$18,326 | \$35,005 | \$3,908 | \$50 | \$0 | (\$988) | \$98,557 |
| 5 | Legislation | \$2,031 | \$17,991 | \$5,697 | \$500 | \$0 | \$0 | \$500 | \$26,719 |
| | Total | \$28,688 | \$28,920 | \$29,107 | \$1,910 | \$4,095 | \$322,915 | (\$3,940) | \$411,695 |

- Personnel, fringe and indirect are over primarily because we had programmed funding to support RPC staff services, which were not used.
- Research is over and Restoration is under (on salaries, fringe, indirect and associated travel) primarily because early in the year, we were consumed with RESTORE Act planning. Later in the year, it switched more heavily to shoreline survey analysis, restoration monitoring and Tidal Creek research than anticipated.
- The Director approved Communications Manager Maran Hilgendorf attend the EPA Community Involvement Conference in Boston, Learning Solutions e-Learning Guild in Orlando and Customer Experience for Public Sector in Arlington VA. She was able to approve this since the GOMA and ANEP meetings were held locally and sufficient travel funding was available elsewhere in the budget.
- The \$988 deficit in restoration was from printing the Southwest Florida Regional Ecosystem Restoration Plan and contributions to hosting the meetings.
- Overages on the in-house other were off-set by funding available under supplies. Most of the Task 1 in-house overage is attributable to charges for copies made with SWFRPC copier.

6. CHNEP RESEARCH NEEDS INVENTORY

The CHNEP Comprehensive Conservation Management Plan (CCMP) Priority Action SG-N calls to “Update comprehensive inventories of research, restoration, legislative, and outreach needs.” In 2007, the research needs inventory was developed in concert with the 2008 CCMP Update. The Management Conference was surveyed and a comprehensive list of research and monitoring priorities was developed. The list has served CHNEP well to identify projects for Workplan and outside grant funding.

At the October/November 2014 Management Conference meetings, committee members reviewed the draft list of research needs (augmented by outreach needs). Several additions were made to the draft list and a SurveyMonkey tool was created so solicit additional input from Conference members. The survey will be available very soon at <https://www.surveymonkey.com/s/CHNEPresearch>.

Recommendation: Motion to recommend that the Management Conference direct staff to issue the Research and Outreach Needs Inventory survey, for completion by April 6, 2015.

Attachment: Research and Outreach Needs List

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|--|------------------|---------------------|--|-------------|
| | Develop accurate method to map oysters. | FW-A | FW-a2 | New indicator in 2013 | 2013 |
| | Digitize the Harris et. al. (1983) maps of mangrove, tidal flat Oyster reef, saltmarsh and seagrass for 1945 and 1982. Maps are in the possession of FWC. Compare 1950s era mapping associated with the Historic Benthic Habitats map. | FW-A | | | 2013 |
| 21 | Develop oyster bar monitoring program for spat recruitment, percent living/dead and disease | FW-A | | Submitting for CPI grant. 2014 | 2013 |
| 53 | Transect monitoring of freshwater SAV in the Peace, Myakka, and Caloosahatchee Rivers and in the Estero Bay, and Lemon Bay tributaries | FW-A | | | 2013 |
| 56 | Develop a method for determining freshwater SAV acreage | FW-A | | | 2013 |
| 71 | Document the functions of non-vegetated intertidal and subtidal systems | FW-A | | | 2013 |
| 85 | Determine the historic spatial extent of freshwater submerged aquatic vegetation in the Caloosahatchee, Peace and Myakka Rivers | FW-A | | | 2013 |
| 87 | Develop benthic index for mud and salt flats and subtidal unvegetated bottoms of Charlotte Harbor to be used as an indicator | FW-A | | | 2013 |
| 89 | Create an area-wide benthic fauna monitoring program | FW-A | | | 2013 |
| 99 | Compare SAV mapping results of digital photography to film photography: are macro-algae signals more recognizable? | FW-A | | | 2013 |
| 105 | Map salt flats and mud flats separately to determine natural variation in habitat extents | FW-A | | | 2013 |
| 111 | Develop an accurate method for using aerial photography to map the extent of oyster bars. | FW-A | | | 2013 |
| 119 | Bottom Sediments at the Widening of the Caloosahatchee and Peace Rivers | FW-A | | | 2013 |
| | Assess why SAV recovering well in the meso- and oligohaline Caloosahatchee | FW-A | | James Douglass, FGCU, presented at 10/10/2014 TAC meeting | 2013 |
| | Monitor benthic algae complementary to those for seagrasses | FW-A | | James Douglass, FGCU, presented at 10/10/2014 TAC meeting | 2013 |
| | Map sediment type over the estuary bottoms | FW-A | | 10-31-2014 Mgmt Committee | 2013 |
| | Analyze muck depth and changes of much depth within estuaries, especially associated with tidal creek and rivers. | FW-A | | 10-31-2014 Mgmt Committee | 2013 |
| 1 | Coordinating the Biennial Seagrass Mapping for total study area consistency | FW-A | FW-a1 | 2008 coordinated, 2010, 2012 SFWMD did not map. | 2014 |
| 15 | Gather existing information on methods to prevent or recover seagrass scarring (e.g., sediment restoration and closed areas), craft recommendations and make the information available to decision makers. | FW-A | | | 2015 |
| | Create map of Caloosahatchee River estimated SAV and Vallisneria distribution during the 1960s. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2015 |
| | Compile Caloosahatchee River SAV monitoring data and identify gaps in distribution, frequency and methods. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2015 |
| | Create map of Caloosahatchee River SAV overlaid 2.5 foot bathymetry contour from 1993 data and compare to current conditions. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2016 |
| | Evaluate economic services associated with loss and restoration of Caloosahatchee River SAV. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2016 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|---|------------------|---------------------|--|-------------|
| | Develop and implement coordinated mapping and monitoring program for SAV habitats within Caloosahatchee River and tributaries. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2016 |
| | Compile existing research and study results of SAV restoration projects, including successes and lessons learned. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2016 |
| | Determine deep edge of Vallisneria growth in Caloosahatchee River using herbivore exclusion cages. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2018 |
| | Investigate methods for controlling herbivory on Caloosahatchee River SAV. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2018 |
| | Determine suitability of planting Vallisneria in stormwater treatment areas in southwest Florida. | FW-A | FW-a | Recommended by CHNEP Caloosahatchee River SAV Targets Working Group in 2014. | 2018 |
| | Map existing oyster habitats by type within the CHNEP estuaries by 2020. | FW-A | FW-a | CHNEP Oyster Habitat Restoration Plan Goal. | 2020 |
| | Monitor success of pilot oyster restoration projects implemented in a variety of habitats in 50% of CHNEP estuary strata by 2010. | FW-A | FW-a | CHNEP Oyster Habitat Restoration Plan Goal. | 2020 |
| 18 | Determine the natural variation in seagrass bed characteristic | FW-A | | Addressed in Seagrass Target development | Done |
| 76 | Conduct a Decennial Prop Scar Mapping and Analysis Project for Study Area | FW-B | FW-b | | 2009 |
| 20 | Develop methods to enhance seagrass recovery from prop scarring. | FW-B | | | 2013 |
| 25 | Examine pre- and post-dredging impacts on the environment. | FW-B | | | 2013 |
| 30 | Compile data and study the cumulative impacts of boat docks and hardened shorelines on SAV, oyster bar, intertidal, unvegetated and other habitats. | FW-B | | | 2013 |
| 72 | Compare aerial photography used for prop scar analysis with lower elevation photography for accuracy assessment | FW-B | | | 2013 |
| 84 | Determine cumulative impacts of single family docks and marinas. | FW-B | | | 2013 |
| 98 | Impacts of Boat Propeller Scars on Organisms that Rely on SAV and/or Open Bottom Habitats | FW-B | | | 2013 |
| 117 | Cumulative Impacts of Intra-Coastal Waterway Dredging and other dredging | FW-B | | | 2013 |
| 52 | Develop GIS data layer of mosquito ditches and other ditches for use in priority restoration plans | FW-C | | | 2013 |
| 59 | Assess the functional ecology of ephemeral wetlands and impacts of the Federal ruling regarding isolated wetlands | FW-C | | | 2013 |
| 93 | Wetland productivity rates | FW-C | | | 2013 |
| 94 | Investigate the change in white mangroves distribution to determine causes | FW-C | | | 2013 |
| 100 | Map isolated versus connected wetlands | FW-C | | | 2013 |
| 118 | Seasonal Distribution of Freshwater Fish in Ephemeral Wetlands | FW-C | | | 2013 |
| 124 | Assess impacts of vehicle tread marks on wetland habitat | FW-C | | | 2013 |
| 151 | Analyze Wetland Monitoring Reports Submitted to the WMD from Wells | FW-C | | | 2013 |
| 154 | Determine natural variation in freshwater wetland habitat extent | FW-C | | | 2013 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|---|------------------|---------------------|--|-------------|
| | Use 2011 saltmarsh mapping for post restoration monitoring, to compare gains. Update salt marsh maps using the same protocols in 2021. | FW-C | FW-c2 | New indicator in 2013 | 2021 |
| 106 | Determine natural variation in salt water marsh habitat extent | FW-C | | | 2021 |
| 55 | Develop a community profile of salt marsh systems | FW-C | | Funded in 2010 through 2012 by EPA | Done |
| 149 | Map mangrove systems by predominate species within existing programs | FW-C | FW-c1 | WPDG funded FY 2014-2016 | Funded |
| | Use WMD FLUCCS maps to track changes in freshwater wetland extent | FW-C | FW-c3 | New indicator in 2013 | Funded |
| 26 | Expand mangrove species composition monitoring throughout entire CHNEP area, monitor transects every 5-10 years to evaluate mangrove species changes. | FW-C | | WPDG funded FY 2014-2016 | Funded |
| 4 | Map shoreline treatments including hedged mangrove, windowed mangrove, uplifted mangrove, vertical seawall, riprap revetment, lawn, herbaceous wetlands, etc. | FW-D | FW-d | Completed in 2007, Volunteer component expanded, updated and assessed in 2010 and 2013 | 2016 |
| | Citizen Science- Replicate shoreline survey of urban lots. | FW-D | FW-d | | 2017 |
| 33 | Fill Gaps in understanding of biological responses to water levels and pollution | FW-E | | | 2013 |
| 40 | Impacts of Canal/Lake Management Activities on Fish and Wildlife in Southwest Florida | FW-E | | | 2013 |
| 83 | Evaluate lake management strategies in upper Peace River Basin & Winter Haven Chain of Lakes | FW-E | | | 2013 |
| 86 | Expand FWRI Fisheries Independent Monitoring Program to Lemon Bay and continued support of other areas | FW-F | FW-f | | 2013 |
| 86 | Fish sampling in creeks downstream of Flatwoods Restoration ~40K/yr | FW-F | FW-f | Phil Stevens, FWC, submitted 10/2014 and is complementary to FW-F | 2013 |
| 86 | Extension of fish sampling in Coral Creek ~40K/yr (so that sampling overlaps temporarily with Alligator Creek fish sampling) | FW-F | FW-f | Phil Stevens, FWC, submitted 10/2014 and is complementary to FW-F | 2013 |
| 86 | Myakka/Peace large fish-floodplain connections 50-100K/yr (collaboration with FWC Lakeland office) | FW-F | FW-f | Phil Stevens, FWC, submitted 10/2014 and is complementary to FW-F | 2013 |
| 86 | Reestablish FIM Caloosahatchee River Estuary ~150K/yr | FW-F | FW-f | Phil Stevens, FWC, submitted 10/2014 and is complementary to FW-F | 2013 |
| 112 | Determine the natural area and extent of upland habitat | FW-F | | | 2013 |
| 116 | Best Management Practices (BMP's) for Fish and Wildlife Habitat Conservation on Agricultural Lands | FW-F | | | 2013 |
| 136 | WMD or FWC to map hydric pine flatwoods within existing programs | FW-F | | | 2013 |
| 152 | Effects of cattle ranching on plant communities | FW-F | | | 2013 |
| 156 | Assess the impacts of firelines (fire plow lines) on wildlife | FW-F | | | 2013 |
| | Determine how SAV loss in the Caloosahatchee affects manatee movements and mortality | FW-F | | James Douglass, FGCU, presented at 10/10/2014 TAC meeting | 2013 |
| | Monitor and assess invertebrate grazers that may control algal abundance | FW-F | | James Douglass, FGCU, presented at 10/10/2014 TAC meeting | 2013 |
| | Map of historic and modern Tropical Hardwood Hammocks | FW-F | | | 2013 |
| | Pre-Development Map of Sarasota County, using GLOS note method. | FW-F | | | 2013 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|---|------------------|---------------------|--|-------------|
| | Pre-Development Map of SFWMD portion of CHNEP, using GLOS note method. | FW-f | | | 2013 |
| 60 | Studies Targeting Sea level rise and its effects | FW-F | | Several studies funded, including salt marsh and seagrass and mangroves. | Funded |
| | Inventory and evaluate environmental compliance efforts | FW-G | FW-g | New indicator in 2013 | 2013 |
| | Continue tracking acreage in conservation management. | FW-H | FW-h | New indicator in 2013 | 2013 |
| 153 | Assess the effect of mitigation bank restoration on fauna | FW-H | | | 2013 |
| 16 | Prepare map of conservation easements within the Study Area. | FW-H | | | Done |
| 2 | Assess the economic, social, and environmental benefits of protected land in the CHNEP study area. | FW-J | | Completed for Pine Island Sound | 2013 |
| 45 | Cost benefit analysis comparing land acquisition and easements keeping lands in low impact agriculture versus creation of new infrastructure for developments in rural areas, include single-family ranchettes. | FW-J | | | 2013 |
| | Expand the SWFRPC ECOSERVE technique that was applied to the Pine Island Sound and associated lands to the entire CHNEP study area. | FW-J | | Requested by the Management Conference, 8/19/2013 | 2013 |
| 11 | Develop a local loading model that compares preserved land to developed land | FW-J | | 2009 Loading model compares different land use types | 2019 |
| 31 | Develop a protocol with Florida Natural Areas Inventory to develop complete surveys for invasive exotic plants within study area public conservation lands and implement | FW-L | | | 2013 |
| 115 | Create a monitoring program to determine the percent of exotic plants in saltwater marshes throughout the CHNEP area | FW-L | | | 2013 |
| 145 | Compile nuisance exotic animals for the study area from the FWC and USGS databases | FW-L | | | 2013 |
| 125 | Exotics research (fish, amphibians, reptiles, vegetation) | FW-M | | | 2013 |
| 141 | Conduct a biogeographic analysis of aquatic and terrestrial exotics and assess the threats. | FW-M | | | 2013 |
| 150 | Create a monitoring program to determine the percent of exotic plants in freshwater marshes throughout the CHNEP area | FW-M | | | 2013 |
| 8 | Adopt targets for river oligohaline, mesohaline, and polyhaline zone health | HA-A | HA-a | Analysis of typical minimums, maximums and averages conducted in 2012; MFL models | 2013 |
| 12 | Develop an overarching three-dimensional model for the entire tidal Charlotte Harbor system and more detailed watershed models for each estuary watershed. | HA-A | | Various EDFC Circulation models are developed for Numeric Nutrient Criteria and CRWPP, Harbor Branch submitted for NOAA funding. | 2013 |
| 48 | Identify the location and extent of the historic oligohaline zones within the Charlotte Harbor NEP study area. | HA-A | | | 2013 |
| 73 | Evaluate Life History of Reptile/Amphibian Populations as an indicator of Ecosystem Shift | HA-A | | | 2013 |
| 77 | Use current and historic distribution of shellfish (i.e. oysters and bay scallops) as an indicator of salinity regime. | HA-A | | | 2013 |
| 90 | Wading Birds as Environmental Indicators | HA-A | | | 2013 |
| 101 | Black Mangrove Marsh as Water Level Stage Performance Measures | HA-A | | | 2013 |
| 107 | Salt flats as Water Level Stage Performance Measures | HA-A | | | 2013 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|--|------------------|---------------------|--|-------------|
| 6 | Determine the natural variation of flow in the Caloosahatchee, Peace, Myakka, and Estero Rivers and analyze the amount of time the flows are outside the range | HA-A | | SWFWMD conducted MFL analyses for Peace and Myakka; SFWMD working on Caloosahatchee | 2015 |
| 9 | Study the effects of freshwater releases on key estuarine components (e.g. SAV, oysters, fish) | HA-A | | MFL analyses and CRWPP | Funded |
| | Inventory uses of new SWFWMD integrated models and SFWMD models for improvements in decisions | HA-B | HA-b | New indicator in 2013 | 2013 |
| 7 | Identify areas with limited flow data, install gauges and monitor flow in relation to natural variation, e.g. storms & droughts | HA-B | | Possibly handled adequately through hydrologic models | 2013 |
| 19 | Workable watershed models for land and water management, with water quality and hydrology goals | HA-B | | Address in MFL and NNC development | 2013 |
| 27 | Quantify the effects of large canals (e.g. Gator slough, Cape Coral spreader canals) on flow/water quality. | HA-B | | | 2013 |
| 41 | Expand SWFFS or CFRPC Hydrologic Model to Charlotte Harbor Study Area | HA-B | | | 2013 |
| 65 | Expand digital Bathymetry Mapping to Entire Study Area | HA-B | | May be finished by SWFWMD, done for SFWMD | 2013 |
| 66 | Determine maximum cumulative withdrawals | HA-B | | | 2013 |
| 140 | Evaluate the interaction between groundwater and surface water and how they contribute to overall flows | HA-B | | | 2013 |
| 158 | Subsurface Hydrology in Natural Communities at Myakka River State Park and Beker B Property | HA-B | | | 2013 |
| 159 | Relate area hydrologic models to its natural systems models | HA-B | | | 2013 |
| 157 | Improved Topographic Resolution | HA-B | | Fine LiDar being developed for state. USGS project of mapping streams and wetlands in Charlie Creek watershed should be expanded to entire study area. | Done |
| 54 | Map of 1 st and 2 nd order streams and changes | HA-C | HA-c | | 2013 |
| | Inventory and evaluate long-term average withdrawals from the Floridian aquifer, pursuant to SWUCA. | HA-D | HA-d | New indicator in 2013 | 2013 |
| 62 | Determine the pre-development seasonal aquifer elevations for the Peace, Myakka, and Caloosahatchee River | HA-D | | | 2013 |
| 96 | Investigate the use of water from reclaimed mine lakes to recharge aquifer systems. | HA-D | | | 2013 |
| | Assess compliance with adopted MFLs | HA-E | HA-e | New indicator in 2013 | 2013 |
| 61 | Monitor flow in the Estero River | HA-E | | | 2013 |
| | Track Everglades and Comprehensive Southwest Florida Restoration Plan implementation | HA-F | HA-f | New indicator in 2013 | 2013 |
| 120 | Southwest Florida Feasibility Study | HA-F | | | Done |
| 36 | Mapping/GIS program to track changes in subbasin hydrology | HA-G | HA-g | | 2013 |
| 142 | Feasibility Assessment for the Environmental Restoration of Selected "Old Mine Lands" in the Upper Peace River basin | HA-G | | | 2013 |
| 38 | Map historic and current hydrologic subbasins and analyze changes | HA-G | | Completed in 2008. | Done |
| 57 | Regional / Subregional Water Budget | HA-H | HA-h | | 2013 |
| 17 | Evaluate the Impacts of Man-made Barriers to Historic Flows | HA-I | | Addressed in Lower Myakka MFL | 2013 |
| 58 | Prepare map of barriers to flow on natural waterways. | HA-I | | | 2013 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|---|------------------|---------------------|------------------------------|-------------|
| 130 | Monitor hydrologic conditions near artificially created structures (e.g. weirs, bridges) | HA-I | | | 2013 |
| | Hydrologic monitoring of hydrologic restoration projects to determine changes of flow and upstream acres improved. | HA-I | HA-i | New indicator in 2013 | |
| | Map ditches and canals that have been modified to slow flow. | HA-J | HA-j | New indicator in 2013 | 2013 |
| 160 | Update Delineation of the Regional Flowways | HA-J | | | 2013 |
| | Assess changes in abundance and diversity in estuarine segments | HA-K | HA-k2 | New indicator in 2013 | 2013 |
| 28 | Research effects of existing reservoirs on downstream waters | HA-K | | | 2013 |
| 129 | Compare Water Use to Water Conservation Programmatic Variables | HA-K | | | 2013 |
| 137 | Examine soil chemistry at proposed reservoir sites. | HA-K | | | 2013 |
| 138 | Examine groundwater chemistry at proposed reservoir sites. | HA-K | | | 2013 |
| | Clarify definitions of reservoirs and other related water storage practices. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Complete an inventory of the numbers, types and locations of current, proposed and possible reservoirs and related water storage facilities. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Complete a study to evaluate the natural water storage capacity of the watershed. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Initiate aggressive water conservation programs and include water conservation in water budget analyses and when planning, siting, assessment and permitting of new reservoirs and other hydrologic alterations. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Coordinate agency efforts to consider reservoirs from a watershed perspective (rather than a location-by-location approach), when planning, siting, assessment and permitting of new reservoirs and other hydrologic alterations. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Identify and develop scientific support for sensitive indicators of ecosystem change at several spatial and temporal scales and use them to monitor and assess downstream effects of structural and operational changes to the hydrologic system. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Increase consideration of environmental factors, particularly the effects of reservoirs on the freshwater flow regime and water budget of the receiving streams and estuaries when planning, siting, assessment and permitting of new reservoirs and other hydrologic alterations. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Increase consideration of cost-benefit analysis and economic costs when planning, siting, assessment and permitting of new reservoirs and other hydrologic alterations, including emphasis on the economic value of natural water storage and conservation. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Further explore the "eco-reservoirs" concept. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Engage staff from different levels of agencies in discussions furthering sustainable water management within the CHNEP as it ties multiple water related considerations together, including Minimum Flows and Levels (MFLs), water user permits, wildlife management considerations, etc. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Assure unbiased technical reviews of findings regarding reservoirs, possibly using a National Research Council Panel approach. | HA-K | | From 2009 Reservoir Workshop | 2013 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|--|------------------|---------------------|------------------------------------|-------------|
| | Enhance interagency coordination of reservoir management using new technologies, improved models and more monitoring data, and in some cases conducting special studies to assess performance. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Increase consideration of cumulative impacts on demographic, economic, political, legal, public safety when planning and permitting water storage activities and hydrologic alterations. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Identify primary water users to engage them in watershed-wide conservation discussions. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Include National Environmental Policy Act requirements when planning, siting, assessment and permitting of new reservoirs and other hydrologic alterations. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Give greater consideration to climate change and its effects when siting and designing reservoirs. | HA-K | | From 2009 Reservoir Workshop | 2013 |
| | Map oysters in Caloosahatchee 15 years after construction of C-43 reservoir | HA-K | HA-k1 | New indicator in 2013 | 2030 |
| | Inventory and evaluate adoption of LID rules | HA-L | HA-l | New indicator in 2013 | 2013 |
| 146 | Inventory and evaluate impervious contributions, BMPs, etc. through land monitoring | HA-L | | | 2013 |
| | Track greater than 2800 cfs over S-78, Franklin Locks. | HA-M | HA-m | New indicator in 2013 | 2013 |
| 80 | Identify maximum flows for restoration targets | HA-M | | | Done |
| | Inventory and evaluate hydrologic restoration project acreage | HA-N | HA-n | New indicator in 2013 | 2013 |
| 35 | Collect information and analyze effects that stormwater runoff has on flow characteristics of tributaries | HA-N | | | 2013 |
| 67 | Assess the overall effect of multiple stormwater treatment ponds in a watershed on the hydrologic cycle and freshwater delivery to the streams and estuarine system | HA-N | | | 2013 |
| 95 | Wildlife and Flow-way Crossing Study | HA-N | | | 2013 |
| 127 | Land Monitoring System | HA-N | | | 2013 |
| 128 | Create a GIS map of stormwater systems and facilities | HA-N | | | 2013 |
| | Track percent of wastewater effluent captured as reuse water. | HA-O | HA-o | New indicator in 2013 | 2013 |
| 121 | Study the effectiveness, benefits, and impacts of existing reuse water services in relation to varying land uses. Examine water quality of reuse water to determine if runoff is contributing to impairments of adjacent wetlands and waterbodies. | HA-O | | | 2013 |
| | Evaluate public perceptions concerning the use of reuse water. Determine the barriers and benefits surrounding the acceptance of reuse water for recharge and natural system enhancement projects. | HA-O | | | 2013 |
| | Identify areas where reuse water service has the greatest potential for benefit, evaluate options for providing such service and study the feasibility of setting up service to areas without reuse water service. | HA-O | | | 2013 |
| | Conduct scientifically valid survey of residents knowledge and behavioral changes. | SG-A | SG-a | New performance indicator for 2013 | 2013 |
| | Inventory citizen restoration and monitoring efforts, and identify gaps. | SG-B | SG-b | New performance indicator for 2013 | 2013 |
| | Citizen Science- Foster citizen water quality monitoring programs such as Pond-, Lake- and Canal-watch programs, and ensure upload to STORET. | SG-B | | | 2013 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|--|------------------|---------------------|-------------------------------------|-------------|
| | Citizen Science- Foster Volunteer Oyster Habitat Monitoring. | SG-B | | | 2013 |
| | Citizen Science- Inventory and foster Volunteer Stream Monitoring following EPA Blue Book. | SG-B | | | 2013 |
| | Citizen Science- Use i-Tree to characterize urban forests by subbasin. | SG-B | | | 2013 |
| | Citizen Science- Foster the Charlotte Harbor Volunteer Water Quality Monitoring Program (CHEVWQMN). | SG-B | | | 2013 |
| | Inventory and evaluate outreach efforts in underserved (rural, poor, minority) communities. | SG-C | SG-c | New performance indicator for 2013 | 2013 |
| | Enhance effective print communication tools, such as Harbor Happenings magazine and the calendar. | SG-D | SG-d | New performance indicator for 2013 | 2013 |
| | Enhance effective social media tools, such as the website, YouTube videos, tumblr, etc. | SG-D | | | |
| | Develop and adapt social media initiatives such as the Citizens Academy. | SG-D | | | |
| | Inventory and evaluate Public Outreach and micro-grant accomplishments. | SG-E | SG-e | New performance indicator for 2013 | 2013 |
| | Inventory and evaluate public outreach events offered by CHNEP and by partners. | SG-F | SG-f | New performance indicator for 2013 | 2013 |
| | Inventory and evaluate audiences reached in special target audience efforts. | SG-G | SG-g | New performance indicator for 2013 | 2013 |
| | Inventory and evaluate curricula that implements the CCMP. | SG-H | SG-h | New performance indicator for 2013 | 2013 |
| | Inventory and evaluate new residents programs. | SG-I | SG-i | New performance indicator for 2013 | 2013 |
| | Continue showcase accomplishments through mechanisms such as Harbor Happenings and YouTube. | SG-J | SG-j | New performance indicator for 2013 | 2013 |
| | Initiate an awards program coupled with an annual event (with perhaps different venues and themes.) Require photographs and summary so accomplishments can be showcased. | SG-J | | | |
| | Present scientific information so that is easily understood by people. | SG-K | SG-k | New performance indicator for 2013 | 2013 |
| | Place informative signage in public transit buses and at bus terminals. | SG-K | | | |
| | Inventory and evaluate CHNEP policy-based communications | SG-L | SG-l | New performance indicator for 2013 | 2013 |
| | Inventory and evaluate funding sources to support CCMP | SG-M | SG-m | New performance indicator for 2013 | 2013 |
| | Update restoration and research needs inventories | SG-M | SG-n | New performance indicator for 2013 | 2013 |
| | Inventory and evaluate incentives that have been implemented | SG-O | SG-o | New performance indicator for 2013 | 2013 |
| | Inventory and evaluate improvements to permits or standards | SG-P | SG-p | New performance indicator for 2013 | 2013 |
| 143 | Monitoring and Modeling Global Climate Change Impacts | SG-Q | | | 2013 |
| | Track changes to precipitation trends and patterns, including extreme precipitation | SG-Q | | From 2010 Climate Change Indicators | 2013 |
| | Track Sea-levels, especially at the Fort Myers gauge. | SG-Q | | From 2010 Climate Change Indicators | 2013 |
| | Track changes in water temperature, normalized for time of day and season | SG-Q | | From 2010 Climate Change Indicators | 2013 |
| | Track changes in floral organ differentiation using model data. | SG-Q | | From 2010 Climate Change Indicators | 2013 |
| | Track changes in coastal erosion rates | SG-Q | | From 2010 Climate Change Indicators | 2013 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|---|------------------|---------------------|--|-------------|
| | Track habitat migration of seagrass, mangrove and slat marsh. | SG-Q | | From 2010 Climate Change Indicators | 2013 |
| | Citizen Science- Blue Carbon Sequestration in Coastal Mangrove Plots | SG-Q | | | 2013 |
| | Maintain and expand monitoring programs | SG-R | SG-r | New performance indicator for 2013 | 2013 |
| | Maintain the online Water Atlas | SG-S | SG-s | New performance indicator for 2013 | 2013 |
| | Review 303(d) list for at least two water bodies delisted because improving water quality by 2015. | WQ-A | WQ-a | New indicator in 2013 | 2013 |
| | Continued monthly water quality monitoring through the CCHMN. | WQ-B | WQ-b | New indicator in 2013 | 2013 |
| 32 | Assess accuracy and sufficiency of water quality data in Charlotte, Hardee, DeSoto, and Polk Counties | WQ-B | | Water Atlas | 2013 |
| 37 | Invest in real-time water quality data collection, analysis, and delivery | WQ-B | | | 2013 |
| 42 | Expand Volunteer Water Quality Monitoring Program | WQ-B | | | 2013 |
| 75 | Determine the causes of turbidity (natural vs. anthropogenic) by hydrologic basin | WQ-B | | | 2013 |
| 82 | Create a more extensive groundwater quality monitoring program | WQ-B | | | 2013 |
| 92 | Establish monitoring program for emerging contaminants including pharmaceuticals and Personal Care Products (PPCPs) | WQ-B | | | 2013 |
| 109 | Origins of Organic Matter within the Sediments of the CHNEP Study Area | WQ-B | | | 2013 |
| 110 | Survey sediments to assess heavy metals every several years | WQ-B | | | 2013 |
| 122 | Assess the Magnitude & Extent of Chem. Contamination & Toxicity of Sediments | WQ-B | | | 2013 |
| 68 | Charlotte Harbor Water Quality Monitoring | WQ-B | | | Continuing |
| 78 | Surface Water Monitoring | WQ-B | | | Continuing |
| 3 | Identify gaps in water quality data needed to assess impairments | WQ-B | | Completed by FDEP through impaired waters assessments. | Done |
| | Confirm five sources of pollution and eliminate them by 2018. | WQ-C | WQ-c | New indicator in 2013 | 2013 |
| 13 | Identify more accurate nutrient loading rates from various land uses in the Charlotte Harbor Watershed | WQ-C | | 2009 Loading model was calibrated with gauge data. | 2013 |
| 34 | Determine the cumulative effect of pollutant loading, including emerging contaminants, nutrients, non-algal suspended matter and other pollutants | WQ-C | | Work completed in 2009. | 2013 |
| 88 | Quantify and assess the impacts of sediment loads from Lake Okeechobee into the Tidal Caloosahatchee | WQ-C | | | 2013 |
| 131 | Investigate sources and effects of atmospheric deposition and develop action plans to address findings. | WQ-C | | | 2013 |
| 108 | Determine feasibility of recycling/reuse of phosphate in agricultural practices | WQ-D | | | 2013 |
| | Use i-Tree Hydro to assess Orange River basin and impact of more trees. | WQ-D | | New research need | 2014 |
| | Replicated pollutant load modeling accomplished in 2007. | WQ-D | WQ-d | New indicator in 2013 | 2020 |
| 22 | Identify sources of bacteria, nutrients, and other indicators in water bodies | WQ-E | | | 2013 |
| 104 | Investigate the presence of organophosphate pesticides in run-off effect on water mammals in the Gulf. | WQ-E | | | 2013 |
| 5 | Conduct a Triennial Water Quality Analysis to establish status and trends | WQ-E | WQ-e, FW-e | Funded in 2010 but delayed to 2011 so Numeric Nutrient Criteria could be funded. | 2015 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|--|------------------|---------------------|--|-------------|
| 14 | If subbasins are not meeting exceedance criteria, develop load reduction goals and management strategies to address exceedances | WQ-E | | Being developed through TMDL adoption. | Continuing |
| | Assess all water quality reform adopted by state and local governments. | WQ-F | WQ-f | New indicator in 2013 | 2013 |
| 49 | Study county by county water quality regulations-what is working and what is not (would add to base of knowledge from Spring '05 Tampa Bay report-Best Practices) | WQ-F | | | 2013 |
| 102 | Develop BMP Manual for SWF With Cost/Benefit Assessments | WQ-F | | | 2013 |
| | Map areas that have regular septic system maintenance programs implemented. | WQ-G | WQ-g | New indicator in 2013 | 2013 |
| 43 | Impacts of light attenuation on seagrass community structure | WQ-G | | | 2013 |
| 50 | Develop site specific alternative criteria for DO, Chl a, Turbidity, Salinity, Pesticides | WQ-G | | | 2013 |
| 69 | Assess the ecological impact of pesticides and nutrients in freshwater habitats | WQ-G | | | 2013 |
| 91 | Effects of Hypoxic and Anoxic Condition on Benthic Organisms in Charlotte Harbor | WQ-G | | | 2013 |
| 103 | Conductivity Change Implications for Freshwater Wetland Biota | WQ-G | | | 2013 |
| 113 | Establish or expand sediment monitoring programs for pesticides. | WQ-G | | | 2013 |
| 132 | Whether hypoxia is ancient or recent | WQ-G | | | 2013 |
| 133 | Impacts of pharmaceuticals/endocrine disruptors | WQ-G | | | 2013 |
| 134 | Assessment of Adverse Ecological Impact of Agricultural Chem's in f/w Habitat | WQ-G | | | 2013 |
| 135 | Freshwater Invertebrates as Indicators of Cultural Eutrophication | WQ-G | | | 2013 |
| 139 | Develop Stream Condition Index for Charlotte and Lee Counties | WQ-G | | | 2013 |
| 161 | Assess impacts of arsenic from boat docks and marinas | WQ-G | | | 2013 |
| 10 | Develop exceedance criteria for numeric Charlotte Harbor NEP water quality targets using the plane of constant attenuation. Determine if subbasins in Lemon Bay, Charlotte Harbor and Estero Bay are meeting exceedance criteria | WQ-G | | Funded in 2008 and to be completed 2011, resulting in adopted numeric nutrient criteria. | Done |
| 24 | Modify numeric water quality targets to incorporate quality of light considerations and seagrass light requirements | WQ-G | | Funded in 2009 | Done |
| 29 | Refine optical models to help establish local standards or numeric water quality targets for chlorophyll a, turbidity, and total suspended solids that incorporate dissolved matter. | WQ-G | | Contracted with Mote in 2012 | Done |
| 79 | Develop partial attenuation coefficients for the CHNEP water quality optical model reflecting spatiotemporal variability of absorbance and scattering components in the water column | WQ-G | | | Done |
| | Identify areas with septic tank maintenance program enforced | WQ-H | WQ-h | New indicator in 2013 | 2013 |
| 70 | Assess bacteria, nutrient load, and base flow impacts of septic tank systems, WWTP, and reuse water (Conduct appropriate groundwater and surface water studies necessary to determine the cumulative impacts of high densities of septic tanks.) | WQ-H | | | 2013 |
| 74 | Establish a Shellfish/WQ-monitoring network to ensure sampling of 100% of Class II waters in the study area | WQ-H | | | 2013 |
| 97 | Continue to assess the water quality impacts of biosolid landspreading | WQ-H | | | 2013 |

| 2007 Rank | Project | 2013 CCMP Action | CCMP 2013 Indicator | Status | Year needed |
|-----------|---|------------------|---------------------|---|-------------|
| 123 | Identify appropriate indicators to identify septic system discharges. | WQ-H | | | 2013 |
| 155 | Identify Sludge Application Sites and Amounts | WQ-H | | | 2013 |
| 23 | Determine the source of nutrients linked to macro-algal blooms. | WQ-I | | | 2013 |
| 44 | Establish consistent freshwater HAB sampling in the Caloosahatchee, Peace, and Myakka | WQ-I | | | 2013 |
| 46 | Determine the relationship between macro- and micro-nutrients and phytoplankton/algal blooms. | WQ-I | | | 2013 |
| 47 | Determine nutrient influence on phytoplankton community dynamics | WQ-I | | | 2013 |
| 51 | Establish consistent sampling for macro-algae and periphyton density, composition, and spatial extent within the study area | WQ-I | | | 2013 |
| 147 | Changes in phytoplankton community dynamics in Charlotte Harbor and implications for hypoxia and red tide | WQ-I | | | 2013 |
| 148 | Prepare annual and mean monthly maps of red tide severity and extent within the study area | WQ-I | | | 2013 |
| 162 | Assess Phytoplankton Species Composition and Abundance in Myakka Lakes | WQ-I | | | 2013 |
| | Install continuous nutrient monitoring devices in critical locations (e.g., areas commonly experiencing phytoplankton blooms). | WQ-I | | | 2013 |
| | Analyze data, calculate ratios and compare the general nutrient ratio requirements to those present in the systems to identify limiting factors. Determine natural phytoplankton/algal bloom occurrences and those caused by anthropogenic impacts. | WQ-I | | | 2013 |
| | Perform bioassays using water collected from water bodies/areas of concern to identify the limiting nutrient for the phytoplankton composition present in the water column. | WQ-I | | | 2013 |
| | Monitor zooplankton concentrations that may exhibit top-down, grazing influence on phytoplankton and therefore mask the effect of increased nutrients. | WQ-I | | | 2013 |
| | Determine if and to what extent the practice of removing drift algae affects natural systems. | WQ-I | | | 2013 |
| | Analyze nutrient content and stable isotope ratios in seagrasses and algae to assess trophic state and nutrient sources | WQ-I | | James Douglass, FGCU, presented at 10/10/2014 TAC meeting | 2013 |
| 39 | Establish consistent sampling for red tide and HAB in the study area, for taxonomic composition, severity and duration. | WQ-I | WQ-i | | FWC Done? |
| | Map urban areas that are served by central sewer v not in 900' buffer | WQ-J | WQ-j | New indicator in 2013 | 2013 |
| 81 | Evaluate water quality impacts of Conservation Landscaping principles | WQ-K | | | 2013 |
| 63 | Case study of "better-than-BMP" development in region (e.g. roof gardens, solar energy use, pervious pavements, conservation landscaping, etc.) | WQ-M | | | 2013 |
| 144 | Stormwater Best Management Practices Map | WQ-M | | | 2013 |
| | Collect and evaluate existing and relevant survey information related to the CCMP. | | | | |

7. CHNEP RESTORATION NEEDS PLAN

The CHNEP Comprehensive Conservation Management Plan (CCMP) Priority Action SG-N calls to “Update comprehensive inventories of research, restoration, legislative, and outreach needs.” In 2003, CHNEP developed a methodology to identify land protection and restoration needs within ArcGIS tied to detailed information held within an Access database. By 2006 the work was completed throughout the study area and the Southwest Florida Feasibility Study area. The resulting mapping has served as the base to the Southwest Florida Comprehensive Watershed Plan (approved by the Corps of Engineers and submitted to Congress), the 2008 and 2013 Comprehensive Conservation and Management Plan updates, Conservation 2020 criteria, SWIM Plan updates and other partnership efforts.

In addition, partners have been requesting a restoration needs update, including: an adopted document for distribution, restoration targets and clearly defined funding priorities.

CHNEP Director Lisa Beever drafted the first part of the document for review by the Management Conference. The document includes:

- Land protection and restoration history,
- Review of habitat changes from pre-development to 2009,
- Tampa Bay Estuary Program “Restore the Balance” approach, and
- Proposed “Restore the Balance” approach for CHNEP.

The proposed “Restore the Balance” approach was applied to the CCMP FW-1 habitats (seagrasses, oyster reefs, mangroves, saltwater marsh, freshwater wetlands, uplands and the water column). Two algorithms were proposed: one that results in land acquisition and restoration totals similar to CCMP Objective FW-2 (planning horizon 2025) and one that results in land acquisition and restoration totals similar to the CCMP Vision (buildout).

Director Beever began incorporating appropriate additions to the shapefile from sources such as Florida Forever and Wildlands Conservation. FNAI Critical Lands and Waters Identification (CLIP) data was downloaded for comparison of current mapping results to CLIP priorities. After review of the geographic update, it is proposed that priorities be selected following a methodology used by the Estero Bay Agency on Bay Management (ABM). The proposed methodology begins with committee members writing a project name on an index card for each of 8 watershed basins. Once 4 projects are in position in each of the watershed basins, committee members may knock a project off the board with one of their own. The process continues until the committee members are satisfied with the selected priorities. Following the committee rankings, staffs review the choices and developed criteria that express the choices made. This methodology was successfully used by the ABM to identify broadly held priorities, resulting in implementation of priority projects.

Recommendation:

Motion to recommend the Management Conference adopt the CHNEP “Restore the Balance” algorithms and resulting targets and direct staff to incorporate appropriate additions from partners’ needs inventories and implement a methodology to identify priorities for funding.

Attachment:

Draft CHNEP Restoration Needs Plan Update

Restoration Needs Plan Update



Credit: Catherine Corbett, Flooded Horse Creek, June 25, 2003

Hydrologic restoration and protection of floodplain corridors with upland buffers are key elements of the CHNEP restoration strategy to restore the balance.

Charlotte Harbor National Estuary Program Technical Report 15-3 Draft 12/31/2014



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The Charlotte Harbor National Estuary Program is a partnership of citizens, elected officials, resource managers and commercial and recreational resource users working to improve the water quality and ecological integrity of the greater Charlotte Harbor watershed. A cooperative decision-making process is used within the Program to address diverse resource management concerns in the 4,700-square-mile study area. Many of these partners also financially support the Program, which, in turn, affords the Program opportunities to fund projects. The entities that have financially supported the Program include the following:

U.S. Environmental Protection Agency
Southwest Florida Water Management District
South Florida Water Management District
Florida Department of Environmental Protection
Florida Coastal Zone Management Program
Peace River/Manasota Regional Water Supply Authority
Polk, Sarasota, Manatee, Lee, Charlotte, DeSoto, and Hardee Counties
Cities and Towns of Sanibel, Cape Coral, Fort Myers, Punta Gorda, North Port, Venice,
Fort Myers Beach, Winter Haven, and Bonita Springs
and the Southwest Florida Regional Planning Council.

Charlotte Harbor National Estuary Program

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Executive Summary

Recommendations:

Declare a special habitat designation for rare habitats in the CHNEP study area, such as “CHNEP Rare and Exemplary Natural Communities.” Tropical hardwood hammocks, coastal and xeric oak scrub, bay swamps, and oyster reefs fit this designation.

Purpose

The Charlotte Harbor National Estuary Program (CHNEP) was created under Section 320 of the Clean Water Act. Each of the 28 National Estuary Programs (NEPs) is required to adopt a *Comprehensive Conservation and Management Plan* (CCMP.) The CHNEP CCMP highlights water quality degradation, hydrologic alteration, fish and wildlife habitat loss and stewardship gaps as priority problems. CHNEP implements its CCMP through research, restoration, public outreach and advocacy. CCMP priority action SG-N calls for CHNEP to “update comprehensive inventories of research, restoration, legislative and outreach needs.”

CHNEP last updated its CCMP in 2013. The first comprehensive restoration needs inventory was completed in 2006. CHNEP staff developed the methodology for the restoration needs inventory to be completed through various partnerships. These partnerships resulted in a geographic information systems (GIS) file with a detailed table describing each restoration proposal. These proposals included conservation land acquisition which was viewed as a key element of restoration within the CHNEP study area.

Priority action SG-N calls for CHNEP to “update comprehensive inventories of research, restoration, legislative and outreach needs.”

Though the plan was adopted into the in the 2008 (and later 2013) updates of the CCMP, its most useful form was a GIS shapefile that could be adopted quickly into other planning efforts. The most notable is the Southwest Florida Feasibility Study (SWFFS), authorized under the Water Resources Development Act (WRDA) 2000. The CHNEP Restoration Needs (expanded by the Big Cypress Restoration Team using the CHNEP methodology) was used as the base to the SWFFS and consequently incorporated in the *Southwest Florida Comprehensive Watershed Plan* (SWFCWP.) It is estimated that the CHNEP plan reduced the SWFFS effort by one year. The SWFCWP was approved by the US Corps of Engineers and submitted to Congress. It has been also utilized as the base of the Lee County Master Mitigation Plan, one criteria for Lee County’s Conservation 2020 Program, Conservation Charlotte acquisitions, Peace River corridor planning, Mosaic’s off-site mitigation proposals and the CHNEP study area portion of the *Southwest Florida Regional Restoration Plan*, adopted by the three Florida Gulf NEPs.

In addition to the SG-N priority action calling for a restoration needs update, emerging tools needs and opportunities necessitate a comprehensive restoration plan update including:

- Adoption of the Resources and Ecosystems Sustainability, Tourism Opportunities and Revived Economy of the Gulf Coast Act of 2011 (RESTORE Act)
- Availability of Critical Lands and Waters Identification Project (CLIP) version 3, completed February 2014
- Adoption of freshwater wetland restoration goals, by the Tampa Bay Estuary Program in September 2013, with plans to add restoration targets for coastal uplands, oyster bars and hard-bottom habitats. The freshwater wetland targets adds to the “Restoring the Balance” approach which had set targets for seagrass, salt marsh and salt barren habitats in 2010
- Investment in restoration planning by partners, many of which are through broad partnerships including the CHNEP.

These tools will be incorporated in the update with an eye on potential restoration opportunities.

Background

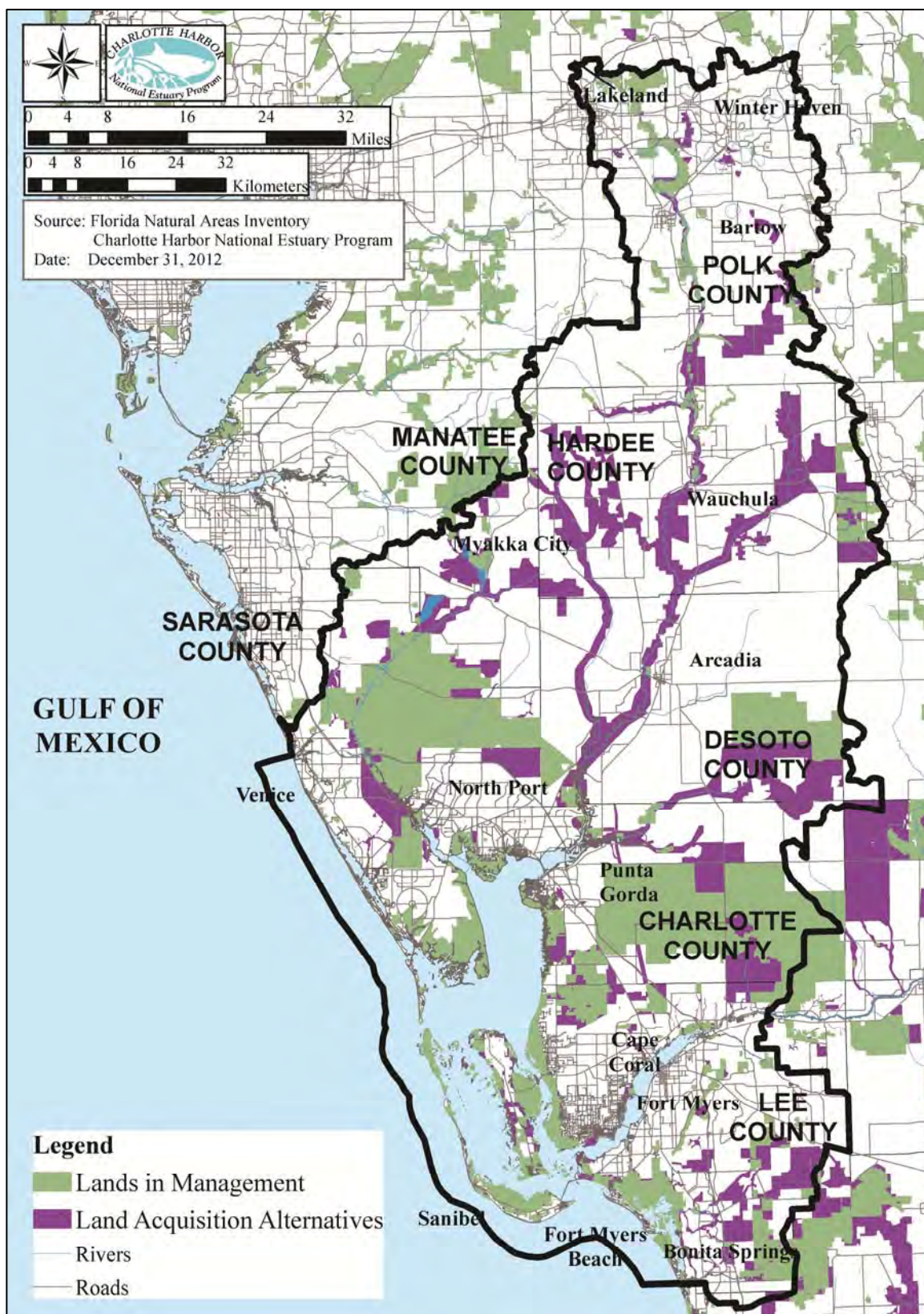
2006 Restoration Needs Planning History

Between 2004 and 2006, CHNEP developed a methodology to inventory restoration needs both spatially and with detailed information. The inventory began with the Estero Bay Agency on Bay Management (EBABM.) The EMABM had already drawn a map of proposed land acquisition sites on USGS paper maps and were interested in adding restoration sites. CHNEP staff developed the database and funded preparation of a geographic information system (GIS) shape file which could be later linked to the database. The EBABM completed the shape file and database. Then the Southwest Florida Regional Restoration Coordination Team (authorized by the Working Group of Everglades Restoration) completed the Caloosahatchee basin using the same methodology. The methodology was applied to the Lee County's island areas by CHNEP hosting sessions through the City for Sanibel and Town of Fort Myers Beach. The Southwest Florida Water Management District (SWFWMD) then funded the Charlotte Harbor Environmental Center (CHEC) to complete the inventory and mapping in the rest of the CHNEP study area. Finally, the Big Cypress Basin Restoration Coordination Team completed the inventory and mapping for the basin south of the CHNEP study area.

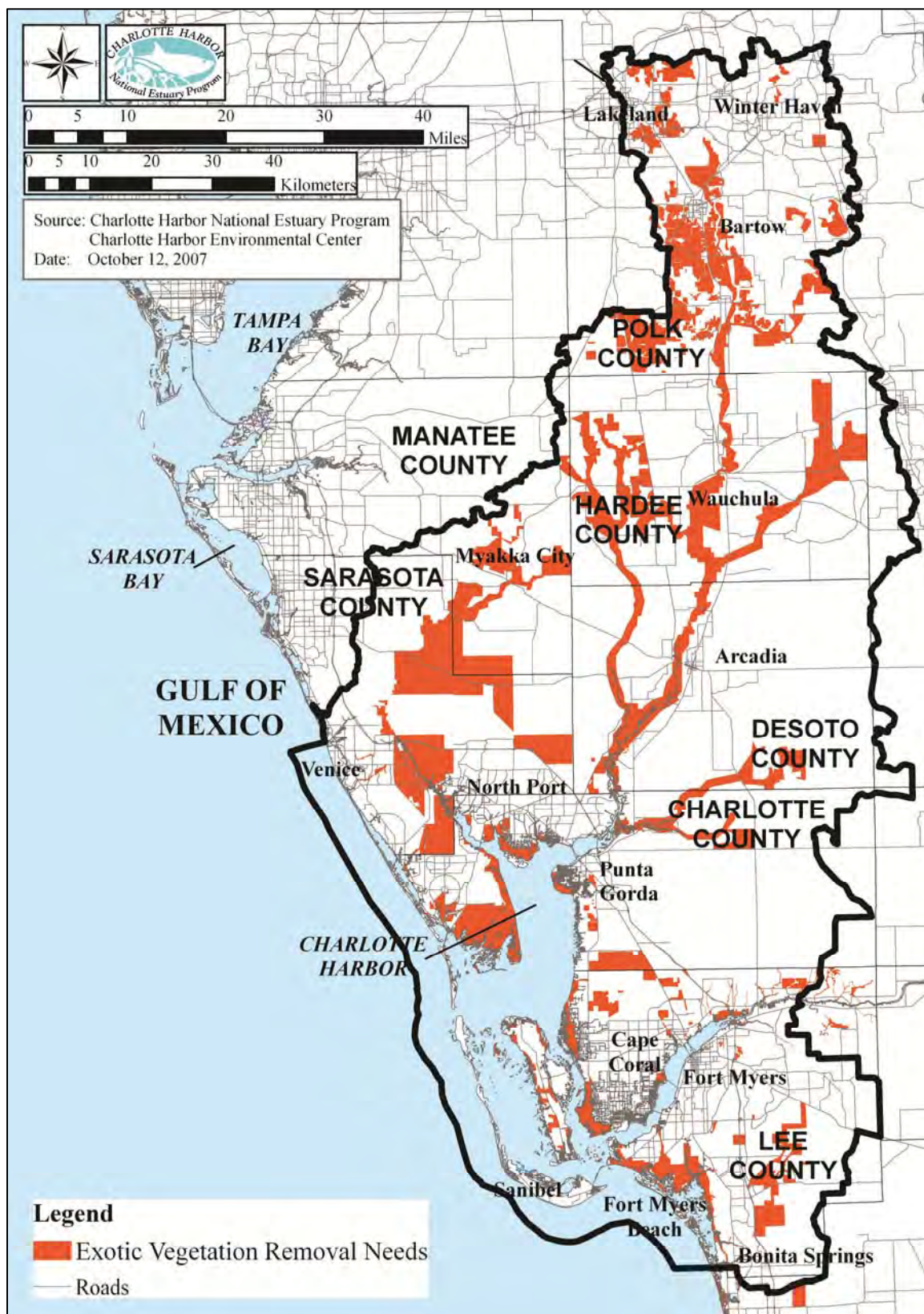
All information was compiled within a single GIS shapefile for use by partners for different efforts. The most notable include the 2008 update of the CHNEP *Comprehensive Conservation and Management Plan* (CCMP), the Southwest Florida Feasibility Study (SWFFS) authorized under the Water Resources Development Act (WRDA) 2000 and the *Lee County Master Mitigation Plan*. The Southwest Florida Regional Restoration Coordination Team (authorized by the Working Group of Everglades Restoration) used the inventory to identify four priorities for each of four watershed basins. From that effort, the acquisition of Babcock Ranch was identified by consent of all partners as a high priority. The property was acquired in 2006 as the single largest acquisition in Florida's history. Original mapping and information from the 2006 Restoration Needs Inventory survives in:

- The *Southwest Florida Comprehensive Watershed Plan*, approved by the Corps of Engineers and submitted to Congress;
- The Southwest Florida Regional Ecosystem Restoration Plan, approved by CHNEP, Sarasota Bay Estuary Program and Tampa Bay Estuary Program, submitted to the Gulf Coast Ecosystem Restoration Council;
- The 2013 update of the CHNEP *Comprehensive Conservation and Management Plan* (CCMP);
- Lee County's Conservation 2020 site selection criteria
- Wildland Conservation's Peace River Basin Initiative and
- Draft update of the Charlotte Harbor Surface Water Improvement and Management (SWIM) Plan.

Because of the partnerships used to develop the restoration inventory, with no single entity or person "in charge" of its development, ownership of the product was diffuse. The digital file allowed CHNEP to publish a land acquisition vision for its study area as well as spatially identify exotic vegetation removal needs, shown as follows in Map 1 and 2.



Map 1: Land Acquisition Alternatives published in 2008 and 2013 CCMP

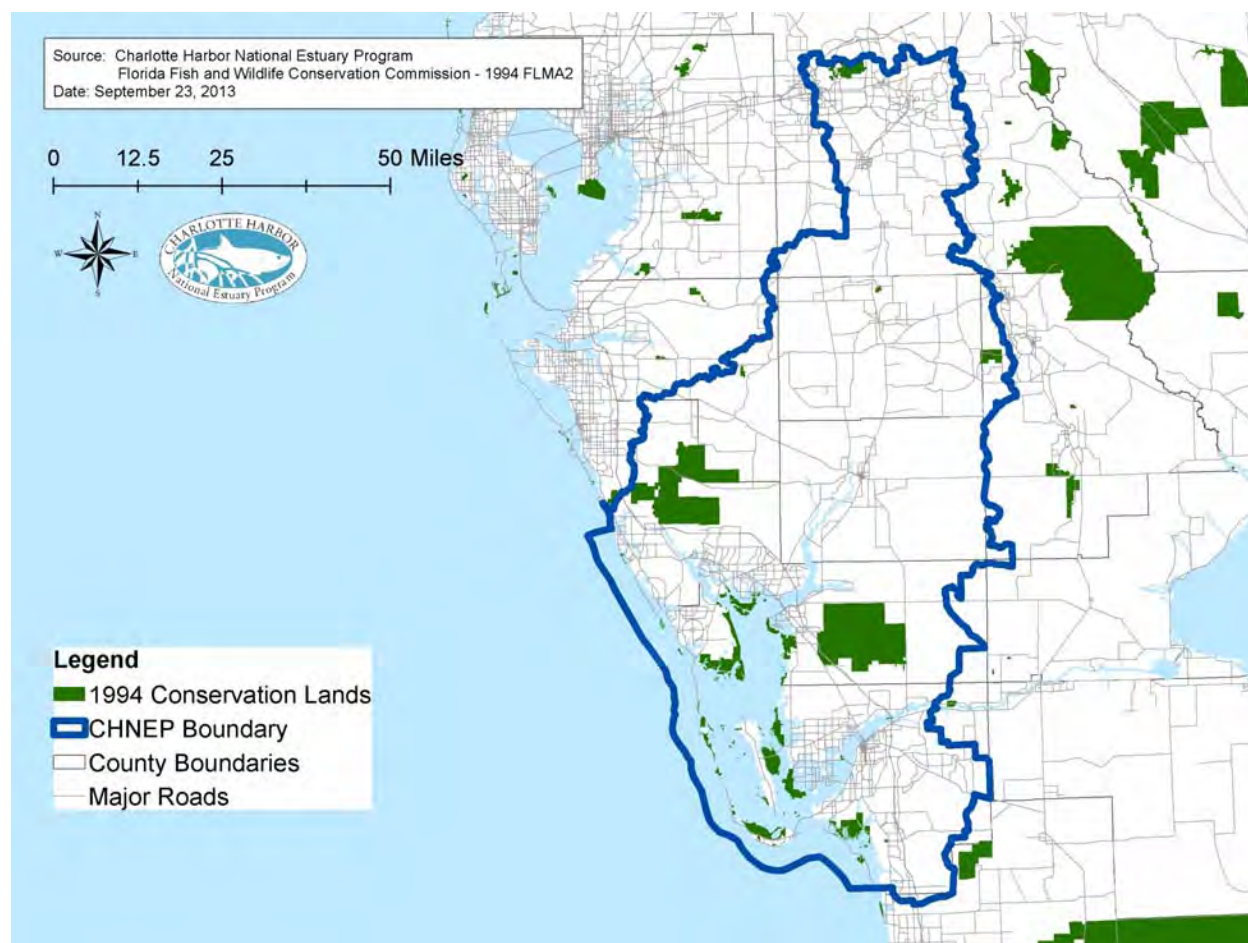


Map 2: Exotic Vegetation Removal Needs published in 2008 and 2013 CCMP

History of Land Acquisition in the Study Area

Prior to 1963, Florida had no established land conservation acquisition program (Farr and Brock 2006.) For the CHNEP area, the history of conservation land acquisition and protection began in 1931, when Highlands Hammock State Park opened, four years before the Florida state park system was created. A.B. Edwards, the first mayor of the City of Sarasota, persuaded the Internal Improvement Fund to purchase 17,000 acres from the A.C. Honore Palmer Estate, creating the beginning of the Myakka River State Park in 1934. In 1941, the Commission of Game and Freshwater Fish purchased the first 19,200 acres for the Cecil M. Webb Wildlife Management Area. In 1965, the J. N. “Ding” Darling National Wildlife Refuge was established.

In 1972, the Environmentally Endangered Lands (EEL) program was established by Florida. EEL was restructured in 1979 as the Conservation and Recreation Lands (CARL) program, using reoccurring funding rather than bond funding. During this period, much of the buffer preserve was acquired for the Aquatic Preserves designated between 1966 (Estero Bay) and 1986 (Lemon Bay.)

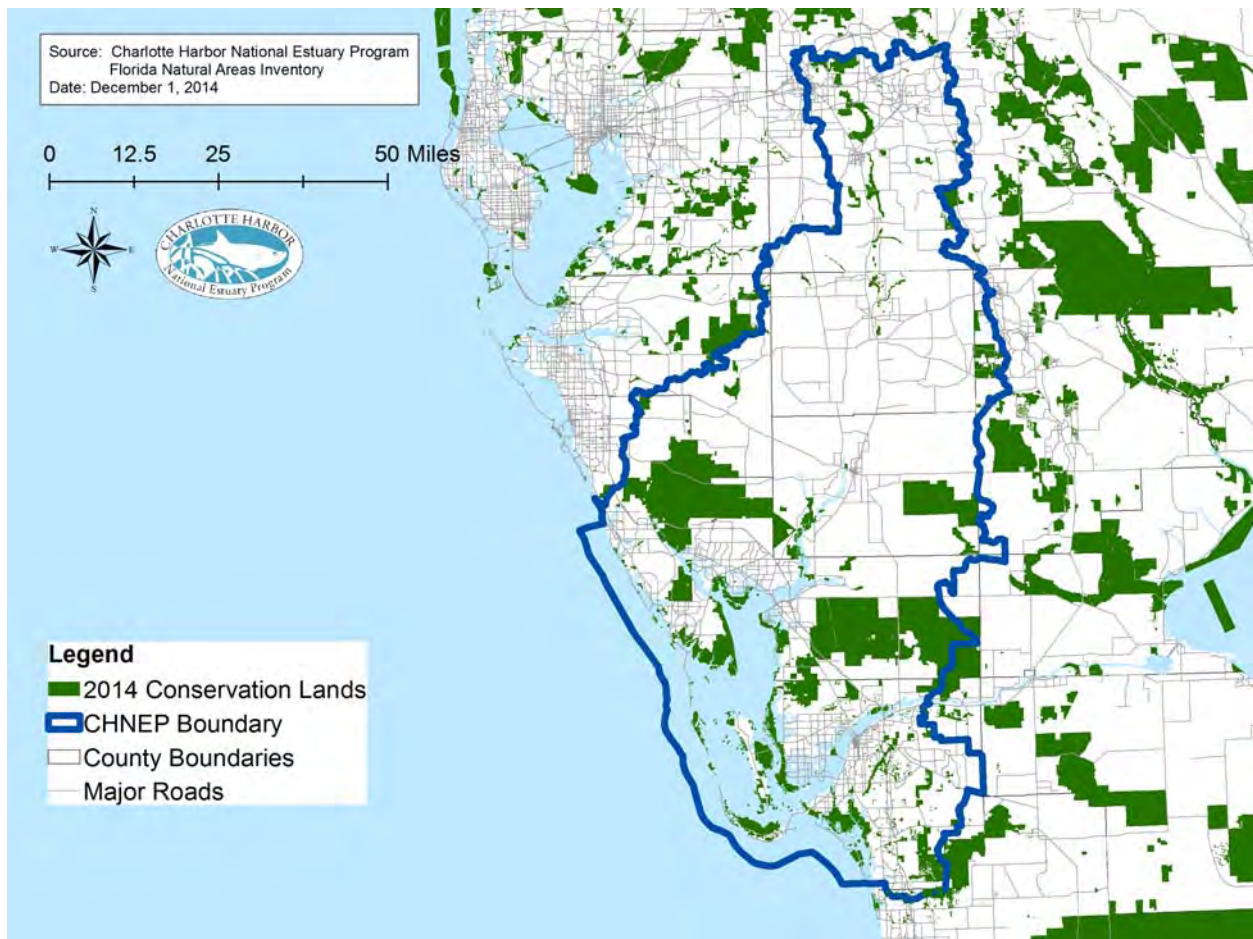


Map 3: 1994 Conservation Lands

Beginning in 1981, the State of Florida began to acquire lands through the Save our Rivers program. The program largely bypassed the CHNEP study area, with the exception of Six Mile Cypress phase I and Upper Myakka River Watershed partial, through 1991.

Preservation 2000 was adopted in 1990 and extended through year 2000. It increased funding to the CARL and SOR programs. It also helped local governments through Florida Communities Trust and provided funding to acquire inholdings and expand State Parks, Wildlife Management Areas and State Forests. With the additional incentive of Florida Communities Trust, Polk County, Sarasota County, Lee County and Charlotte County all adopted conservation lands acquisition programs. These revenues help to provide the match required by Florida Communities Trust. Preservation 2000 was succeeded in 2001 by Florida Forever which persists to this day. With the Legislature reducing funding for Florida Forever, a Constitutional Amendment was sought, entitled Florida's Water and Land Legacy. Over 75% voted in favor of the amendment on November 4, 2014.

In the twenty years between 1994 and 2014, significant conservation land acquisition has been accomplished in the CHNEP area. In 1994, an estimated 187,365 acres was acquired for conservation purposes. By 2014, an estimated 507,966 acres is conserved through fee-simple title or less-than-fee conservation easement.

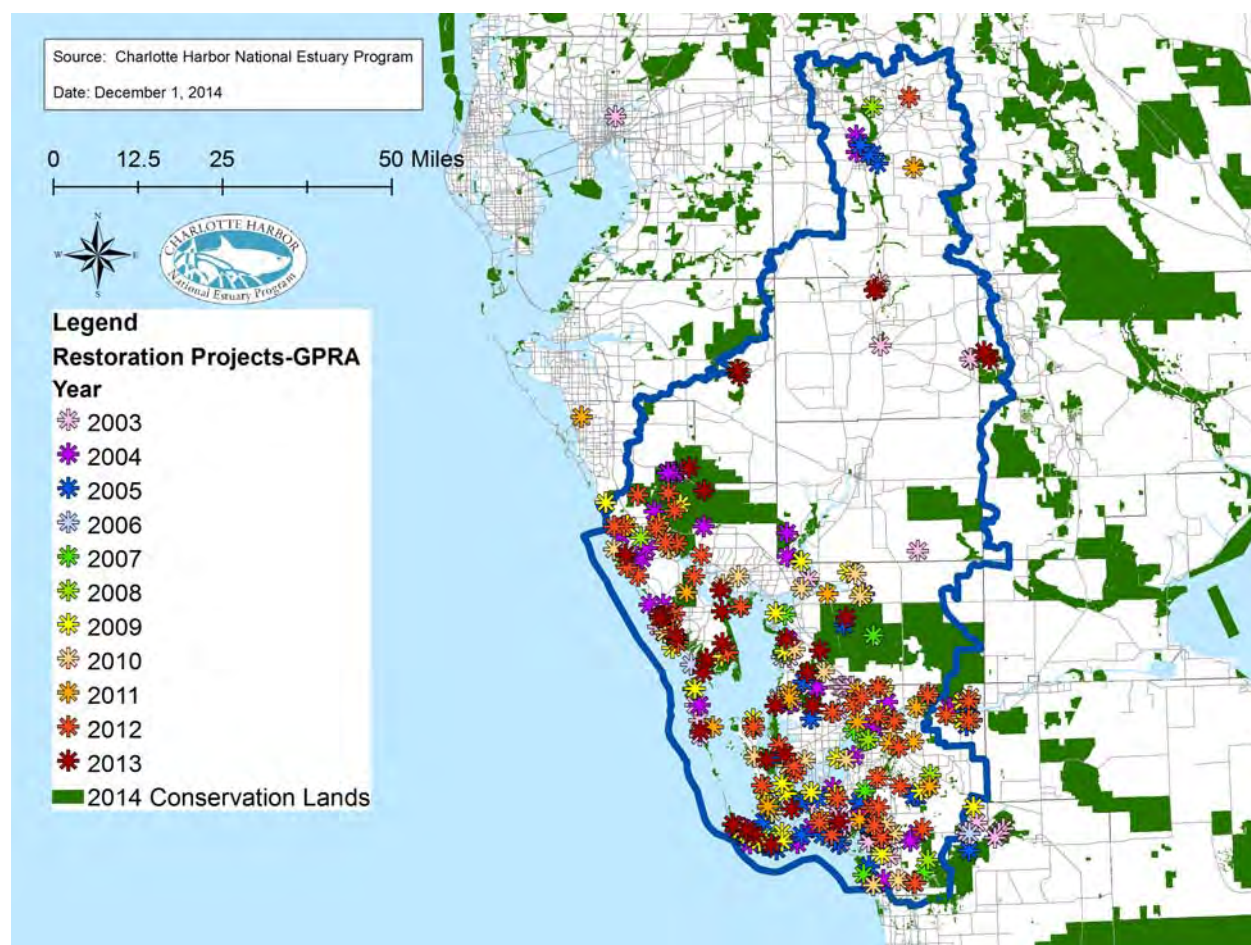


Map 4: 2014 Conservation Lands

History of Restoration in the Study Area

In 2003, under the Government Performance and Review Act (GPRA), CHNEP started tracking restoration projects conducted by partners. Map 5 illustrates a 10-year history of restoration projects (not including land acquisition) in the CHNEP study area. Additional information can be obtained at: <http://gispub2.epa.gov/NEPmap/> and http://www.epa.gov/owow_keep/estuaries/pivot/mapping/gulf_sum.htm.

In general, more restoration projects are implemented in the coastal counties of Sarasota, Charlotte and Lee. Earlier years are shown in cooler colors and more recent years are shown in hotter colors. Much restoration has been accomplished by State land management agencies, water management districts, county government, city government and non-profit land trusts.



Map 5: 2003-2013 Restoration Projects

Habitat Assessment

Pre-Development and Current Mapping Methods

Within the CHNEP study area, the most consistent vegetation mapping has been accomplished using the Florida the *Florida Land Use, Cover and Forms Classification System* (FLUCCS) (Department of Transportation 1999). FLUCCS is different from the National Wetland Inventory in that specific community type can be identified but position in the landscape (lacustrine, riverine, etc.) is not typically identified. FLUCCS is flexible and can accommodate specific needs (such as exotic plant evasion or finely defined vegetative communities). As a result of the flexibility, variation in mapping can be different organizations occurs, whether performed for pre-development vegetation maps or modern land use maps.

Pre-Development Vegetation Maps

In 2010, CHNEP compiled pre-development vegetation maps from a number of sources. In the study area, pre-development mapping began with the South Florida Water Management District for the Southwest Florida Feasibility Study in 2004. The information was developed from interpretation of soils information, team members' experience and historic references (Zahina et al, 2007).

In 2005, CHNEP refined the pre-development vegetation map for Sarasota County using a draft prepared by the Southwest Florida Water Management District (SWFWMD). It was also based on soils. CHNEP used the SWFWMD methodology with subject area experts and historic information including the General Land Office Survey (GLOS) map from the late 1800s. Of the various mapping efforts, this map needs to be revised.

Currently the method that is believed to be the most reliable was developed in 2004. Biological Research Associates/CognoCartaGIS developed the methodology to use GLOS notes to reconstruct pre-settlement landscapes. It is considered more reliable because there were observations of vegetative communities documented in the 1840s. Between 2004 and 2010, SWFWMD contracted with HRD, Inc. to replicate the methodology in phases throughout the Peace River basin.

In 2007, CHNEP contracted with HRD, Inc. to replicate the GLOS note method in eastern Manatee County and Charlotte County to complete a CHNEP-wide Pre-Development Vegetation Map.

Because all efforts utilized FLUCCS, comparisons to modern mapping using aerial photograph interpretation and ground-truthing can be made. However, the treatment of the FLUCCS FLUCCS codes throughout the various Pre-Development Vegetation mapping efforts as well as by the two water management districts.

Most Recent Vegetation Maps

Both water management districts routinely map land use, using FLUCCS. The latest approved map within SFWMD is 2008, so that is the year of analysis used here.

As mentioned, there can be different interpretations of vegetative communities. Land use maps are used by the water management districts for a number of purposes, including hydrologic modeling and assessing management strategies. The differences in FLUCCS code utilization can be identified in the photo interpretation guides and FLUCCS guides adopted by the water management districts (SWFWMD 2010 and SFWMD 2004).

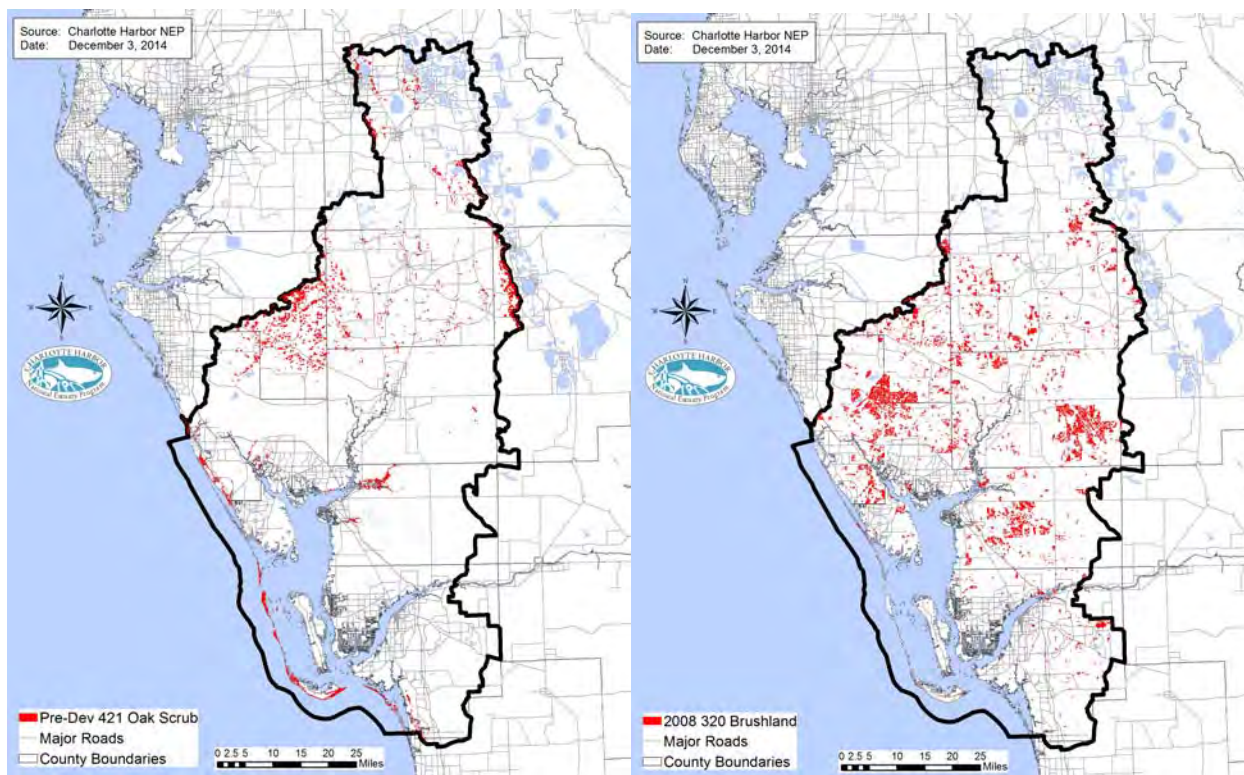
For example, SFWMD includes 322 Coastal Scrub and 421 Xeric Scrub, while SWFWMD does not include these classifications. In known areas of scrub, SWFWMD routinely uses 320 Shrub and Brushland which is inclusive of palmetto prairie. Within the CHNEP study area of SFWMD, many known areas of oak scrub also carry the 320 Shrub and Brushland classification. Within SFWMD Classification 322 Coastal Scrub is applied to beach vegetation as described in the FLUCCS Manual.

Habitats Missed in Mapping Methods

In estimating habitat changes from pre-development (or the 1950s) to current day there are several habitat types that are particularly difficult. CHNEP found this in the development of its Oyster Habitat Restoration Plan (CHNEP 2012). The difficulty persists on land for additional habitat types.

As stated above, 426 Tropical Hardwood Hammocks was not mapped in any of the pre-development vegetation or current land use mapping efforts. Declared mapping units are between 1 and 5 acres. The size of these hammocks may have been a reason to exclude them in the mapping methodology from the outset (SFWMD 2004 and SWFWMD 2010). Tropical hardwood hammocks in southwest Florida are typically found on shell middens and coastal shell mounds. Examples can be found on Shell Key in Estero Bay, at the Randell Research Center on Pine Island and at Indian Mound Park on Lemon Bay.

In addition, 421 Xeric Oak Scrub is not included in current land use maps. Significant areas of Xeric Oak Scrub were mapped in all Pre-Development Vegetation Map efforts. 421 Xeric Oak Scrub is excluded in the mapping methodology for SWFWMD (2010) but not SFWMD (2004). However, no 421 Xeric Oak Scrub was mapped in the CHNEP portion of SFWMD in its 2008 mapping effort. Remnants of pre-development 421 Xeric Oak Scrub, mapped in 2008 as 320 Shrub and Brushland, can be found at Chapel Ridge (West Bay development) in Lee County, Prairie Creek Preserve in Charlotte County, Duette Park in Manatee County and at Highlands Hammock State Park in Highlands County. Both water management districts have used 320 Shrub and Brushland to classify this habitat. 321 Palmetto Prairie and 322 Coastal Scrub (Strand) is also captured in the 320 Shrub and Brushland classification. For these reasons, changes in the Xeric Oak Scrub habitat are difficult to assess. For further assistance in the comparison with pre-development 421 Xeric Oak Scrub and 2008 320 Shrub and Brushland, please reference Map 6 below.



Map 6: Pre-Development Oak Scrub and 2008 Brushland Comparison

412 Longleaf Pine-Xeric Oak was included in the SWFWMD Pre-Development Vegetation Map. Charlotte County is the southernmost extent of modern longleaf pine.

413 Sand Pine Scrub was also included in the SWFWMD Pre-Development Vegetation Map. Though this habitat occurs in modern times, it is not mapped. In addition, sand pines are often removed from xeric scrub to encourage scrub jays.

Quantitative assessment of changes in 412 Longleaf Pine-Xeric Oak , 413 Sand Pine Scrub , 421 Xeric Oak Scrub, 426 Tropical Hardwood Hammock, 611 Bay Swamps and (from previous assessments) 654 Oyster Bars are not reliable with existing information. However, these are special and rare habitats which deserve attention and protection.

Additional attention and protection may include a special CHNEP designation. The designation would allow partners to select habitats that are rare and exemplary. Opportunities to develop modern maps, target acquisition areas and consider restoration efforts for these rare habitats could be outcomes of the special designation.

Recommendation:

Create a special CHNEP designation for “Rare and Exemplary Habitats.”

The list above may not constitute the list of this designation. For example, 413 Sand Pine Scrub may constitute a degraded 421 Xeric Oak Scrub that can no longer support scrub jays.

Habitat Changes

As discussed in the previous section, variation in the use of FLUCCS can confound some of the analysis. However, with some care, reasonable conclusions can be made. Appendix A documents how FLUCCS from the various pre-development vegetation mapping efforts and from the two 2008 land use vegetation mapping efforts are integrated for this assessment.

Maps 7 and 8 illustrate the patterns across the CHNEP study area. Map 7 illustrates inconsistencies in mapping from one effort to the next. Of particular note are expanses of habitats that stop at county lines, especially for Sarasota County. In addition, salt marsh and freshwater wetland delineation around Cape Coral did not have the benefit of historical aerials and GLOS notes.

Reconstructing the Sarasota County and SFWMD Pre-Development Vegetation Maps, using GLOS note procedures would provide better consistency throughout the CHNEP study area.

Recommendation:

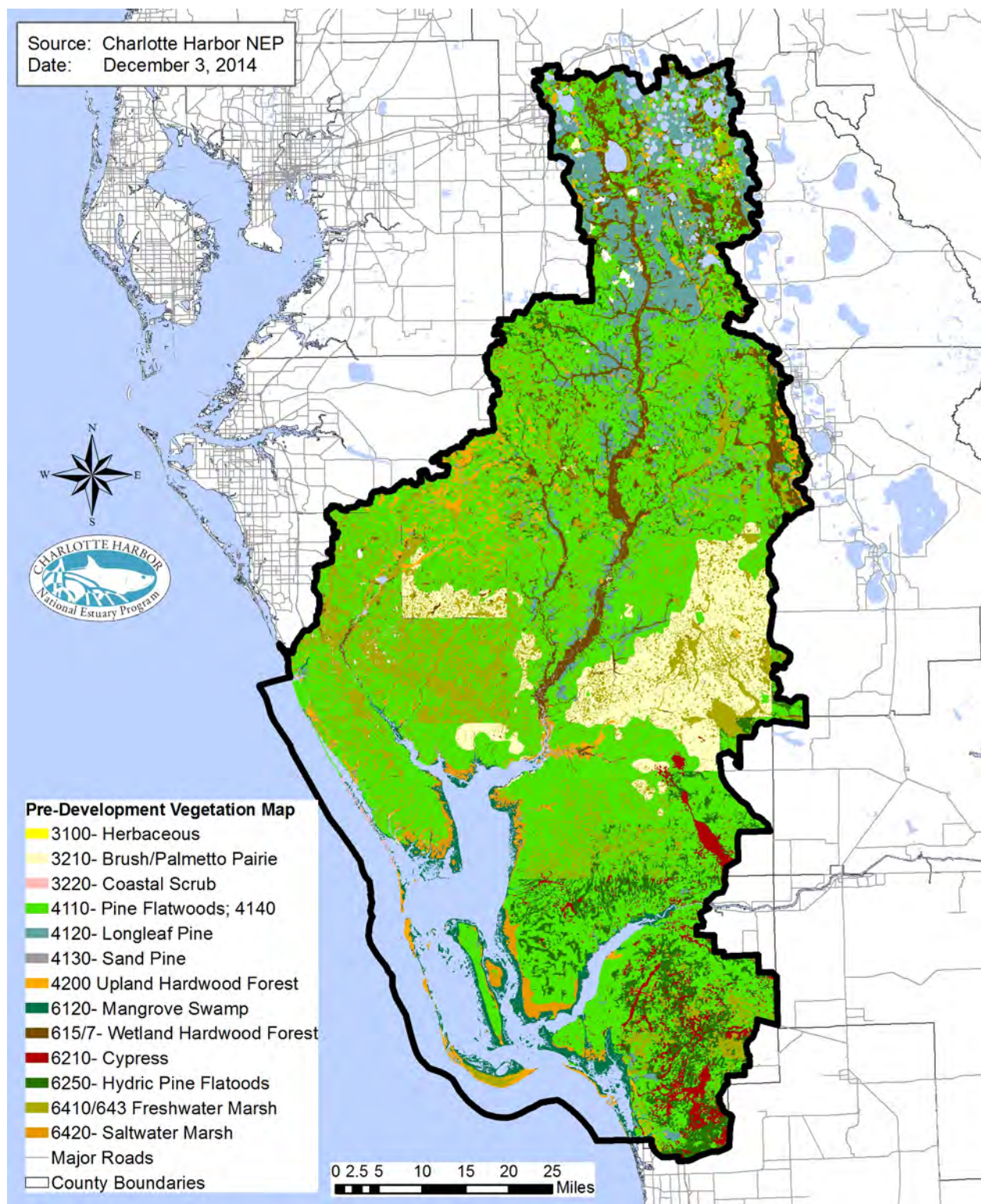
Reconstruct the Sarasota and SFWMD Pre-Development Vegetation Map using the GLOS note procedures employed in the Peace River basin, Manatee and Charlotte Counties. Evaluate GLOS notes for 426 Tropical Hardwood Hammocks.

Tables 1 and 2 document Pre-Development Vegetation Map (PDVM) and 2008 acreages for different habitats by watershed basin. SFWMD basins are included in Table 1. SFWMD basins, CHNEP-wide totals and percent change are included in Table 2.

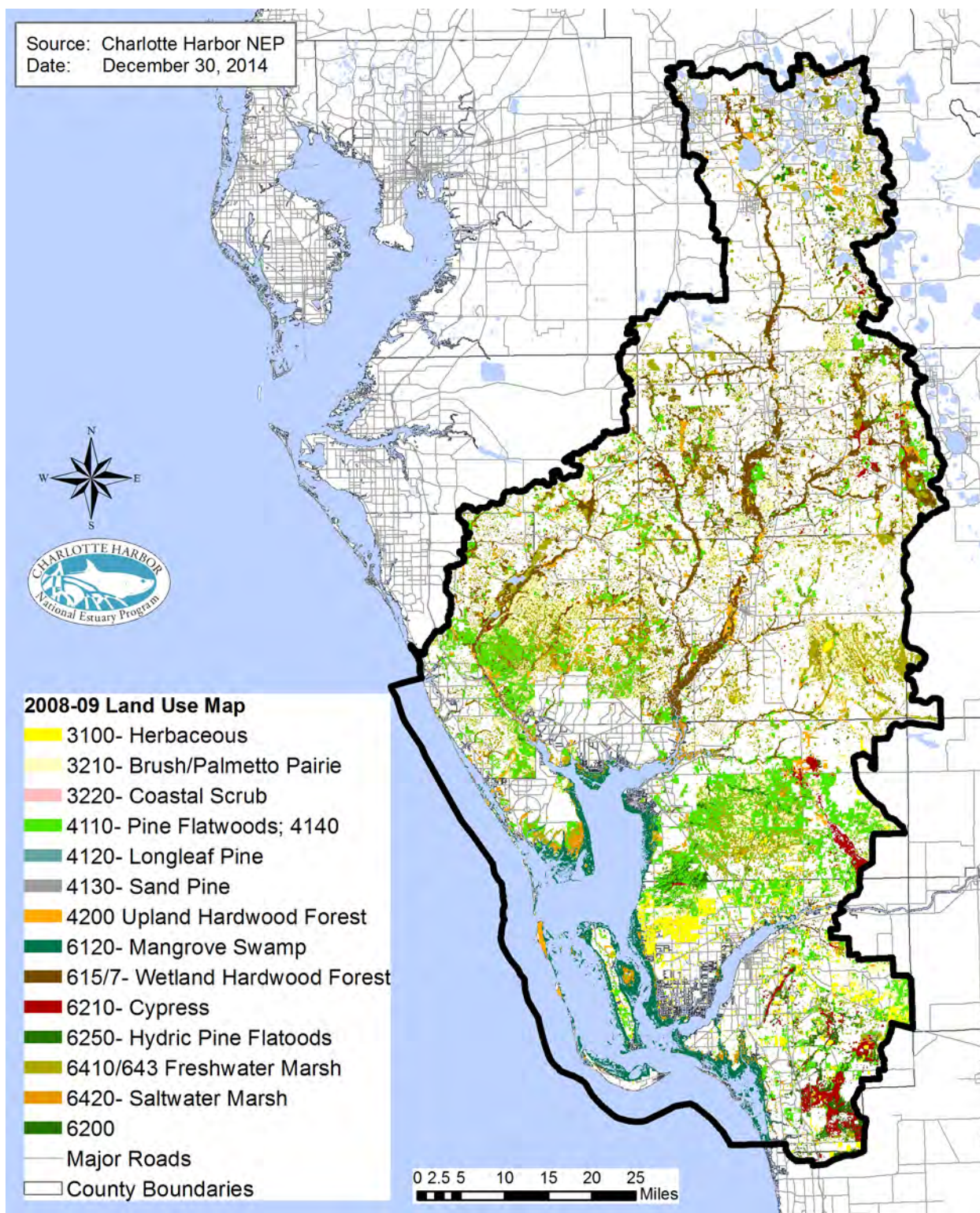
Open water was not included in the tables. However, a growth of open water has occurred as a result of constructing stormwater ponds for urban development and mining purposes.

Recommendation:

Create a map which identifies current extent of 412 Longleaf Pine-Xeric Oak, 413 Sand Pine Scrub, 421 Xeric Oak Scrub, 426 Tropical Hardwood Hammock and 611 Bay Swamps.



Map 7: Pre-Development Vegetation



Map 8: 2008-09 Land Use Vegetation

Regardless of the limitations of the methodologies and the maps, overall acreage changes make sense.

| Description | Total Of Acres | | Change |
|------------------------------|----------------|-----------|----------|
| | PDVM | 2008-09 | |
| Longleaf Pine - Xeric Oak | 187,763 | 5 | -100.00% |
| Sand Pine Scrub | 6,568 | 33 | -99.50% |
| Coastal/Xeric Oak Scrub | 9,758 | 441 | -95.48% |
| Pine Flatwoods | 1,250,148 | 198,626 | -84.11% |
| Hydric Pine Flatwoods | 155,653 | 36,755 | -76.39% |
| Saltwater Marshes | 34,343 | 15,541 | -54.75% |
| Cypress | 53,648 | 35,972 | -32.95% |
| Freshwater Marsh/Wet Prairie | 389,687 | 296,312 | -23.96% |
| Brushland/Palmetto Prairies | 197,750 | 165,784 | -16.16% |
| Upland Hardwood +mix Forest | 79,927 | 70,341 | -11.99% |
| Mangrove Swamps | 66,153 | 61,922 | -6.40% |
| Hardwood Wetland Forest | 163,579 | 178,210 | 8.94% |
| Herbaceous (Dry Prairie) | 1,119 | 48,385 | 4224.24% |
| | 2,596,096 | 1,108,329 | -57.31% |

Table 1: Habitat Changes between 1840s and 2008-09

Various scrubs (longleaf pine, xeric oak and coastal) had had the greatest decreases, ranging from 95% to 100%. Though mapping problems have been noted, significant losses are real. Coastal scrubs represented high and well drain land. The oak scrub ridge which extended along the coast in southwest Florida was the site for the construction of Tamiami Trail, the first road connecting Tampa and Miami. Early access and high, dry land was a focus for urbanization. Remaining scrubs are location in patches along creeks and on the Lake Wales ridge. Special attention should be paid to the identification, protection and management of remaining xeric oak scrub, coastal scrub and scrubby flatwoods.

Pine Flatwoods were once the most extensive habitat in the CHNEP study area at two and one half times other habitats. Over 84% of mesic and xeric pine flatwoods were lost through urbanization, clearing for lumber and pasture, and fire suppression. Another 76% of hydric pine flatwoods have been lost through these pressures as well as drainage. Acquisition of the Charlotte Harbor Flatwoods in the 1990s was in part to protect what was once a large component of the habitat mosaic of southwest Florida.

Saltwater Marshes have declined by 55%. Beever et al. (2012) documented eleven salt marsh habitat types in the CHNEP study area. These habitat types include:

1. Smooth cordgrass (6421)
2. Black needle rush (6442)

3. Leatherfern (no FLUCCS identified)
4. Saltmarsh Bulrush (no FLUCCS identified)
5. Shrub mangrove (6122- black mangrove)
6. Algal (650- non vegetated including tidal flats, shorelines, intermittent ponds)
7. Saltern (listed as FLUCCS 720 but code not used by SWFWMD or SFWMD for salttern)
8. Marsh meadow succulents (643- wet prairie)
9. Marsh meadow mixed (643- wet prairie)
10. Marsh meadow grasses (643- wet prairie)
11. Shrub buttonwood (6124-buttonwood)

Neither pre-development vegetation mapping nor 2008-09 FLUCCS mapping identifies salt marsh by type. SWFWMD has mapped salt marsh meadows as 643, along with freshwater wet prairies. To account for this, 3174.00 acres were backed out of Charlotte Harbor Proper freshwater wetland/wet prairie 2008-09 totals and added to salt marsh. Neither water management district maps salterns as 720 nor algal as 650. Furthermore, the detail mapping accomplished by Beever et al. (2012) includes a finer mapping unit resulting in different totals. For the purposes of this evaluation, water management district FLUCCS will be used. The finer mapping by Beever et al. (2012) will be used to consider restoration alternatives and place the 2008-09 mapping into context.

Beever et al. (2012) acknowledges the loss of salt marsh habitat in the CHNEP study area through urbanization and mosquito control ditches. Beever et al. (2012) identifies additional losses related to sea level rise and barriers to landward movement.

Cypress losses occurred through lumbering and sustained a 33% loss.

Freshwater Marshes and Wet Prairies decreased by 24%. It is estimated that 3174 acres of salt marsh was coded as wet prairie in the Charlotte Harbor basin. The adjustment was made to reflect freshwater marshes.

Brushland/Palmetto Prairies decreased by 16%.

Upland Hardwood and Mixed Forest decreased by 12%.

Mangrove Swamps had among the lowers percentage decrease (6%) of natural habitats, in large part because of protections that have been enacted in the 1970s and 1980s.

Wetland Hardwood Forest increased by 9%. This may be due to fire suppression in hydric pine flatwoods coupled with protection of these systems through wetland regulations. Because wetland hardwood forest are difficult to replace they are typically avoided through the wetland permitting processes.

Herbaceous (Dry Prairie) increased substantially through creation of unimproved pasture. Though dry prairie is found in the pre-development landscape, increase of this bahitat type has occurred through anthropogenic means.

Restoring the Balance

Tampa Bay Estuary Program Approach

In 1996, the Tampa Bay Estuary Program (TBEP) published *Setting Priorities for Tampa Bay Habitat Protection and Restoration: Restoring the Balance* (Lewis Environmental Services Inc. and Coastal Environmental Inc.). Its premise was to “restore the predevelopment balance of “habitat ratios,” or the relative proportion of different types of emergent tidal wetland that were present during a benchmark time period representation of a less impacted condition.” The paradigm was termed “Restoring the Balance.” This initial document evaluated the relationship between mangroves, tidal marsh (oligohaline and mesohaline salt marshes) and salt barrens (polyhaline salt marshes including mixed meadow succulent). The CHNEP/SWFRPC Salt Marsh study (Beever et al. 2012) terms the tidal marsh as low marsh and the salt barren complex as high marsh. In 1900 the relationship was believed to be 49:48:3; in 1950 67:28:5 and by 1990 73:22:5, respectively. The work resulted in:

- An updated inventory of tidal streams
- Restoration targets set for tidal marshes
- Incorporating upland protection and restoration in Fish and Wildlife Service regional wildlife habitat plans
- Development and implementation of long term management plans
- Restoration targets for tidal marshes and slatterns indexed against mangroves based on 1950s ratios.

In 2010, TBEP updated its restoration targets for seagrass, mangrove, salt marsh and salt barren, including preservation target, restoration target and current deficit (PBS&J 2010). Though inadequate data were available, additional considerations were given to tidal flats oyster bar, hardbottom, tidal tributaries coastal uplands and flatwoods marshes.

After extensive analysis of wetland changes in the Tampa Bay Area (Rains et al. 2012), Sheda Ecological Associates (2014) established forested and non-forested wetland restoration by watershed basin. Landscape position lacustrine, riverine and other further divided the wetland types. For the riverine category, this included wetlands that were within 100 meters of flowline features from the National Hydrography Database. Lacustrine wetlands were classified as those that fell within or touched the boundaries of a lake/pond (>20 acres in size) or fell within 30 meters of a previously classified lacustrine wetlands (Rains et al., 2012). If a wetland fit neither of these conditions, it was classified as “other.” While more detailed FLUCCS data was available for the 2007 mapping product, this same level of wetland classification was not available for the 1950s products; therefore, all wetland classifications were aggregated to the six categories, based on structure and hydrologic association.

Throughout the various TBEP target-setting efforts, they have used their “Restoring the Balance” algorithm established in 1996. TBEP opted to index restoration targets against mangroves and utilize 1950 saltwater wetland habitat percentages to derive restoration targets.

| | | CURRENT | | TARGET | | CHANGE IN |
|---------------|-------------|---------|----|--------|----|-----------|
| | | ac | % | ac | % | ACREAGE |
| | | | | | | ac |
| Option A: | Mangroves | 13,764 | 73 | 16,538 | 49 | +2,774 |
| c. 1900 area | Tidal Marsh | 4,117 | 22 | 16,200 | 48 | +12,083 |
| & proportions | Salt Barren | 877 | 5 | 1,012 | 3 | +135 |
| | Total | 18,758 | | 33,750 | | +14,992 |
| Option B: | Mangroves | 13,764 | 73 | 15,894 | 67 | +2,130 |
| c. 1950 area | Tidal Marsh | 4,117 | 22 | 6,621 | 28 | +2,504 |
| & proportions | Salt Barren | 877 | 5 | 1,371 | 5 | +494 |
| | Total | 18,758 | | 23,886 | | +5,128 |
| Option D: | Mangroves | 13,764 | 73 | 14,324 | 49 | +560 |
| c. 1900 | Tidal Marsh | 4,117 | 22 | 14,032 | 48 | +9,915 |
| proportions | Salt Barren | 877 | 5 | 877 | 3 | 0 |
| | Total | 18,758 | | 29,233 | | +10,475 |
| Option E: | Mangroves | 13,764 | 73 | 13,764 | 67 | 0 |
| c. 1950 | Tidal Marsh | 4,117 | 22 | 5,753 | 28 | +1,636 |
| proportions | Salt Barren | 877 | 5 | 1,027 | 5 | +150 |
| | Total | 18,758 | | 20,544 | | +1,786 |

Table 2: Tampa Bay Estuary Program 1996 Restoring the Balance Analysis

CHNEP endorses the “Restoring the Balance” approach. Beginning with its 2008 CCMP update and continuing with its 2013 CCMP update, priority action FW-F calls to “Restore and protect a balance of native plant and animal communities.” This action couples with quantifiable objective FW2: “By 2025, achieve a 100 percent increase in conservation, preservation and stewardship lands within the boundaries of the CHNEP study area. The increase will be based upon 1998 acreage.”

Based on Table 2, the Tampa Bay area had a 17% loss of mangrove acreage from 1900 and a 13% loss of mangrove acreage from 1950. Additionally, Tampa Bay experienced a 71% loss of salt marsh from 1900 and a 38% loss of salt marsh from 1950. The Charlotte Harbor area experienced a 6% loss of mangrove acreage and a 57% loss of salt marsh from the 1840s, a substantially significant portion of the loss was after 1950 (based on aerial photography of the time.). Harris et al. (1983) provides analogous information for Charlotte Harbor used by TBEP used for the 1950s values. The study area did not include Lemon Bay, Dona & Roberts Bays, and southern Estero Bay. Harris et al. (1983) report a 10% mangrove expansion and a 61% salt marsh reduction from 1945 to 1982. These types of changes seem likely. The acreages for both mangroves and saltwater marsh appear lower than current acreages, even considering the reduced area (See Appendix B). Therefore, CHNEP opts not to use the 1945 values to set targets but rather pre-development estimates.

| | Current | | | | PDVM or 1900 | | | | 1944 or 1950 | | | |
|------------|------------------|-----|-----------|-----|------------------|-----|-----------|-----|------------------|-----|-----------|-----|
| | Charlotte Harbor | | Tampa Bay | | Charlotte Harbor | | Tampa Bay | | Charlotte Harbor | | Tampa Bay | |
| | Acres | % | Acres | % | Acres | % | Acres | % | Acres | % | Acres | % |
| Mangrove | 61,922 | 81 | 13,764 | 73 | 66,153 | 66 | 16,538 | 49 | 51,524 | 88 | 15,894 | 67 |
| Low Marsh | 5,605 | 7 | 4,117 | 22 | 12,956 | 13 | 16,200 | 48 | 2,736 | 5 | 6,621 | 28 |
| High Marsh | 9,252 | 12 | 877 | 5 | 21,387 | 21 | 1,012 | 3 | 4,515 | 8 | 1,371 | 5 |
| Total | 76,779 | 100 | 18,758 | 100 | 100,496 | 100 | 33,750 | 100 | 58,775 | 100 | 23,886 | 100 |

Table 3: Comparison of Tampa Bay and Charlotte Harbor Salt Marsh and Mangrove

Although Charlotte Harbor's pre-development vegetation maps do not distinguish between high marshes and low marsh, a review of 1950s aerials suggests a fairly equal percentage loss between that time and the current period. For the purposes of this test, that assumption was used to distribute the 34,343 acres of pre-development salt marsh in relation to the 2011 salt marsh study conducted by the SWFRPC (Beever et al. 2012).

The differences in the Tampa Bay and Charlotte Harbor saltwater wetland landscapes are related to the more subtropical climate in Charlotte Harbor which produces more mangroves in areas that might otherwise be low marsh. In addition, the flatter topography around Charlotte Harbor promotes greater extent of high marsh (including saltern, algal, and marsh meadow with succulents and grasses.)

| | Targets | | | | Indexed Restoration Needs | |
|------------|--------------------------------|-----|--------------------------|-----|---------------------------|-------|
| | Charlotte Harbor Based on PDVM | | Tampa Bay Based on 1950s | | Charlotte | Tampa |
| | Acres | % | Acres | % | Acres | Acres |
| Mangrove | 61,922 | 66 | 13,764 | 67 | 0 | 0 |
| Low Marsh | 12,128 | 13 | 5,753 | 28 | 6,523 | 1,636 |
| High Marsh | 20,019 | 21 | 1,027 | 5 | 10,767 | 150 |
| Total | 94,069 | 100 | 20,544 | 100 | 17,289 | 1,786 |

Table 4: Comparison of Tampa Bay and Charlotte Harbor Target Algorithm

Because Charlotte Harbor had less percentage loss of mangrove and because of the limited saltwater wetland loss in Charlotte Harbor by 1950s, applying the TBEP algorithm to set restoration targets would overwhelm CHNEP's ability to achieve these targets.

However, targeting protection and restoration of high marsh, low marsh and mangrove on a 2:1:0 ratio would assist in achieving FW-F: Restore and protect a balance of native plant and animal communities.

Overall Target Ratios

The CHNEP CCMP includes quantifiable objective FW-1: Protect, enhance and restore native habitats where physically feasible and within natural variability, including

- Submerged Aquatic Vegetation (SAV),
- Submerged and intertidal unvegetated bottoms,
- Oyster,
- Mangrove,
- Salt marsh,
- Freshwater wetland,
- Native upland, and
- The water column.

Of the habitats specifically called out under FW-1, mangroves, salt marsh, freshwater wetlands, uplands and the water column are captured in the FLUCCS mapping described earlier. Seagrass, unvegetated bottoms and oysters are mapped through benthic mapping efforts and have received separate attention.

| Description | 2008-09 | | PDVM | | Changes | |
|--------------------|-----------|------|-----------|------|------------|------|
| | acres | % | acres | % | acres | % |
| Mangrove Swamps | 61,922 | 4% | 66,153 | 2% | -4,231 | -6% |
| Saltwater Marshes | 15,541 | 1% | 34,343 | 1% | -18,801 | -55% |
| Freshwater Wetland | 547,250 | 36% | 762,567 | 25% | -215,317 | -28% |
| Native Upland | 435,231 | 28% | 1,731,914 | 57% | -1,296,683 | -75% |
| Water | 473,665 | 31% | 426,238 | 14% | 47,428 | 11% |
| | 1,533,609 | 100% | 3,021,214 | 100% | -1,487,605 | -49% |

Table 5: Pre-Development to 2009 Habitat Changes by CCMP Type

All habitat types between pre-development and 2009 decreased with the exception of open water. Harris et al. (1983) found that water increased by 8% from 1944 to 1982. Therefore the 11% increase between 1940s and 2009 is not unreasonable. Such features are created with mining, borrow pits and stormwater excavations.

Priority action FW-F: Restore and protect a balance of native plant and animal communities includes both protection and restoration aspects. Securing lands under some form of conservation management continues to be a priority of CHNEP. Since CCMP targets may be obtained through primarily protection supplemented by the more expensive restoration, the base of habitats in management were compared with pre-development habitat ratios.

Florida Natural Areas inventory (FNAI) September 2014 Florida Managed Lands files were supplemented with SFWMD conservation easements and the Peaceful Horse Ranch. A total of 473,231 acres are in management (including open water.) An additional 193,895 acres of open water is managed as Aquatic Preserves and National Wildlife Refuge.

The most recent 2008-2009 land use maps were used to determine FLUCCS codes within the current managed areas. Over 22,000 acres were acquired in the CHNEP study area between 2008 and 2014. Therefore some of the FLUCCS codes, especially within upland categories may be outdated.

| | PDVM | | Managed in 2014, 2009 FLUCCS | | Balance | Target |
|----------------------------------|-----------|------|------------------------------|------|---------|--------|
| | acres | % | acres | % | | |
| Mangrove Swamps | 66,153 | 2% | 45,941 | 7% | -5% | 0 |
| Saltwater Marshes | 34,343 | 1% | 8,678 | 1% | 0% | 434 |
| Freshwater Wetland | 766,130 | 25% | 150,526 | 24% | 1% | 9,831 |
| Upland, inc ag, urban, reclaimed | 1,731,914 | 57% | 256,462 | 38% | 19% | 48,009 |
| Water | 426,238 | 14% | 205,387 | 31% | -17% | 0 |
| | 3,020,100 | 100% | 675,783 | 100% | 0 | 58,248 |

Table 6: Short Term Restoration Targets by CCMP Habitat Type

The CHNEP “Restore the Balance” algorithm compares percentage distribution of habitat types in the predevelopment landscape (PDVM) and of lands currently under management (Florida Managed Areas or FLMA). Managed lands include fee simple ownership by a conservation organization or conservation easement. Short term targets were developed by multiplying the difference by the habitat type currently under management to define a target appropriate for the CCMP time frames. For a vision target, the same differences in percentages were multiplied by the PDVM. A target was defined for only those habitat types which had a drop in the percentage within the balance. Based on the evaluation of mangrove and salt marsh, salt marsh acreage was multiplied by the percentage difference of mangrove (which had a +5% in the distribution) by the salt marsh acreage. The same operation was accomplished for freshwater wetland so relative proportions could be established.

| | PDVM | | Managed in 2014, 2009 FLUCCS | | Balance | Target |
|----------------------------------|-----------|------|------------------------------|------|---------|---------|
| | acres | % | acres | % | | |
| Mangrove Swamps | 66,153 | 2% | 45,941 | 6% | -4% | 0 |
| Saltwater Marshes | 34,343 | 1% | 9,086 | 1% | 0% | 1,397 |
| Freshwater Wetland | 766,130 | 25% | 169,146 | 23% | 2% | 48,910 |
| Upland, inc ag, urban, reclaimed | 1,731,914 | 57% | 304,868 | 42% | 15% | 274,435 |
| Water | 426,238 | 14% | 205,387 | 28% | -14% | 0 |
| | 3,020,100 | 100% | 734,031 | 100% | 0 | 316,458 |

Table 7: Restoration Vision Targets by CCMP Habitat Type, after Objective is achieved

For the short term objective, the overall vision Upland to freshwater wetland to salt marsh restoration needs is roughly 100:10:1. The overall short term restoration target is 52,863 acres.

The restoration targets may be accomplished by protection (acquisition) or by restoring a habitat but ensuring no loss of target habitats such as mangrove. Upland needs of 48,406 will be evaluated by upland habitat type within watershed basins. A similar approach will be taken for freshwater wetland restoration needs of 4,023 acres and saltwater marsh needs of 434 acres.

The CCMP calls for 487,847 acres under conservation management (fee simple or conservation easement) by 2025, with the remaining goal of 14,181 acres. It is anticipated that the work through the Restoration Plan Update will inform the 2018 CCMP update.

The application of the vision algorithm results in a 5% or less variance between the pre-development balance and the in all major habitat categories.

CHNEP “Restoring the Balance” CCMP Objective Algorithm:

Pre-Development Habitat Percent minus Managed Habitat Percent multiplied by Managed Habitat Acres equals Target Acres.
(Negative numbers result in no targeted change.)

$$\% \text{ PDVM} - \% \text{ FLMA} \times \text{FLMA Acres} = \text{Objective Target}$$

CHNEP “Restoring the Balance” Vision Algorithm:

Pre-Development Habitat Percent minus Managed Habitat Percent multiplied by Pre-Development Habitat Acres equals Target Acres.
(Negative numbers result in no targeted change.)

$$\% \text{ PDVM} - \% \text{ FLMA} \times \text{PDVM Acres} = \text{Vision Target}$$

Restoration Targets

Seagrass

Seagrass extent is routinely mapped by water management districts using aerial photographs. The FLUCCS codes for seagrass is a special designation of 911 and is further designated as 9111 Sparse to Medium, 9112 Dense and 9113 Patchy. Dense and patchy are the classifications typically mapped. Though dense and patchy classifications are available for analysis, CHNEP combines the classifications in order to evaluate total extents. Restoration targets are based on total extents.

Seagrass restoration targets were set by the CHNEP on August 17, 2009. The adjusted baseline includes the 1950s seagrass acreages minus unrecoverable areas (such as filled areas and the Intra-Coastal Waterway). Table 2 documents protection and restoration targets. It was found that some estuarine segments contain similar or more seagrass extent than could be documented for the 1950s era. Therefore restoration targets apply only to Dona and Roberts Bay, Lower Lemon Bay, Tidal Peace River, West Wall, East Wall, Matlacha Pass and Estero Bay (Janicki et al. 2009).

| Harbor Segment | Baseline, adjusted (B) | Mean Annual Extent all years (A) | Standard Deviation | Protection Target | Restoration Target | Total Target | Target Range |
|-----------------------|------------------------|----------------------------------|--------------------|-------------------|--------------------|--------------|---------------|
| Dona and Roberts Bay* | 112 | 91 | 20 | 91 | 21 | 112 | 70-124 |
| Upper Lemon Bay | 880 | 1,009 | 87 | 1,009 | | 1,009 | 949-1,175 |
| Lower Lemon Bay | 2,882 | 2,502 | 70 | 2,502 | 380 | 2,882 | 2,396-2,597 |
| Tidal Myakka River* | 344 | 456 | 87 | 456 | | 456 | 331-539 |
| Tidal Peace River* | 975 | 384 | 103 | 384 | 591 | 975 | 295-573 |
| West Wall | 2,106 | 1,907 | 161 | 1,907 | 199 | 2,106 | 1,676-2,121 |
| East Wall | 3,898 | 3,465 | 126 | 3,465 | 433 | 3,898 | 3,275-3,591 |
| Cape Haze | 5,670 | 6,998 | 271 | 6,998 | | 6,998 | 6,709-7,464 |
| Bokeelia | 2,964 | 3,342 | 148 | 3,342 | | 3,342 | 3,101-3,520 |
| Pine Island Sound | 23,757 | 26,837 | 1,413 | 26,837 | | 26,837 | 25,941-29,204 |
| Matlacha Pass | 9,315 | 7,582 | 710 | 7,582 | 1,733 | 9,315 | 6,055-7,619 |
| San Carlos Bay | 3,118 | 4,372 | 775 | 4,372 | | 4,372 | 3,709-5,376 |
| Tidal Caloosahatchee* | 93 | 87 | 41 | 87 | 6 | 93 | 2-103 |
| Estero Bay | 3,662 | 3,071 | 530 | 3,071 | 591 | 3,662 | 2,393-3,409 |
| TOTAL | 59,776 | 62,103 | N/A | 62,103 | 3,954 | 66,057 | N/A |

* These riverine segments may have underreported seagrass acreages, due to water color impacts, as described in section 3.5 and are therefore presented for completeness only. The numbers in these segments should not be used for reporting of seagrass loss or gain over time.

Table 7: Adopted Seagrass Restoration Targets

The targets were set using 1988 through 2006 seagrass extent data, coupled with the historic benthic habitat map based on 1948-1952 aerial photograph available in the National Archives. In 2008, the entire study area was mapped. In 2010 and 2012, only SWFWMD completed maps. Table 8 provides an update of the information with most recent information.

| Harbor Segment | Seagrass Targets | Seagrass Restoration Target, as of 2006 | 2008 Seagrass Acreage | Seagrass Restoration Target, as of 2008 | 2012 Seagrass, partial | Seagrass Restoration Target, pre-2014 latest information |
|-----------------------|------------------|---|-----------------------|---|------------------------|--|
| Dona and Roberts Bay* | 112 | 21 | 96 | 16 | 181 | |
| Upper Lemon Bay | 1,009 | | 1,148 | | 1,276 | |
| Lower Lemon Bay | 2,882 | 380 | 2,607 | 275 | 2,785 | 97 |
| Tidal Myakka River* | 456 | | 311 | 145 | 287 | 169 |
| Tidal Peace River* | 975 | 591 | 247 | 728 | 389 | 586 |
| West Wall | 2,106 | 199 | 2,049 | 57 | 2,150 | |
| East Wall | 3,898 | 433 | 2,691 | 1,207 | 3,499 | 399 |
| Cape Haze | 6,998 | | 6,672 | 326 | 6,849 | 149 |
| Bokeelia | 3,342 | | 3,689 | | 3,941 | |
| Pine Island Sound | 26,837 | | 27,507 | | N/A | |
| Matlacha Pass | 9,315 | 1,733 | 7,995 | 1,320 | N/A | 1,320 |
| San Carlos Bay | 4,372 | | 6,469 | | N/A | |
| Tidal Caloosahatchee* | 93 | 6 | 300 | | N/A | |
| Estero Bay | 3,662 | 591 | 3,590 | 72 | N/A | 72 |
| TOTAL | 66,057 | 3,954 | 65,371 | 4,146 | N/A | 2,792 |

Table 8: Seagrass Restoration Target Update

Both water managements are completing seagrass mapping for 2014 aerials that were acquired early in the year. When the mapping is complete, an assessment can take place to determine if segments change their status between restoration and protection. Furthermore, the CHNEP Science Forum is considering methods to set Submerged Aquatic Vegetation (SAV) targets for the Tidal Caloosahatchee which include seagrass and freshwater SAV such as tape grass.

Harris et al. (1983) reports 82,959 acres of seagrass (minus Dona and Roberts Bays and southern Estero Bay) compared to the unadjusted 1950s total of 61,513. The significant difference justifies the effort to digitize the Harris et al. (1983) maps currently in possession by the Florida Fish and Wildlife Conservation Commission (FWC.)

Recommendation:

Work with FWC to digitize and geo-rectify the Harris et al. (1983) maps in order to compare the 82,959 acres of 1945 seagrass and 806 acres of 1945 oyster reef to resolve differences in order to refine adopted targets.

Oyster Reefs

The FLUCCS code for oyster bars is 654. The history of oyster mapping efforts and difficulties of mapping oysters in the CHNEP are well document in the Oyster Habitat Restoration Plan, adopted in 2012. The plan addressed the problem of setting targets without reliable information by adopting short-term (10-year) goals. These included:

- Map oyster habitats by type within the CHNEP estuaries by 2020.
- Design, implement and monitor the success of pilot oyster restoration projects in a variety of habitats in 50% of the CHNEP estuary strata by 2020.
- Increase public awareness of the ecosystem value of native oyster habitats by including community stewardship components in each oyster restoration project.
- Assist partners in seeking state, federal and organizational funding opportunities to support oyster habitat restoration projects.

| Strata | Total Area | 1950s Oyster Map | 1999 Oyster Map | RSM Results 100% suitable | RSM Results 80% suitable | Accommodation Area (<6' deep & >3 psu isohaline) | | | Sawfish Critical Habitat <3'deep | Aquatic Preserve |
|----------------------------------|------------|------------------|-----------------|---------------------------|--------------------------|--|-------|-------|----------------------------------|------------------|
| | | | | | | All | 1% | 5% | | |
| | (acres) | | | | | | | | | |
| Dona & Roberts Bays | 807 | 0 | 14 | 108 | 40 | 726 | 7 | 36 | 0 | 0 |
| Upper Lemon Bay | 2,499 | 13 | 4 | 163 | 220 | 2,335 | 23 | 117 | 0 | 2,287 |
| Lower Lemon Bay | 5,351 | 56 | 21 | 514 | 582 | 4,750 | 47 | 237 | 50 | 5,309 |
| Gasparilla Sound-Cape Haze | 12,875 | 352 | 35 | 1,321 | 1,526 | 11,502 | 115 | 575 | 8,017 | 13,746 |
| Tidal Myakka River | 7,136 | 2 | 13 | 2,231 | 1,778 | 5,246 | 52 | 262 | 1,809 | 4,802 |
| Tidal Peace River | 13,402 | 16 | 7 | 3,834 | 3,371 | 8,728 | 87 | 436 | 5,103 | 7,813 |
| Charlotte Harbor West Wall | 17,029 | 0 | 2 | 455 | 1,332 | 4,057 | 41 | 203 | 2,394 | 16,960 |
| Charlotte Harbor East Wall | 22,390 | 6 | 10 | 1,482 | 1,363 | 6,629 | 66 | 331 | 5,250 | 22,798 |
| Charlotte Harbor Proper | 33,502 | 139 | 9 | 360 | 1,027 | 5,567 | 56 | 278 | 2,984 | 33,520 |
| Pine Island Sound | 50,177 | 441 | 41 | 2,481 | 4,171 | 37,914 | 379 | 1,896 | 24,716 | 52,294 |
| Matlacha Pass | 13,962 | 494 | 15 | 2,271 | 1,265 | 12,479 | 125 | 624 | 9,615 | 13,210 |
| San Carlos Bay | 16,892 | 726 | 23 | 1,563 | 2,663 | 11,272 | 113 | 564 | 6,457 | 4,739 |
| Tidal Caloosahatchee River | 17,278 | 186 | 2 | 728 | 977 | 2,328 | 23 | 116 | 6,575 | 2 |
| Estero Bay | 11,154 | 247 | 42 | 4,660 | 114 | 10,803 | 108 | 540 | 9,632 | 13,755 |
| Out of Oyster Accommodation Area | --- | --- | --- | --- | --- | --- | --- | --- | 5,614 | --- |
| Total | 224,453 | 2,679 | 238 | 22,172 | 20,428 | 124,336 | 1,243 | 6,217 | 88,217 | 191,235 |

Table 9: CHNEP Oyster Habitat Restoration Goal Considerations

1950s-era oyster maps were prepared with the same effort as the 1950's era seagrass maps. A total of 2,679 acres of oyster reef were estimated in this effort. However, Harris et al. (1983) estimates 806 acres in 1945 and 488 acres in 1982 (see Appendix B). By 1999, the estimate was at 238. The only effort with ground-truthing (not completed well after the fact) was the 1982 effort.

Long term goals cited total oyster restoration at between 1,243-6,217 acres, based on percentage of oyster model areas. Strata goal ranges may be seen on Table 3. The range was suggested in large part because of the uncertainty of mapping.

Harris et al. (1983) estimates 0 acres for Fort Myers SW quad (Tidal Caloosahatchee). The C-43 Project Implementation Report estimated an increase of 3.02 acres within the first year of implementation and 30 acres in the first 10 to 15 years based on improved freshwater flow.

Though the Oyster Habitat Restoration Plan recommended a target range of 1% to 5% of the accommodation are. A discrete target number subject to evaluation and revision would provide more consistency with other valued habitat types. Though 1% is the minimum, it would still be a challenging target to achieve. The 1% totals 1,242 acres and would increase the last known (1999) acreage of oyster reef by more than 5 times. The result would be 50% more than the 1945 Harris et al. (1983) estimate and nearly half of CHNEP's 1950s estimate.

| Harbor Segment | 1999 Oyster Estimates | Oyster Targets | Oyster Restoration Needs, 1999 | Oyster Restoration Vision | Oyster Restoration Vision Needs, 1999 |
|-----------------------|--------------------------------------|---------------------------|---|--|--|
| Dona and Roberts Bay* | 14 | 7 | | 36 | 22 |
| Upper Lemon Bay | 4 | 23 | 19 | 117 | 113 |
| Lower Lemon Bay | 21 | 47 | 26 | 237 | 216 |
| Tidal Myakka River* | 35 | 115 | 80 | 575 | 540 |
| Tidal Peace River* | 13 | 52 | 39 | 262 | 249 |
| West Wall | 7 | 87 | 80 | 436 | 429 |
| East Wall | 2 | 41 | 39 | 203 | 201 |
| Cape Haze | 10 | 66 | 56 | 331 | 321 |
| Bokeelia | 9 | 56 | 47 | 278 | 269 |
| Pine Island Sound | 41 | 379 | 338 | 1,896 | 1,855 |
| Matlacha Pass | 15 | 125 | 110 | 624 | 609 |
| San Carlos Bay | 23 | 113 | 90 | 564 | 541 |
| Tidal Caloosahatchee* | 2 | 23 | 21 | 116 | 114 |
| Estero Bay | 42 | 108 | 66 | 540 | 498 |
| TOTAL | 238 | 1,242 | 1,011 | 6,217 | 5,979 |

Table 10: CHNEP Oyster Habitat Restoration Targets

Mangroves

A sufficient balance of mangroves are managed to comply with FW-F: “Restore and protect a balance of native plant and animal communities.” CHNEP is embarking on mapping and quantifying mangrove communities by time through 2015 and 2016. Through general observation mangrove communities such as black mangrove basin forests, riverine forest and overwash forests have seen recent degradation and may require restoration to maintain a balance of mangrove communities. Pending the results of this work, no restoration targets for mangroves have been set.

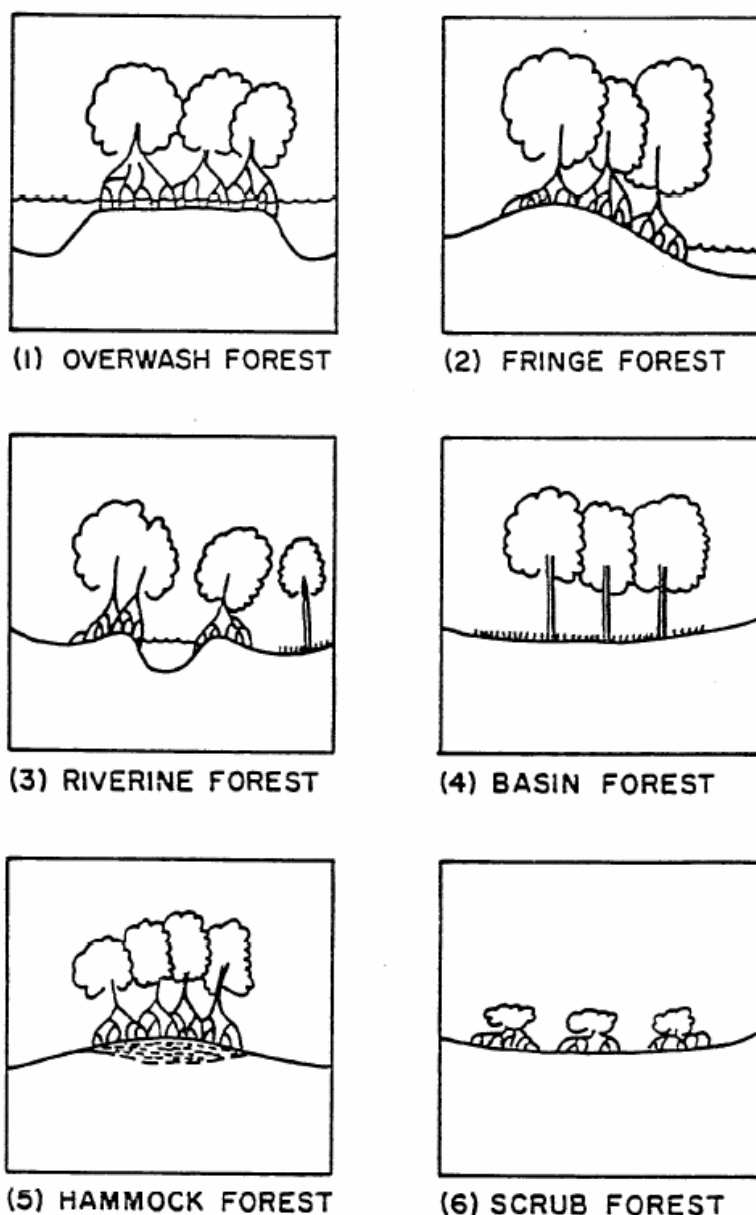


Figure 1: The Six Mangrove Communities (redrawn by Harris et al. 1983 from Odum et al. 1982, after Lugo and Snedaker 1974.)

Saltwater Marsh

Saltwater Marsh, or salt marsh, has a FLUCCS code of 642. The previous chapter recommended a target for saltwater marsh restoration of 434 acres in the short term and a vision of 1,419 additional managed salt marsh acres.

| | PDVM Salt Marsh | | Managed Salt Marsh | | Balance | Target |
|--------------------|-----------------|------|--------------------|------|---------|--------|
| | acres | % | acres | % | | |
| Peace River | 5,540 | 16% | 710 | 6% | 10% | 218 |
| Myakka River | 935 | 3% | 511 | 5% | -2% | 0 |
| Dona & Roberts Bay | 6 | 0% | 1 | 0% | 0% | 0 |
| Lemon Bay | 1,023 | 3% | 111 | 1% | 2% | 44 |
| Charlotte Harbor | 11,548 | 34% | 3,808 | 34% | -1% | 0 |
| Pine Island Sound | 10,577 | 31% | 3,109 | 28% | 3% | 60 |
| Caloosahatchee | 2,659 | 8% | 305 | 3% | 5% | 112 |
| Estero Bay | 2,055 | 6% | 2,508 | 23% | -17% | 0 |
| | 34,343 | 100% | 11,063 | 100% | 0 | 434 |

| | PDVM Salt Marsh | | Managed Salt Marsh | | Balance | Target |
|--------------------|-----------------|------|--------------------|------|---------|--------|
| | acres | % | acres | % | | |
| Peace River | 5,540 | 16% | 928 | 8% | 8% | 671 |
| Myakka River | 935 | 3% | 511 | 4% | -2% | 0 |
| Dona & Roberts Bay | 6 | 0% | 1 | 0% | 0% | 1 |
| Lemon Bay | 1,023 | 3% | 155 | 1% | 2% | 136 |
| Charlotte Harbor | 11,548 | 34% | 3,808 | 33% | 1% | 42 |
| Pine Island Sound | 10,577 | 31% | 3,169 | 28% | 3% | 269 |
| Caloosahatchee | 2,659 | 8% | 417 | 4% | 4% | 343 |
| Estero Bay | 2,055 | 6% | 2,508 | 22% | -16% | 0 |
| | 34,343 | 100% | 11,497 | 100% | 0 | 1,419 |

Table 11: Short Term Salt Marsh Restoration and Salt Marsh Restoration Vision

| Code | 10 | 21 | 22 | 23 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | |
|--------------------|------------------|-------------------|--------------|---------|----------------|-------|----------|------------|-------|---------|------------------|--------|
| Basin | Smooth Cordgrass | Black Needle Rush | Leather Fern | Bulrush | Shrub Mangrove | Algal | Salt ern | Succulents | Mixed | Grasses | Shrub Buttonwood | Total |
| Peace River | 0 | 1,446 | 238 | 337 | 51 | 8 | 1 | 33 | 181 | 5 | | 2,302 |
| Myakka River | | 1,029 | 52 | | 5 | 17 | 8 | 7 | 129 | 44 | | 1,292 |
| Dona & Roberts Bay | | 30 | 5 | | | | 0 | | | | | 36 |
| Lemon Bay | 0 | 11 | 38 | | 1 | 12 | 11 | 22 | 25 | 42 | | 162 |
| Charlotte Harbor | | 190 | 8 | | 315 | 248 | 328 | 307 | 2,623 | 203 | | 4,223 |
| Pine Island Sound | 3 | 22 | 8 | | 540 | 421 | 100 | 404 | 1,980 | 201 | 1 | 3,679 |
| Caloosahatchee | | 139 | 77 | | 46 | 7 | 11 | 4 | 66 | 40 | | 389 |
| Estero Bay | | 726 | 39 | | 247 | 533 | 198 | 167 | 780 | 66 | 19 | 2,774 |
| Total | 3 | 3,594 | 465 | 337 | 1,206 | 1,245 | 658 | 944 | 5,784 | 601 | 20 | 14,857 |

Table 12: Salt Marsh Distribution by Type by Watershed Basin

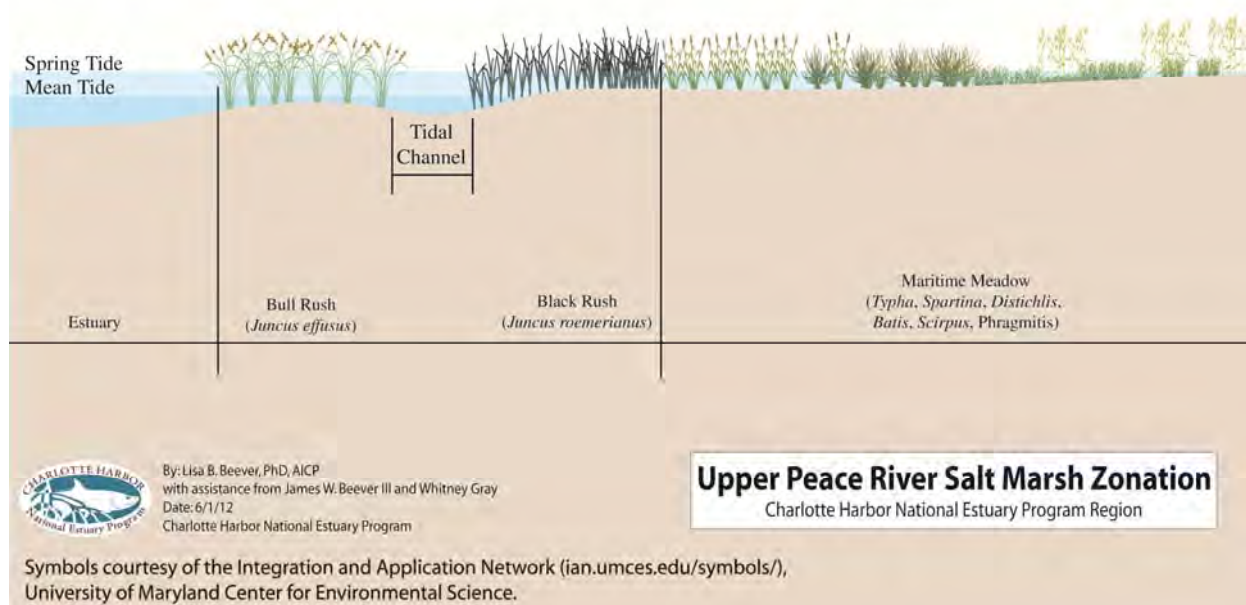


Figure 2: Upper Peace River Salt Marsh Zonation

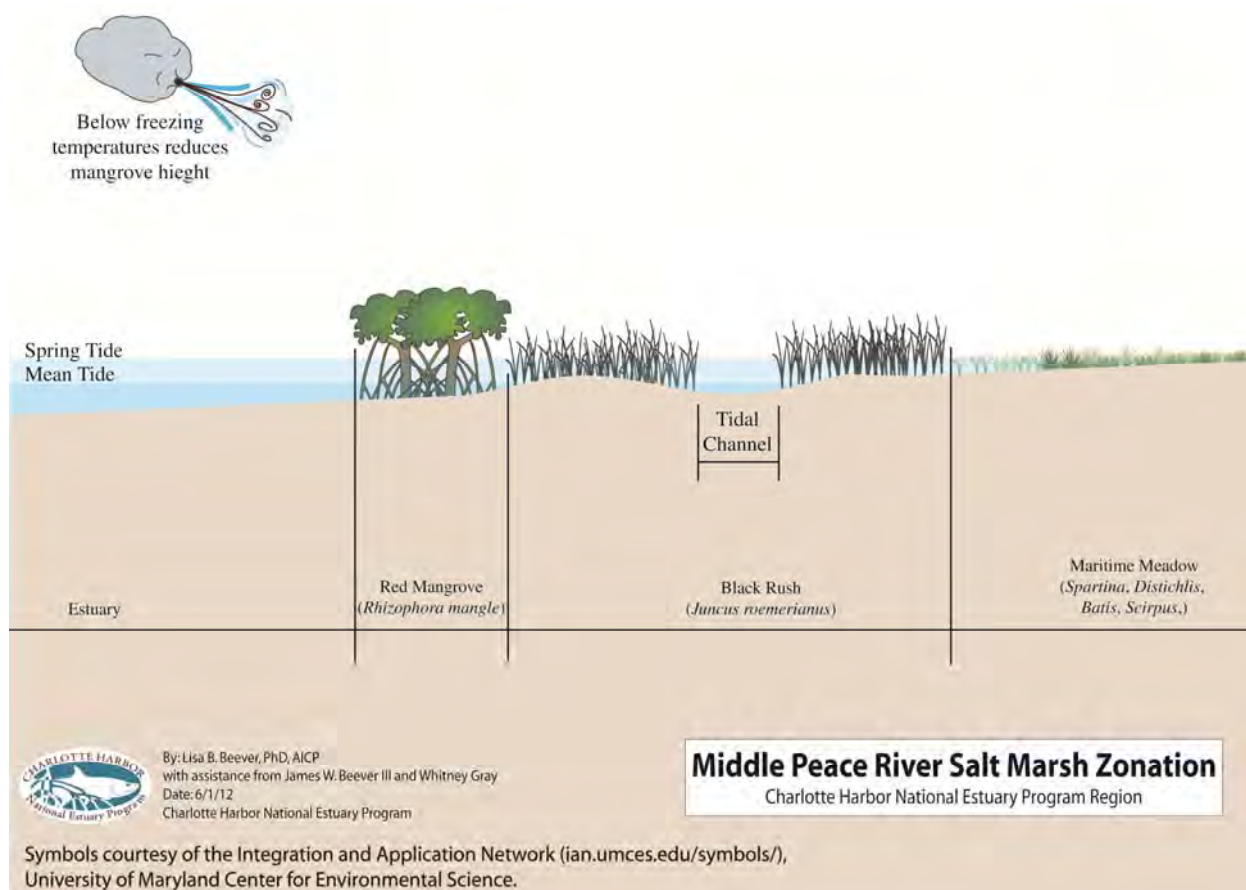


Figure 3: Middle Peace River Salt Marsh Zonation

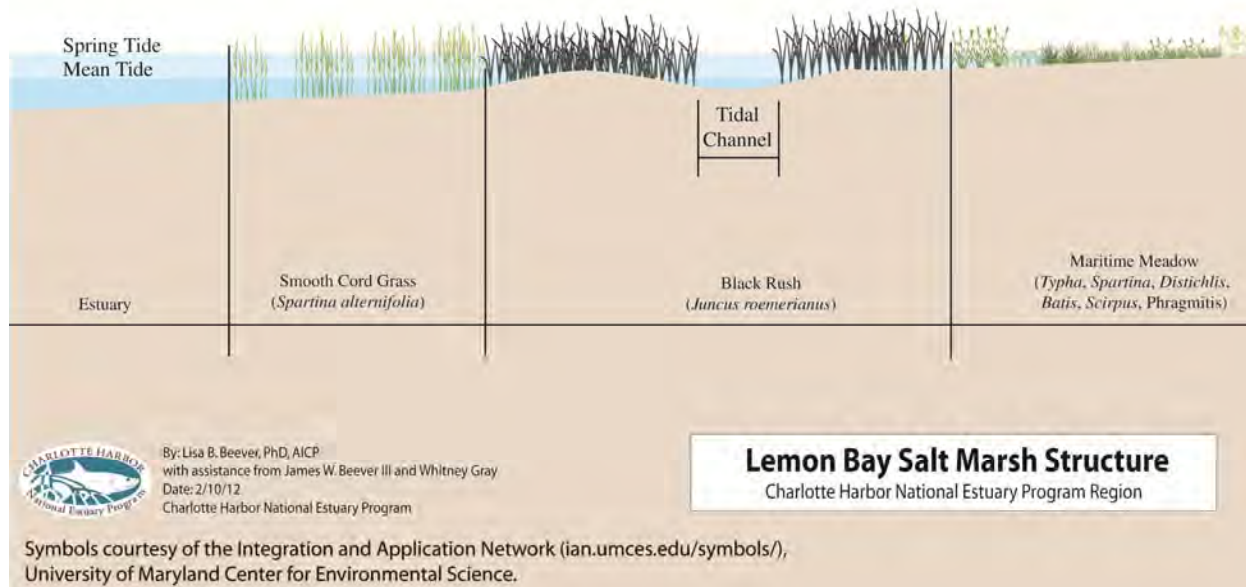


Figure 4: Lemon Bay Salt Marsh Zonation

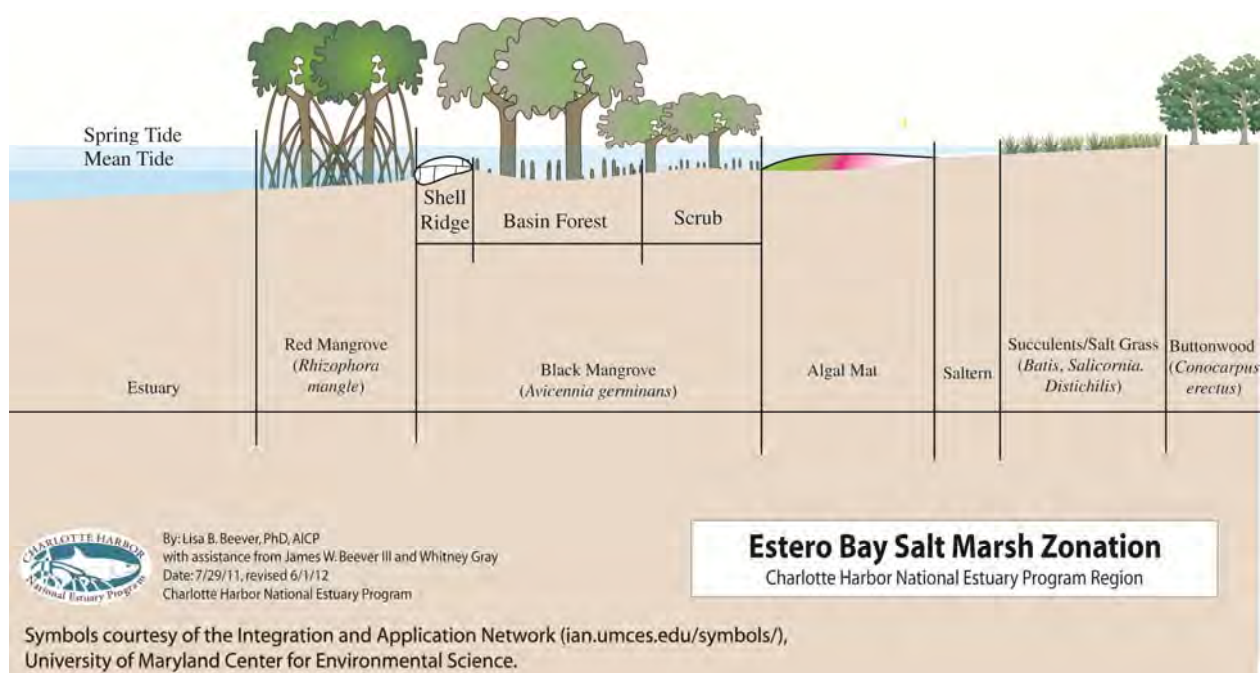


Figure 5: Estero Bay Salt Marsh Zonation

Table 11 also shows salt marsh acreage that is included in Florida Managed Lands (FLMA). Salt marsh restoration may be accomplished through either restoration on existing managed areas or by acquisition. Table 12 quantifies salt marsh type by watershed basin. These types and structure are illustrated on Figures 2 through 5. Note that different watersheds possess varying percentages of low versus high salt marshes. Based on Table 4, 38% of salt marsh restoration should be targeted to low (codes beginning with 1 or 2) salt marsh restoration and 62% should be targeted to high (codes beginning with 3) salt marsh restoration. Table 12 verifies that a high percentage of high marsh is managed than low marsh. Because insufficient low marsh can be managed to meet the targets set in Table 12, additional low marsh is targeted for the Peace River, Lemon Bay and Tidal Caloosahatchee basins.

| Basin | Low Marsh | High Marsh | % Low Marsh | % High Marsh | FLMA Low Marsh | FLMA High Marsh | Not Protected % Low Marsh | Not Protected % High Marsh |
|--------------------|-----------|------------|-------------|--------------|----------------|-----------------|---------------------------|----------------------------|
| Peace River | 2,022 | 280 | 88% | 12% | 499 | 211 | 75% | 25% |
| Myakka River | 1,081 | 211 | 84% | 16% | 360 | 151 | 67% | 28% |
| Dona & Roberts Bay | 36 | 0 | 100% | 0% | 1 | 0 | 97% | 0% |
| Lemon Bay | 48 | 114 | 30% | 70% | 11 | 100 | 77% | 12% |
| Charlotte Harbor | 199 | 4,024 | 5% | 95% | 171 | 3,637 | 14% | 10% |
| Pine Island and MP | 33 | 3,646 | 1% | 99% | 27 | 3,083 | 18% | 15% |
| Caloosahatchee | 215 | 174 | 55% | 45% | 161 | 144 | 25% | 17% |
| Estero Bay | 765 | 2,009 | 28% | 72% | 664 | 1,844 | 13% | 8% |
| Total | 4,399 | 10,458 | 30% | 70% | 1,893 | 9,170 | 43% | 88% |

Table 13: Salt Marsh by Type by Watershed Basin

| Basin | Short Term Total Salt Marsh (acres) | Short Term Low Marsh (acres) | Short Term High Marsh (acres) | Vision Total Salt Marsh | Vision Low Marsh (acres) | Vision High Marsh (acres) |
|--------------------|-------------------------------------|------------------------------|-------------------------------|-------------------------|--------------------------|---------------------------|
| Peace River | 218 | 208 | 9 | 671 | 642 | 29 |
| Myakka River | | 0 | 0 | 0 | 0 | 0 |
| Dona & Roberts Bay | | 0 | 0 | 1 | 1 | 0 |
| Lemon Bay | 44 | 32 | 12 | 136 | 98 | 37 |
| Charlotte Harbor | | 0 | 0 | 42 | 3 | 39 |
| Pine Island and MP | 60 | 1 | 60 | 269 | 3 | 266 |
| Caloosahatchee | 112 | 72 | 40 | 343 | 220 | 122 |
| Estero Bay | | 0 | 0 | 0 | 0 | 0 |
| Total | 434 | 313 | 121 | 1,419 | 967 | 494 |

Table 14: Salt Marsh Targets

Freshwater Wetlands

Freshwater Wetlands include both Forested and Non-Forested Systems. The previous chapter calls for 4,023 freshwater wetland protection and restoration.

Freshwater Non-Forested Wetlands include 641 Freshwater Marsh, 643 Wet Prairie and 644 Emergent Aquatic Vegetation. FDOT (1999) states that wet prairie is “composed predominately of grassy vegetation on hydric soils and is usually distinguished from marshes by having less water and shorter herbage.” SWFWMD (2010) goes on further to describe Freshwater Marshes as “wetlands communities characterized by herbaceous plant species that occur on sites where surface water is present for extended periods during the growing season, but is absent by the end of the growing season in most years. Freshwater marshes tend to be open expanses of grasses, sedges, rushes and other types of herbaceous plants.” Freshwater marsh sites “typically have a coarse textured organic surface soil over soft organic muck substrates.” Wet prairies are “usually on mineral soils that are inundated for a relatively short duration each year but with prolonged soil saturation” and are “subject to frequent fire.” Emergent Aquatic Vegetation “includes floating vegetation and vegetation which is found either partially or completely above the surface of water.” Since Emergent Aquatic Vegetation was not captured in any PDVM, it is not included in the targets.

SWFWMD mapping also distinguishes 6411 Sawgrass, none of which are under management but most of which is part of CHNEP’s restoration vision adopted in the 2013 CCMP. Over 217 acres of sawgrass have been identified in Charlotte, Glades and Highlands County, all in the Peace River basin.



Freshwater Marshes (6410) - Ground photo



Wet Prairies (6430) - Ground photo



Emergent Aquatic Vegetation (6440) - Ground photo

Figure 6: SWFWMD (2010) Freshwater Non-Forested Wetlands

Freshwater Forested Wetlands include 611 Bay Swamp, 615 Stream and Lake Swamps, 621 Cypress, and 625 Hydric Pine Flatwoods. SWFWMD (2010) states “Bay Swamps occur throughout Florida as relatively small communities. This community can be found on hillsides, in depressions in pine flatwoods, in ravines, or as strips along edges of creeks. These swamps are characterized by dense, low vegetation and are believed to be fed by groundwater and run-off from higher land.”

Wetland Hardwood Forests (610) are those wetland areas which are usually found on but not restricted to river, creek, and lake floodplain or overflow areas.

Cypress (621) is a forested wetland community in which pond cypress or bald cypress comprises over 67% of the forest canopy. In the case of pond cypress, common associates are swamp tupelo, slash pine and black titi. In the case of bald cypress, common associates are red maple, american elm, pumpkin ash, carolina ash, overcup oak, and water hickory. Bald cypress may be associated with laurel and water oaks, sweetgum and sweetbay on drier site (SWFWMD 2010).

Hydric Pine Flatwoods (625) are a distinct habitat in dynamic equilibrium between drought and flood, regularly and predictably perturbed by fire and water. As a result the hydric pine flatwoods have the highest plant species diversity of any habitat in South Florida. FWS (1999) reports that South Florida pine flatwoods are among the least protected habitats by current distribution of public lands. Regionally, the loss of hydric pine flatwoods habitats of South Florida will critically affect the biodiversity and endemic flora and fauna of South Florida.

The short term restoration target for is 11,095 acres and the restoration vision is an additional 54,422 acres.



Stream and Lake Swamps (Bottomland) (6150) – Ground photo



Cypress (6210) - Ground photo

Figure 7: SWFWMD (2010) Freshwater Forested Wetlands



Figure 8: FWS Hydric Pine Flatwood

| | PDVM Freshwater Wetlands | | | | | | | | | |
|--------------------|--------------------------|--------------|---------|----------------------|------------------|-------|--------------|---------|----------------------|------------------|
| | acres | | | | | % | | | | |
| | Total | Non-Forested | Cypress | Hydric Pine Flatwood | Hardwood Wetland | Total | Non-Forested | Cypress | Hydric Pine Flatwood | Hardwood Wetland |
| Peace River | 389,277 | 179,683 | 155,759 | 3,313 | 50,522 | 51 | 46 | 95 | 6 | 32 |
| Myakka River | 127,003 | 119,528 | 7,460 | 16 | 0 | 17 | 31 | 5 | 0 | 0 |
| Dona & Roberts Bay | 24,107 | 23,531 | 576 | 0 | 0 | 3 | 6 | 0 | 0 | 0 |
| Lemon Bay | 7,823 | 7,798 | 22 | 3 | 0 | 1 | 2 | 0 | 0 | 0 |
| Charlotte Harbor | 25,756 | 18,346 | 239 | 1,543 | 5,628 | 3 | 5 | 0 | 3 | 4 |
| Pine Island Sound | 15,144 | 3,506 | 0 | 1,594 | 10,044 | 2 | 1 | 0 | 3 | 6 |
| Caloosahatchee | 76,324 | 17,367 | 304 | 17,727 | 40,925 | 10 | 4 | 0 | 31 | 26 |
| Estero Bay | 100,696 | 19,909 | 0 | 32,252 | 48,534 | 13 | 5 | 0 | 57 | 31 |
| | 766,130 | 389,668 | 164,361 | 56,449 | 155,653 | 100 | 100 | 100 | 100 | 100 |

| | Managed Freshwater Wetlands | | | | | | | | | |
|--------------------|-----------------------------|--------------|-----------|----------------------|------------------|-------|--------------|---------|----------------------|------------------|
| | acres | | | | | % | | | | |
| | Total | Non-Forested | Cypresses | Hydric Pine Flatwood | Hardwood Wetland | Total | Non-Forested | Cypress | Hydric Pine Flatwood | Hardwood Wetland |
| Peace River | 52,579 | 35,495 | 16,018 | 1,065 | 0 | 33 | 36 | 40 | 7 | 0 |
| Myakka River | 44,470 | 30,456 | 13,482 | 532 | 0 | 28 | 31 | 34 | 3 | 0 |
| Dona & Roberts Bay | 2,468 | 1,583 | 847 | 38 | 0 | 2 | 2 | 2 | 0 | 0 |
| Lemon Bay | 1,786 | 1,649 | 137 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |
| Charlotte Harbor | 18,486 | 15,791 | 1,036 | 352 | 1,308 | 12 | 16 | 3 | 2 | 24 |
| Pine Island Sound | 2,272 | 287 | 1,903 | 3 | 78 | 1 | 0 | 5 | 0 | 1 |
| Caloosahatchee | 21,237 | 11,110 | 3,499 | 5,916 | 713 | 13 | 11 | 9 | 37 | 13 |
| Estero Bay | 16,017 | 1,776 | 2,711 | 8,259 | 3,271 | 10 | 2 | 7 | 51 | 61 |
| | 159,315 | 98,147 | 39,632 | 16,166 | 5,370 | 100 | 100 | 100 | 100 | 100 |

| | CCMP Objective Indexed Target Freshwater Wetlands | | | | |
|-----------------------|--|------------------|---------|----------------------------|--------------------------|
| | Total | Non- Forested | Cypress | Hydric Pine Flatwood | Hard- wood Wetland |
| Peace River | 8,346 | 4,526 | 3,820 | 0 | 0 |
| Myakka River | 0 | 0 | 0 | 0 | 0 |
| Dona & Roberts Bay | 90 | 90 | 0 | 0 | 0 |
| Lemon Bay | 7 | 7 | 0 | 0 | 0 |
| Charlotte Harbor | 5 | 0 | 0 | 5 | 0 |
| Pine Island Sound | 4 | 2 | 0 | 0 | 2 |
| Caloosahatchee | 44 | 0 | 0 | 0 | 44 |
| Estero Bay | 1,341 | 75 | 0 | 1,266 | 0 |
| | 9,836 | 4,700 | 3,820 | 1,271 | 46 |

| | Vision Indexed Target Freshwater Wetlands | | | | |
|-----------------------|--|------------------|---------|----------------------------|--------------------------|
| | Total | Non- Forested | Cypress | Hydric Pine Flatwood | Hard- wood Wetland |
| Peace River | 42,034 | 12,082 | 24,721 | 0 | 5,231 |
| Myakka River | 1,185 | 1,185 | 0 | 0 | 0 |
| Dona & Roberts Bay | 970 | 970 | 0 | 0 | 0 |
| Lemon Bay | 28 | 29 | 0 | 0 | 0 |
| Charlotte Harbor | 28 | 0 | 0 | 28 | 0 |
| Pine Island Sound | 298 | 20 | 0 | 118 | 159 |
| Caloosahatchee | 1,609 | 0 | 0 | 0 | 1,609 |
| Estero Bay | 2,758 | 615 | 0 | 2,142 | 0 |
| | 48,910 | 14,901 | 24,721 | 2,288 | 6,999 |

Uplands

Natural uplands include both Rangeland (Non-Forested Uplands) and Upland Forest. The previous chapter calls for 48,406 native upland protection and restoration. Unlike wetlands, SWFWMD maps most communities uplands at level 2. Most analysis will be accomplished at this level. Non-forested Uplands include 310 Herbaceous, 320 Shrub and Brushland, and 330 Mixed Rangeland.

310 Herbaceous Uplands “includes prairie grasses which occur on the upland margins of the wetland zone and may be periodically inundated by water. Generally, it is the marginal area between marsh and upland forest areas.” In wet areas, many types of soils result in vegetation types dominated by grasses, sedges, rushes, and other herbs while drier grass areas would be dominated by wire grasses with some saw palmetto present.” (SWFWMD 2010.)

320 Shrub and Brushland include saw palmettos, gallberry, wax myrtle, coastal scrub and other shrubs and brush. Generally, saw palmetto is the most prevalent plant cover intermixed with other wood scrub plant species as well as short herbs and grasses. Coastal scrub vegetation would include pioneer herbs and shrubs composed of such typical plants as sea purslane, sea grapes, and sea oats without any one of these types being dominant (SWFWMD 2010.) However, 421 Oak Scrub and Scrubby Flatwoods are often mapped under this classification. SWFWMD call out coastal scrub and palmetto prairie classifications in its mapping.

330 Mixed Rangeland are described by SWFWMD (2010) as a transition zone between forested and herbaceous communities or as re-vegetation areas that have been disturbed. No Pre-development areas have been classified as such.



Herbaceous (3100) - Ground Photo



Shrub and Brushland (3200) - Ground photo



Mixed Rangeland (3300) - Ground photo

Figure 9: SWFWMD (2010) Rangeland

Forested Uplands include 411 Pine Flatwoods, 420 Upland Hardwood Forests and 434 Hardwood - Conifer Mixed.

411 Pine Flatwoods is typically dominated by slash pine with an understory of saw palmetto, wax myrtle, gallberry and a wide variety of herbs and brush. This category includes mesic (with a saw palmetto dominate understory) and xeric.

412 Longleaf Pine/Xeric Oak and 413 Sand Pine are rare habitats that

420 Upland Hardwood Forest includes predominately 425 Temperate Hardwood, 421 Xeric Oak and 426 Tropical Hardwoods. For modern mapping, these habitats are combined under the broader category. Common components include a wide variety of oaks, red bay, sweetbay, sweetgum, hickories, cabbage palm and hollies. Various pines are minor associates (FDOT 1999.)

434 Hardwood - Conifer Mixed is reserved for those forested areas in which neither upland conifers nor hardwoods achieve a 66 percent crown canopy dominance. These systems are often a sign of fire suppression in Pine Flatwoods.



Pine Flatwoods (4110) – Ground photo



Upland Hardwood Forest (4200) - Ground Photo



Hardwood Coniferous Mix (4340) - Ground photo

Figure 10: SWFWMD (2010) Upland Forest

Both benthic and wetland systems benefit from upland buffers. Therefore uplands in association with wetlands and benthos are preferred.

| | PDVM Native Uplands | | | | | | | |
|--------------------|---------------------|-------------------|---------------------|-----------------|----------------|-------------------------------------|-------------------------|------------------------|
| | acres | | | | | | | |
| | Total | Herbaceous Upland | Shrub and Brushland | Mixed Rangeland | Pine Flatwoods | Longleaf Pine/Xeric Oak & Sand Pine | Upland Hardwood Forests | Hardwood Conifer Mixed |
| Peace River | 1,048,857 | 1,119 | 178,388 | 0 | 638,789 | 188,613 | 40,869 | 1,080 |
| Myakka River | 243,970 | 0 | 18,152 | 0 | 197,810 | 1,111 | 26,897 | 0 |
| Dona & Roberts Bay | 47,911 | 0 | 9 | 0 | 44,382 | 437 | 3,083 | 0 |
| Lemon Bay | 32,828 | 0 | 1,195 | 0 | 29,881 | 69 | 1,683 | 0 |
| Charlotte Harbor | 72,740 | 0 | 252 | 0 | 71,152 | 85 | 1,251 | 0 |
| Pine Island Sound | 41,347 | 0 | 0 | 0 | 35,695 | 121 | 5,531 | 0 |
| Caloosahatchee | 168,176 | 0 | 1,114 | 0 | 165,462 | 953 | 647 | 0 |
| Estero Bay | 71,407 | 0 | 0 | 0 | 65,898 | 2,942 | 2,566 | 0 |
| | 1,727,236 | 1,119 | 199,111 | 0 | 1,249,069 | 194,330 | 82,528 | 1,080 |

| | PDVM Native Uplands | | | | | | | |
|--------------------|---------------------|-------------------|---------------------|-----------------|----------------|-------------------------------------|-------------------------|------------------------|
| | % | | | | | | | |
| | Total | Herbaceous Upland | Shrub and Brushland | Mixed Rangeland | Pine Flatwoods | Longleaf Pine/Xeric Oak & Sand Pine | Upland Hardwood Forests | Hardwood Conifer Mixed |
| Peace River | 100% | 0% | 17% | 0% | 61% | 18% | 4% | 0% |
| Myakka River | 100% | 0% | 7% | 0% | 81% | 0% | 11% | 0% |
| Dona & Roberts Bay | 100% | 0% | 0% | 0% | 93% | 1% | 6% | 0% |
| Lemon Bay | 100% | 0% | 4% | 0% | 91% | 0% | 5% | 0% |
| Charlotte Harbor | 100% | 0% | 0% | 0% | 98% | 0% | 2% | 0% |
| Pine Island Sound | 100% | 0% | 0% | 0% | 86% | 0% | 13% | 0% |
| Caloosahatchee | 100% | 0% | 1% | 0% | 98% | 1% | 0% | 0% |
| Estero Bay | 100% | 0% | 0% | 0% | 92% | 4% | 4% | 0% |
| | 100% | 0% | 12% | 0% | 72% | 11% | 5% | 0% |

| | Managed Uplands | | | | | | | |
|--------------------|-----------------|-------------------|---------------------|------------------|-----------------|-------------------------------------|-------------------------|------------------------|
| | acres | | | | | | | |
| | Total | Herbaceous Upland | Shrub and Brushland | Mixed Range-land | Pine Flat-woods | Longleaf Pine/Xeric Oak & Sand Pine | Upland Hardwood Forests | Hardwood Conifer Mixed |
| Peace River | 49,322 | 905 | 24,922 | 1,314 | 17,551 | 0 | 31 | 4,601 |
| Myakka River | 64,584 | 446 | 29,941 | 1,601 | 26,182 | 0 | 255 | 6,158 |
| Dona & Roberts Bay | 3,851 | 61 | 464 | 104 | 2,823 | 0 | 0 | 399 |
| Lemon Bay | 4,833 | 0 | 1,267 | 135 | 2,395 | 0 | 0 | 1,036 |
| Charlotte Harbor | 26,148 | 819 | 6,654 | 228 | 18,174 | 0 | 31 | 241 |
| Pine Island Sound | 4,161 | 259 | 1,253 | 144 | 1,148 | 0 | 1,332 | 26 |
| Caloosahatchee | 38,688 | 1,361 | 11,232 | 288 | 23,828 | 0 | 505 | 1,473 |
| Estero Bay | 3,425 | 328 | 738 | 359 | 1,790 | 7 | 104 | 99 |
| | 195,012 | 4,179 | 76,471 | 4,173 | 93,891 | 7 | 2,258 | 14,033 |

| | Managed Uplands | | | | | | | |
|--------------------|-----------------|-------------------|---------------------|------------------|-----------------|-------------------------------------|-------------------------|------------------------|
| | % | | | | | | | |
| | Total | Herbaceous Upland | Shrub and Brushland | Mixed Range-land | Pine Flat-woods | Longleaf Pine/Xeric Oak & Sand Pine | Upland Hardwood Forests | Hardwood Conifer Mixed |
| Peace River | 100% | 2% | 51% | 3% | 36% | 0% | 0% | 9% |
| Myakka River | 100% | 1% | 46% | 2% | 41% | 0% | 0% | 10% |
| Dona & Roberts Bay | 100% | 2% | 12% | 3% | 73% | 0% | 0% | 10% |
| Lemon Bay | 100% | 0% | 26% | 3% | 50% | 0% | 0% | 21% |
| Charlotte Harbor | 100% | 3% | 25% | 1% | 70% | 0% | 0% | 1% |
| Pine Island Sound | 100% | 6% | 30% | 3% | 28% | 0% | 32% | 1% |
| Caloosahatchee | 100% | 4% | 29% | 1% | 62% | 0% | 1% | 4% |
| Estero Bay | 100% | 10% | 22% | 10% | 52% | 0% | 3% | 3% |
| | 100% | 2% | 39% | 2% | 48% | 0% | 1% | 7% |

| CCMP Objective Indexed Target Native Uplands | | | | | | | | |
|---|--------|----------------------|---------------------------|-------------------------|------------------------|--|-------------------------------|------------------------------|
| | Total | Herbaceous Upland | Shrub and Brushland | Mixed Range- land | Pine Flat- woods | Longleaf Pine/Xeric Oak & Sand Pine | Upland Hardwood Forests | Hardwood Conifer Mixed |
| Peace River | 5,885 | 0 | 0 | 0 | 5,884 | 0 | 2 | 0 |
| Myakka River | 12,864 | 0 | 0 | 0 | 12,831 | 0 | 33 | 0 |
| Dona & Roberts Bay | 1,277 | 0 | 0 | 0 | 1,277 | 0 | 0 | 0 |
| Lemon Bay | 1,324 | 0 | 0 | 0 | 1,324 | 0 | 0 | 0 |
| Charlotte Harbor | 10,695 | 0 | 0 | 0 | 10,694 | 0 | 1 | 0 |
| Pine Island Sound | 713 | 0 | 0 | 0 | 713 | 0 | 0 | 0 |
| Caloosahatchee | 14,645 | 0 | 0 | 0 | 14,645 | 0 | 0 | 0 |
| Estero Bay | 1,006 | 0 | 0 | 0 | 1,005 | 0 | 1 | 0 |
| | 48,409 | 0 | 0 | 0 | 48,372 | 0 | 36 | 0 |

| Vision Indexed Target Native Uplands | | | | | | | | |
|---|---------|----------------------|------------------------|-------------------------|---------------------|--|-------------------------------|------------------------------|
| | Total | Herbaceous Upland | Shrub and Brushland | Mixed Range- land | Pine Flat- woods | Longleaf Pine/Xeric Oak & Sand Pine | Upland Hardwood Forests | Hardwood Conifer Mixed |
| Peace River | 151,717 | 0 | 0 | 0 | 115,482 | 33,224 | 1,537 | 1,473 |
| Myakka River | 60,017 | 0 | 0 | 0 | 57,309 | 5 | 2,704 | 0 |
| Dona & Roberts Bay | 11,485 | 0 | 0 | 0 | 11,087 | 8 | 391 | 0 |
| Lemon Bay | 10,134 | 0 | 0 | 0 | 10,039 | 0 | 95 | 0 |
| Charlotte Harbor | 25,796 | 0 | 0 | 0 | 25,758 | 0 | 38 | 0 |
| Pine Island Sound | 13,999 | 0 | 0 | 0 | 13,998 | 0 | 0 | 0 |
| Caloosahatchee | 63,909 | 0 | 0 | 0 | 63,901 | 8 | 0 | 0 |
| Estero Bay | 22,250 | 0 | 0 | 0 | 22,080 | 134 | 36 | 0 |
| | 359,306 | 0 | 0 | 0 | 319,654 | 33,379 | 4,800 | 1,473 |

Summary Restoration Targets

This section summarizes restoration targets and restoration needs for the latest data sources available. Harbor segments are for estuarine benthic habitats. Watershed basins segmentation is for land-based resources.

| Harbor Segment | Seagrass Targets | Seagrass Restoration Needs, pre-2014 | Oyster Targets | Oyster Restoration Needs, 1999 |
|-----------------------|------------------|--------------------------------------|----------------|--------------------------------|
| Dona and Roberts Bay* | 112 | | 7 | |
| Upper Lemon Bay | 1,009 | | 23 | 19 |
| Lower Lemon Bay | 2,882 | 97 | 47 | 26 |
| Tidal Myakka River* | 456 | 169 | 115 | 80 |
| Tidal Peace River* | 975 | 586 | 52 | 39 |
| West Wall | 2,106 | | 87 | 80 |
| East Wall | 3,898 | 399 | 41 | 39 |
| Cape Haze | 6,998 | 149 | 66 | 56 |
| Bokeelia | 3,342 | | 56 | 47 |
| Pine Island Sound | 26,837 | | 379 | 338 |
| Matlacha Pass | 9,315 | 1,320 | 125 | 110 |
| San Carlos Bay | 4,372 | | 113 | 90 |
| Tidal Caloosahatchee* | 93 | | 23 | 21 |
| Estero Bay | 3,662 | 72 | 108 | 66 |
| TOTAL | 66,057 | 2,792 | 1,242 | 1,011 |

* These riverine segments may have underreported seagrass acreages, due to water color impacts and are therefore presented for completeness only. The numbers in these segments should not be used for reporting of seagrass loss or gain over time.

Table __ : Estuarine Restoration Targets

| Watershed Basin | Low Marsh Target | Low Marsh Restoration Needs, 2011 | High Marsh Target | High Marsh Restoration Needs, 2011 |
|------------------------|-------------------------|--|--------------------------|---|
| Peace River | 2,061 | 39 | 280 | |
| Myakka River | 1,081 | | 211 | |
| Dona & Roberts Bay | 36 | | 0 | |
| Lemon Bay | 86 | 37 | 114 | |
| Charlotte Harbor | 227 | 28 | 4,146 | 122 |
| Pine Island and MP | 39 | 6 | 3,795 | 149 |
| Caloosahatchee | 269 | 54 | 174 | |
| Estero Bay | 765 | | 2,009 | |
| Total | 4,563 | 164 | 10,728 | 270 |

| CCMP Objective Indexed Target Native Uplands | | | | | | | | |
|---|--------|-------------------|---------------------|------------------|-----------------|-------------------------------------|-------------------------|------------------------|
| | Total | Herbaceous Upland | Shrub and Brushland | Mixed Range-land | Pine Flat-woods | Longleaf Pine/Xeric Oak & Sand Pine | Upland Hardwood Forests | Hardwood Conifer Mixed |
| Peace River | 5,885 | 0 | 0 | 0 | 5,884 | 0 | 2 | 0 |
| Myakka River | 12,864 | 0 | 0 | 0 | 12,831 | 0 | 33 | 0 |
| Dona & Roberts Bay | 1,277 | 0 | 0 | 0 | 1,277 | 0 | 0 | 0 |
| Lemon Bay | 1,324 | 0 | 0 | 0 | 1,324 | 0 | 0 | 0 |
| Charlotte Harbor | 10,695 | 0 | 0 | 0 | 10,694 | 0 | 1 | 0 |
| Pine Island Sound | 713 | 0 | 0 | 0 | 713 | 0 | 0 | 0 |
| Caloosahatchee | 14,645 | 0 | 0 | 0 | 14,645 | 0 | 0 | 0 |
| Estero Bay | 1,006 | 0 | 0 | 0 | 1,005 | 0 | 1 | 0 |
| | 48,409 | 0 | 0 | 0 | 48,372 | 0 | 36 | 0 |

| Vision Indexed Target Native Uplands |
|---|
|---|

| | Total | Herbaceous Upland | Shrub and Brushland | Mixed Range-land | Pine Flat-woods | Longleaf Pine/Xeric Oak & Sand Pine | Upland Hardwood Forests | Hardwood Conifer Mixed |
|--------------------|---------|-------------------|---------------------|------------------|-----------------|-------------------------------------|-------------------------|------------------------|
| Peace River | 151,717 | 0 | 0 | 0 | 115,482 | 33,224 | 1,537 | 1,473 |
| Myakka River | 60,017 | 0 | 0 | 0 | 57,309 | 5 | 2,704 | 0 |
| Dona & Roberts Bay | 11,485 | 0 | 0 | 0 | 11,087 | 8 | 391 | 0 |
| Lemon Bay | 10,134 | 0 | 0 | 0 | 10,039 | 0 | 95 | 0 |
| Charlotte Harbor | 25,796 | 0 | 0 | 0 | 25,758 | 0 | 38 | 0 |
| Pine Island Sound | 13,999 | 0 | 0 | 0 | 13,998 | 0 | 0 | 0 |
| Caloosahatchee | 63,909 | 0 | 0 | 0 | 63,901 | 8 | 0 | 0 |
| Estero Bay | 22,250 | 0 | 0 | 0 | 22,080 | 134 | 36 | 0 |
| | 359,306 | 0 | 0 | 0 | 319,654 | 33,379 | 4,800 | 1,473 |

| CCMP Objective Indexed Target Freshwater Wetlands | | | | | |
|--|-------|--------------|---------|----------------------|-------------------|
| | Total | Non-Forested | Cypress | Hydric Pine Flatwood | Hard-wood Wetland |
| Peace River | 8,346 | 4,526 | 3,820 | 0 | 0 |
| Myakka River | 0 | 0 | 0 | 0 | 0 |
| Dona & Roberts Bay | 90 | 90 | 0 | 0 | 0 |
| Lemon Bay | 7 | 7 | 0 | 0 | 0 |
| Charlotte Harbor | 5 | 0 | 0 | 5 | 0 |
| Pine Island Sound | 4 | 2 | 0 | 0 | 2 |
| Caloosahatchee | 44 | 0 | 0 | 0 | 44 |
| Estero Bay | 1,341 | 75 | 0 | 1,266 | 0 |
| | 9,836 | 4,700 | 3,820 | 1,271 | 46 |

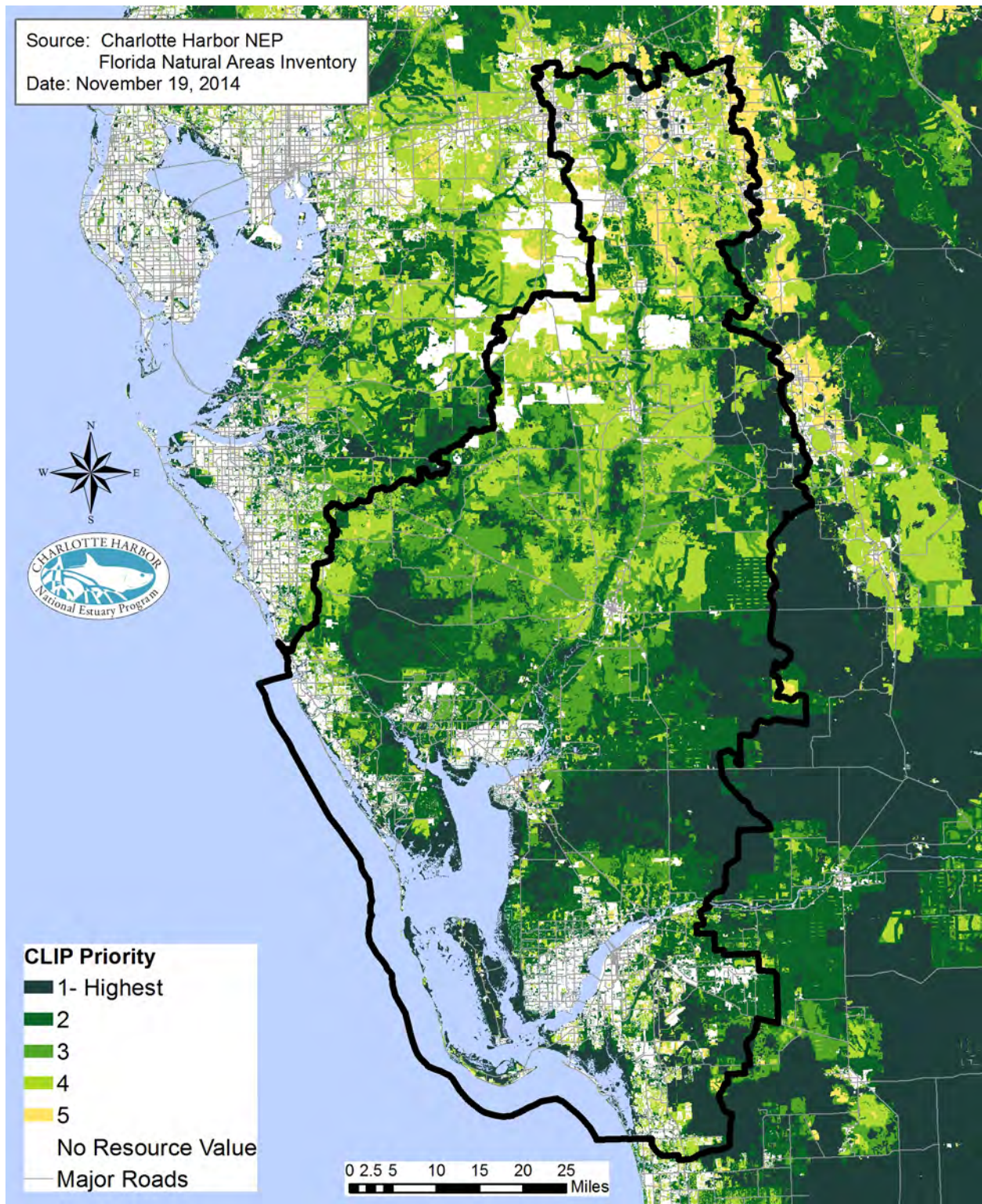
| Vision Indexed Target Freshwater Wetlands | | | | | |
|--|--------|--------------|---------|----------------------|-------------------|
| | Total | Non-Forested | Cypress | Hydric Pine Flatwood | Hard-wood Wetland |
| Peace River | 42,034 | 12,082 | 24,721 | 0 | 5,231 |
| Myakka River | 1,185 | 1,185 | 0 | 0 | 0 |
| Dona & Roberts Bay | 970 | 970 | 0 | 0 | 0 |

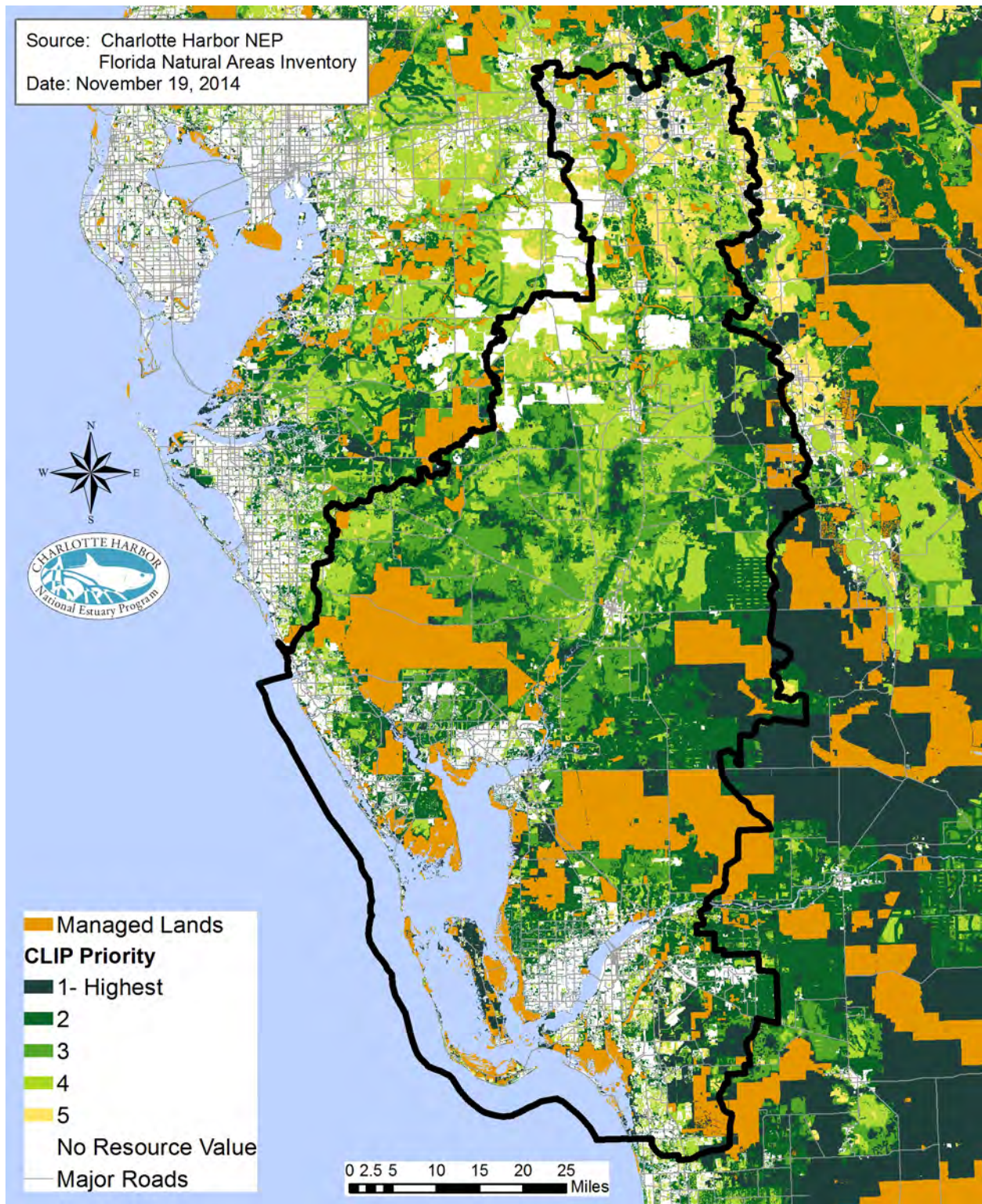
| | | | | | |
|-------------------|--------|--------|--------|-------|-------|
| Lemon Bay | 28 | 29 | 0 | 0 | 0 |
| Charlotte Harbor | 28 | 0 | 0 | 28 | 0 |
| Pine Island Sound | 298 | 20 | 0 | 118 | 159 |
| Caloosahatchee | 1,609 | 0 | 0 | 0 | 1,609 |
| Estero Bay | 2,758 | 615 | 0 | 2,142 | 0 |
| | 48,910 | 14,901 | 24,721 | 2,288 | 6,999 |

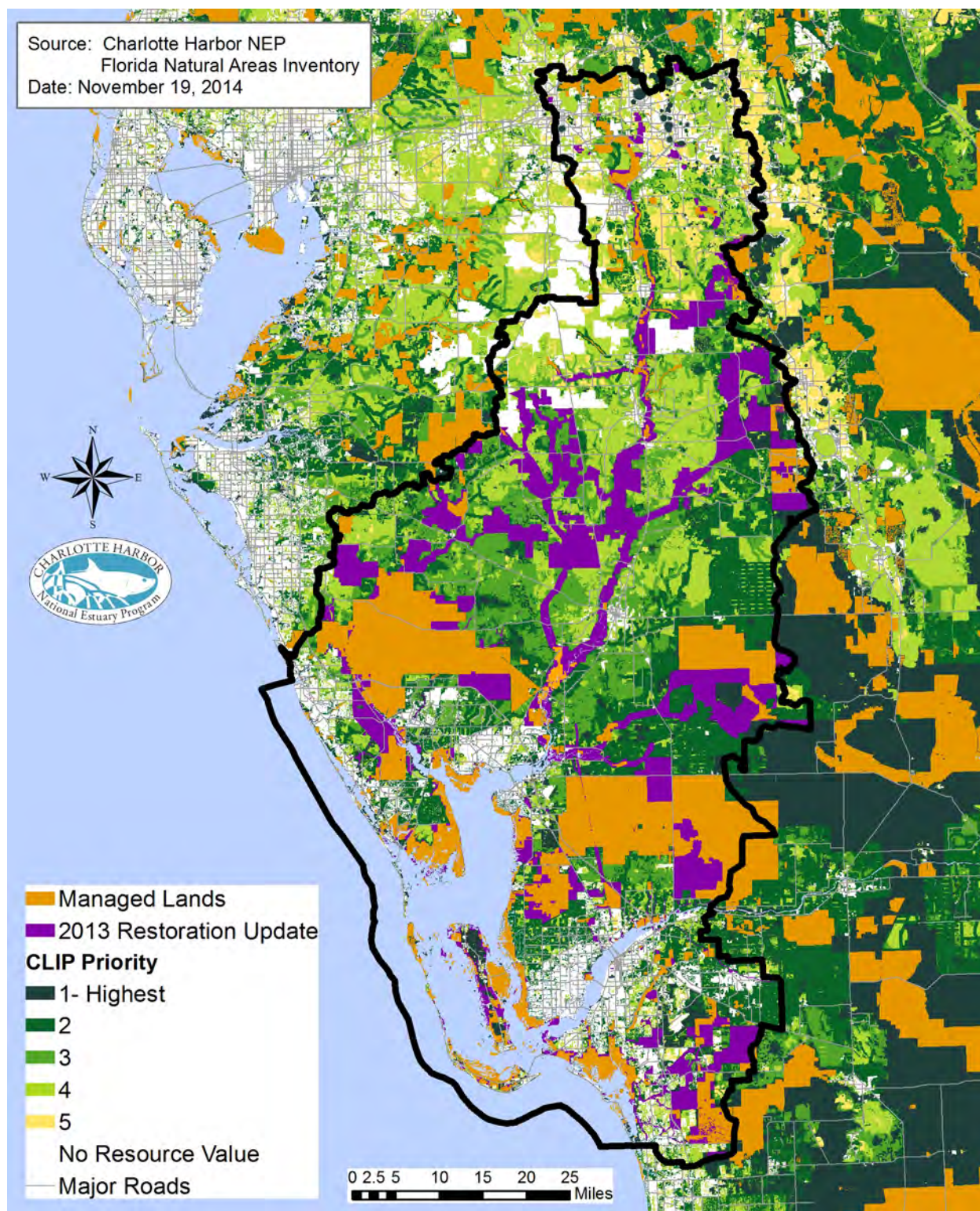
Restoration Projects Update

Critical Lands

The inventory began with the Estero Bay Agency on Bay Management (EBABM.) The EMABM.







Restoration Priorities

Habitat Changes

In 2010, CHNEP compiled pre-development vegetation maps from a number of sources:
South Florida Water Management

Summary

In both the case of Pre-Development Vegetation Maps and modern water management district FLUCCS mapping, tropical hardwood hammocks (426) have not been captured. Bay swamps (611) have not been captures in the PDVM mapping. Xeric Oak (

Bibliography

- Beever, J. W., W. Gray, L.B. Beever, D. Cobb. T. Walker. 2012. Climate Change Vulnerability Assessment and Adaptation Opportunities for Salt Marsh Types in Southwest Florida. Southwest Florida Regional Planning Council. Fort Myers, Florida. 377 pp.
http://www.swfrpc.org/content/Natural_Resources/Climate_Change/Salt%20Marsh%20Study%20Draft%20Reduced.pdf
- Calleson, D and E. Draper. 1992. Save Our Rivers: Protecting Florida's Waters 1981-1992. The Nature Conservancy. Tallahassee, Florida. 26 pp.
<http://ufdc.ufl.edu/WL00004501/00001/>
- CHNEP. 2012. Oyster Habitat Restoration Plan. Technical Report December 2012. Charlotte Harbor National Estuary Program. Fort Myers, Florida 170 pp.
- Farr, J.A. and O.G. Brock. 2006. "Florida's Landmark Programs for Conservation and Recreation Land Acquisition" in Sustain Volume 14 (Spring/Summer 2006) The Kentucky Institute for the Environment and Sustainable Development at the University of Louisville. 17 pp. http://www.dep.state.fl.us/lands/files/Florida_LandAcquisition.pdf
- Fish and Wildlife Service. 1999. "South Florida Multi-Species Recovery Plan" Bethesda. MD.
<http://www.fws.gov/verobeach/ListedSpeciesMSRP.html>.
- Florida Department of Transportation, Survey and Mapping, Geographic Mapping Section. 1999. Florida Land Use, Cover and Forms Classification System. Tallahassee, Florida. 95 pp.
<http://www.dot.state.fl.us/SurveyingAndMapping/documentsandpubs/fluccmanual1999.pdf>
- Harris, B. A., K. D. Haddad, K.A. Steidinger, J. A. Huff. 1983. Assessment of Fisheries Habitat: Charlotte Harbor and Lake Worth, Florida. Florida Department of Natural Resources, Bureau of Marine Research. St. Petersburg, Florida. 211 pp.
- Janicki, A., M. Dema, and M. Wessel. 2009. Water Quality Refinement Project. Task 2: Seagrass Target Development. Charlotte Harbor National Estuary Program. Fort Myers Florida. 62 pp.
- Karlin, A. A., K. A. Albury and L. B. Shapiro. 2004. Pre-Settlement Land Cover Mapping from GLOS Records. 24th Annual Esri International User Conference, August 9–13, 2004, San Diego, CA. 8 pp.
<http://proceedings.esri.com/library/userconf/proc04/docs/pap1530.pdf>.
- Lewis Environmental Services Inc. and Coastal Environmental Inc. 1996. Setting Priorities for Tampa Bay Habitat Protection and Restoration: Restoring the Balance. Project T-94-03. Technical Publication No. 09-95. Tampa Bay National Estuary Program. 241 pp.

- https://www.tbep.tech.org/TBEP_TECH_PUBS/1995/TBEP_09-95Restoring-Balance.pdf.
- Lugo, A. E. and S. C. Snedaker. 1974. The ecology of Mangroves. *Annu. Rev. Ecol. Syst.* 5:39-64.
- Odum, W. E., C. C. LcIvor, and T. J. Smith, III. 1982. The ecology of the mangroves of south Florida: a community profile. U. S. Fish and Wildlife Service, Office of Biological Services. Washington D. C. FWS/OBS-81/24 144 pp.
- PBS&J. 2010. Tampa Bay Estuary Program Habitat Master Plan Update. Tampa Bay Estuary Program. 368 pp.
https://www.tbep.tech.org/TBEP_TECH_PUBS/2009/TBEP_06_09_Habitat_Master_Plan_Update_Report_July_2010.pdf
- Raines, M. S. Kandry, V. Seidel, T Crisman. 2012, Prioritizing Habiata Resoration Goals in the Tampa Bay Watershed. Tampa Bay Estuary Program. 74 pp.
https://www.tbep.tech.org/TBEP_TECH_PUBS/2012/TBEP_10_12_USF_Prioritizing_Habitat_Restoration_Goals_2012_04.pdf.
- Scheda Ecological Associates. 2014. Master Plan for the Protection and Restoration of Freshwater Wetlands in the Tampa Bay Watershed, Florida. Tampa Bay Estuary Program. 206 pp.
http://www.tbep.tech.org/TBEP_TECH_PUBS/2014/TBEP_05_15_Freshwater_Wetland_Master_Plan.pdf.
- SFWMD. 2002. FLUCCS Codes Modified for SFWMD 5/30/02. West Palm Beacch, Florida. 5 pp.
http://www.evergladesplan.org/pm/projects/project_docs/pdp_08_eaa_store/111303_docs_08_socio_fluccs.pdf
- SWFWMD. 2010. Photo Interpretation Key for Land Use Classification. Southwest Florida Water Management District .Brooksville, Florida. 173 pp.
http://www.swfwmd.state.fl.us/data/gis/LULC_Photo_Interpretation_Key.pdf
- Zahina, J. G., W. P. Said, R. Grein and M. Duever. 2007. Pre-Development Vegetation Communities of Southern Florida. Technical Publication HESM-02. South Florida Water Management District. West Palm Beach, Florida. 136 pp.
https://my.sfwmd.gov/portal/page/portal/pg_grp_tech_pubs/PORTLET_tech_pubs/pdvd2_techpubhesm-02_june2007.pdf.

Appendix A: FLUCCS Crosswalk

| Integrated Category | | PDVM-SFWMD | | PDVM-SFWMD | | 08-SFWMD | | 09-SFWMD | |
|---------------------|------------------------------------|------------|-------------------------------------|------------|-------------------------------------|----------|--|----------|--|
| 310 | Herbaceous Uplands | | | 3100 | Herbaceous (Dry Prairie) | 3100 | Herbaceous (Dry Prairie) | 3100 | Herbaceous (Dry Prairie) |
| 320 | Shrub and Brushland | | | | | 3200 | Shrub and Brushland | | |
| | | 3210 | Palmetto Prairies | | | 3210 | Palmetto Prairies | 3210 | Palmetto Prairies |
| | | | | 3220 | Coastal Scrub | 3220 | Coastal Scrub | 3200 | Shrub and Brushland |
| 320 | Mixed Rangeland | | | | | 320 | Mixed Rangeland | 320 | Mixed Rangeland |
| 411 | Pine Flatwoods | | | 400X | UPLAND FORESTS | | | | |
| | | | | 4100 | Upland Coniferous Forests | | | | |
| | | 4110 | Pine Flatwoods | 4110 | Pine Flatwoods | 4110 | Pine Flatwoods | 4110 | Pine Flatwoods |
| 412/413 | Longleaf Pine-Xeric Oak, Sand Pine | | | 4120 | Longleaf Pine - Xeric Oak | | | | |
| | | | | 4130 | Sand Pine Scrub | | | | |
| 420 | Upland Hardwood Forest | 4210 | Xeric Oak | 4210 | Xeric Oak | 4200 | Upland Hardwood Forests | 4200 | Upland Hardwood Forests |
| | | 4230 | Oak - Pine - Hickory | 4230 | Oak - Pine - Hickory | 4270 | Live Oak - Upland Temperate Hammock | | |
| | | 4250 | Temperate Hardwood | 4250 | Temperate Hardwood | 4271 | Live Oak Other | | |
| | | | | | | 4280 | Cabbage Palm | 4280 | Cabbage Palm |
| 434 | Hardwood - Conifer Mixed | | | 4140 | Pine - Mesic Oak | 4340 | Hardwood - Conifer Mixed | 4340 | Hardwood - Conifer Mixed |
| 612 | Mangrove Swamps | 6120 | Mangrove Swamps | 6120 | Mangrove Swamps | 6120 | Mangrove Swamps | 6120 | Mangrove Swamps |
| 610 | Wetland Hardwood Forest | 6150 | Stream and Lake Swamps (Bottomland) | 6150 | Stream and Lake Swamps (Bottomland) | 6150 | Stream and Lake Swamps (Bottomland) | 6150 | Stream and Lake Swamps (Bottomland) |
| | | 6170 | Mixed Wetland Hardwoods | 6170 | Mixed Wetland Hardwoods | 6170 | Mixed Wetland Hardwoods | 6170 | Mixed Wetland Hardwoods |
| | | | | | | 6172 | Mixed wetland hardwoods - mixed shrubs | 6172 | Mixed wetland hardwoods - mixed shrubs |
| | | | | | | 6300 | Wetland Forested Mixed | 6300 | Wetland Forested Mixed |

| Integrated Category | | PDVM-SFWMD | | PDVM-SFWFMD | | 08-SFWMD | | 09-SFWFMD | |
|---------------------|------------------------------|------------|-------------------------------|-------------|---------------------------------|----------|-------------------------------|-----------|----------------------------|
| 621 | Cypress | 6210 | Cypress | 6210 | Cypress | 6210 | Cypress | 6210 | Cypress |
| | | 6240 | Cypress - Pine - Cabbage Palm | 6240 | Cypress - Pine - Cabbage Palm | 6215 | cypress domes | | |
| | | | | | | 6216 | cypress-mixed hardwoods | | |
| | | | | | | 6240 | Cypress - Pine - Cabbage Palm | | |
| 625 | Hydric Pine Flatwoods | | | | | 6200 | Wetland Coniferous Forests | 6200 | Wetland Coniferous Forests |
| | | 6250 | Hydric Pine Flatwoods | 6250 | Hydric Pine Flatwoods | 6250 | Hydric Pine Flatwoods | 6250 | Hydric Pine Flatwoods |
| | | | | 6270 | Slash Pine Swamp Forest | | | | |
| | | | | 6350 | "Low Pineland" | | | | |
| 641/643 | Freshwater Marsh/Wet Prairie | | | 6400 | Vegetated Non-Forested Wetlands | | | | |
| | | 6410 | Freshwater Marshes | 6410 | Freshwater Marshes | 6410 | Freshwater Marshes | 6410 | Freshwater Marshes |
| | | 6430 | Wet Prairies | 6430 | Wet Prairies | | | | |
| 642 | Saltwater Marshes | 6420 | Saltwater Marshes | 6420 | Saltwater Marshes | 6420 | Saltwater Marshes | 6420 | Saltwater Marshes |

Appendix B: Table from Harris et al. 1983

| Habitat Component Year | Mangrove | | Non-Vegetated Tidal Flat | | Oyster Reef | | Saltmarsh | | Seagrass | |
|---------------------------|----------|-------|-----------------------------|------|-------------|------|-----------|------|----------|-------|
| | 1945 | 1982 | 1945 | 1982 | 1945 | 1982 | 1945 | 1982 | 1945 | 1982 |
| USGS Quadrangle Name | | | | | | | | | | |
| El Jobean | 3433 | 4321 | 757 | 126 | 0 | 4 | 1762 | 1528 | 1632 | 894 |
| Punta Gorda SW | 6885 | 8251 | 2930 | 1079 | 173 | 28 | 436 | 169 | 6881 | 5760 |
| Placida | 1083 | 968 | 267 | 142 | 55 | 56 | 157 | 0 | 2610 | 1566 |
| Bokeelia | 3544 | 3731 | 52 | 31 | 0 | 38 | 29 | 24 | 12154 | 11367 |
| Port Boca Grande | 39 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 382 | 66 |
| Captiva | 1033 | 1121 | 57 | 0 | 0 | 2 | 0 | 7 | 19907 | 10162 |
| Wulfert | 1392 | 1426 | 0 | 0 | 0 | 0 | 0 | 0 | 2749 | 1674 |
| Sanibel | 3067 | 2943 | 148 | 3 | 8 | 10 | 22 | 0 | 5296 | 3940 |
| Punta Gorda | 4310 | 2799 | 358 | 95 | 4 | 5 | 550 | 140 | 892 | 772 |
| Punta Gorda SE | 2821 | 3502 | 1081 | 255 | 0 | 0 | 424 | 0 | 4246 | 3562 |
| Matlacha | 4243 | 5821 | 1268 | 51 | 0 | 8 | 462 | 0 | 5780 | 4940 |
| Pine Island Center | 8937 | 11291 | 2324 | 358 | 515 | 303 | 709 | 197 | 11462 | 9684 |
| Fort Myers Beach | 6032 | 5955 | 775 | 362 | 2 | 3 | 767 | 747 | 3586 | 2626 |
| Fort Myers SW | 1936 | 1190 | 378 | 53 | 0 | 0 | 1384 | 341 | 1465 | 189 |
| Estero | 2769 | 3280 | 311 | 168 | 49 | 31 | 549 | 394 | 3917 | 1293 |
| TOTAL | 51524 | 56631 | 11206 | 2723 | 806 | 488 | 7251 | 3547 | 82959 | 58495 |
| Acreage Change | +5107 | | -8483 | | -318 | | -3704 | | -24464 | |
| Percent (%) Change | + 10% | | - 76% | | - 39% | | - 51% | | - 29% | |

8. SOUTHWEST FLORIDA OYSTER WORKING GROUP SUBCOMMITTEE UPDATE

The CHNEP Oyster Habitat Restoration Plan, funded by The Nature Conservancy (TNC) and developed with the help of the Southwest Florida Oyster Working Group, was adopted by the Management Conference in December 2012. The goal of the Plan is to enhance and restore self-sustaining oyster habitat and related ecosystem services in the estuaries and tidal rivers in the CHNEP area. Because there is little data on the historical distribution of oysters in CHNEP, the acreage of restoration is more appropriately characterized as a percentage of habitat likely to support sustainable oyster restoration. Based on results of the CHNEP Oyster Restoration Suitability Model that was conducted for the Plan and existing knowledge, the long term goal is to restore oysters to a range of 1,000 – 6,000 acres throughout the CHNEP area. To achieve the long term restoration goal, the Plan included 4 short term actions: a) map oyster habitats by type within the CHNEP estuaries by 2020; b) design, implement and monitor pilot oyster restoration projects in 50% of the CHNEP estuary strata by 2020; c) increase public awareness of the value of oyster habitats by including community stewardship components in each oyster restoration project; and d) assist partners in seeking funding opportunities to support oyster habitat restoration projects.

Several activities have since been initiated that complement the Plan's restoration objectives. A pilot oyster restoration project was initiated in the Peace River adjacent to the City of Punta Gorda in 2013 by TNC and partners. The site was identified in the Plan as 100% suitable for restoration and field visits verified that the likelihood of restoration success would be high. In addition, a state general permit for small scale oyster habitat restoration was developed by stakeholders statewide, including many in the Charlotte Harbor region, and adopted by the FDEP on October 1, 2013. In 2012 TNC, in partnership with FGCU and SCCF, responded to a call for proposals by the Southwest Florida NEP's for consideration of future RESTORE Act funding. The partners proposed to restore up to 20 acres of oyster habitat throughout the Charlotte Harbor region in areas identified as highly suitable in the Plan. The proposal was ranked high and is included in the NEP's Southwest Florida Regional Ecosystem Restoration Plan adopted on in March 2013.

To facilitate implementation of this and other oyster restoration projects throughout the CHNEP, it would be helpful to have a prioritized list of potential projects that includes suggested locations, acreage, methods and partners. The prioritized list can be used to seek funding and facilitate permitting. Discussions continue between restoration partners and regulatory agencies regarding oyster habitat restoration design, permitting and implementation. Oyster restoration permitting within the CHNEP estuaries is complex, primarily because a large part of the near shore estuarine areas most suitable for oyster restoration are also designated as Critical Habitat for the Endangered Smalltooth Sawfish.

In order to move this project forward, CHNEP and TNC have been co-hosting meetings of a Subcommittee of the Southwest Florida Oyster Working Group to develop a draft list of prioritized oyster restoration projects within the CHNEP. The results will be shared with the full Working Group for final consensus. To date, the Subcommittee has met 3 times: May 8, 2014, October 30, 2014 and January 14, 2015. The Subcommittee members began with the areas identified by as 80-100% suitable according to the Plan's Restoration Suitability Model and local knowledge and eliminated areas not suitable for oyster restoration. A list of about 40 areas that needed additional investigation were identified and ranked. Field visits were conducted by Subcommittee members in December and January to gather more detailed information on the 22 highest ranked sites. Subcommittee members uses consistent data sheet to collect basic relevant information. The results of the field visits for these and a few additional sites were compiled into an Excel table and re-ranked by the Subcommittee members at the January meeting. At the next Subcommittee meeting, scheduled for February 19, 2015, members will add acreage, methods and objectives to the highest ranked potential projects. The draft prioritized list will be presented to the full Southwest Florida Oyster Working Group at a meeting to be held in spring 2015.

Recommendation: No motion requested; for information and discussion only.

Attachments: None.

9. CALOOSAHATCHEE RIVER SAV TARGETS WORKING GROUP UPDATE

The TAC requested that CHNEP sponsor a workshop to begin establishing revised seagrass targets for the Caloosahatchee River. CHNEP hosted the Science Forum: Establishing Submerged Aquatic Vegetation (SAV) Targets for the Tidal Caloosahatchee River on December 8, 2014 in Alva at the Caloosahatchee Regional Park. The Science Forum included 10 presentations by regional scientists focusing on: sources of SAV data for Tidal Caloosahatchee River and Estuary, existing CHNEP SAV targets for the river and estuary and factors limiting SAV distribution and health in the river and estuary. During and following the presentations, members also provided comments on additional references, data and studies needed, factors limiting SAV distribution and health, potential SAV metrics and performance measures, potential SAV restoration goals and targets and next steps. Twenty-five participants attended the Science Forum.

The short term next steps identified by the Science Forum participants include:

- Add the research needs identified at the Forum to the CHNEP Research Needs Inventory.
- Develop and send a survey of potential Caloosahatchee River & Estuary SAV restoration goals, targets and metrics to CHNEP TAC members, scientific community and partners.
- Compile existing SAV data sources and monitoring locations.
- Convene a working group to identify gaps in SAV monitoring and mapping locations, parameters, methods and frequencies.
- Convene a working group to develop potential Caloosahatchee River and Estuary SAV goals, targets and metrics.
- Provide potential Caloosahatchee River and Estuary SAV goals, targets and metrics to the CHNEP Management Conference for consideration.

A summary of the meeting results will be presented.

Recommendation: No motion requested; for information and discussion only.

Attachments: CHNEP Science Forum Establishing SAV Targets for the Tidal Caloosahatchee River Agenda
CHNEP Science Forum: Establishing SAV Targets for the Tidal Caloosahatchee River Meeting Notes and References
PDFs of the References are available on the CHNEP FTP site (<ftp://ftp.ci.punta-gorda.fl.us> ; username [chnep](#); Password [BeachParty777](#); Folder [CaloosaRSAVTargetsForum 20141208](#))



CHNEP Science Forum:

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Establishing SAV Targets for the Tidal Caloosahatchee River

Monday December 8, 2014 - 9:30 am to 4:30 pm

Caloosahatchee Regional Park - Campground Pavilion "The Lodge"
19130 North River Road, Alva, FL 33920 – (239) 694-0398

Please RSVP for Forum & Picnic Lunch at <http://doodle.com/583mr3mpt2f4fdu3>

Purpose: The purpose of this Science Forum is to identify appropriate metrics & performance measures for establishing Submerged Aquatic Vegetation Restoration (SAV) targets for the Tidal Caloosahatchee River. The outcomes will be presented to the next full TAC in February 2015 for consideration.

REVISED AGENDA

9:15 am: Coffee & Networking

9:30 am: Welcome, Introductions & Purpose of Forum — Judy Ott, CHNEP

9:45 am: Data Sources for Tidal Caloosahatchee River SAV

- **1950s CHNEP & 1980s FWC SAV Mapping** — Judy Ott, CHNEP
- **1993 Caloosahatchee River SAV Mapping** — Allen Hoffacker, Consulting Ecologist
- **SFWMD SAV Monitoring & Mapping** — Peter Doering & Cassandra Thomas, SWFWMD
- **SCCF SAV Monitoring** — Eric Milbrandt & Rick Bartleson, SCCF
- **FDEP Transects** — Melynda Brown & Kirby Wolfe, FDEP
- **FGCU SAV Monitoring** — James Douglas, FGCU

12:00 am: Picnic Lunch provided at "The Lodge" (suggested donation \$5). *Please RSVP at* <http://doodle.com/583mr3mpt2f4fdu3>

12:30 pm: Existing CHNEP SAV Targets for Tidal Caloosahatchee River — Judy Ott, CHNEP

1:00 pm: Factors Limiting Tidal Caloosahatchee River SAV

- **Herbivory** — Dave Ceilley, Johnson Engineering
- **Water Clarity, Color, Chlorophyll & Turbidity** — Kellie Dixon, Mote

1:45 pm: General SAV Metrics & Performance Measures with Pros & Cons — Forum Participants

- **Deep Edge via Transects**
- **Acreage & Location via Aerials**
- **Acreage & Location via Field Monitoring**
- **Diversity & Abundance via Field Monitoring**
- **Others**

2:30 pm: Quick Break

2:45 pm: Potential SAV Metrics & Measures for Tidal Caloosahatchee River — Forum Participants

3:30 pm: Missing Data & Potential Sources — Forum Participants

4:00 pm: Next Steps & Responsibilities — Forum Participants

4:20 pm: Summary of Forum Conclusions & Next Steps — Judy Ott, CHNEP

4:00 pm: Adjourn

THIS MEETING IS OPEN TO THE PUBLIC

Two or more members of the Everglades West and Caloosahatchee Basin Working Groups, Peace River Basin Management Advisory Committee, Southwest Florida Regional Planning Council may be in attendance and may discuss matters that could come before the respective body.



Establishing SAV Targets for the Tidal Caloosahatchee River

Monday December 8, 2014 - 9:30 am to 4:30 pm

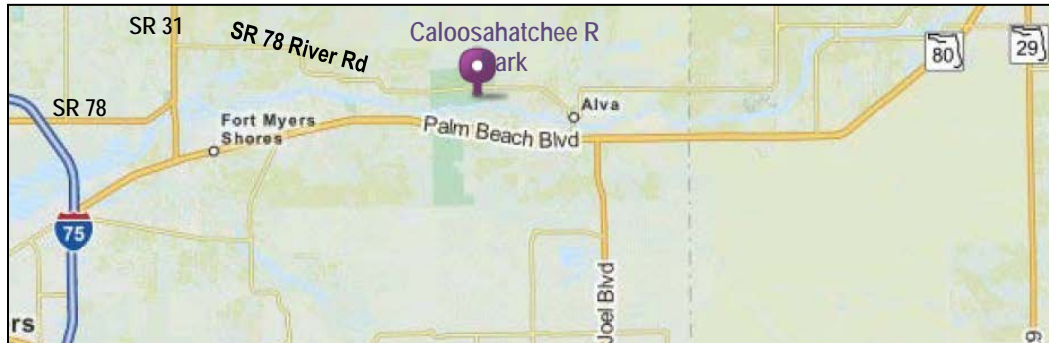
Caloosahatchee Regional Park - Campground Pavilion “The Lodge”

19130 North River Road, Alva, FL 33920 – (239) 694-0398

Please RSVP for Forum & Picnic Lunch at <http://doodle.com/583mr3mpt2f4fdu3>

DIRECTIONS TO CALOOSAHAATCHEE RIVER REGIONAL PARK CAMPGROUND

Note: These are simplified directions. For more detailed directions, please consult a mapping program.



From the North & South via I-75:

- Take I-75 to Exit 143/SR-78/Bayshore Road and turn east on SR-78.
- Follow SR-78 east 2.7 miles to SR31 and turn north (left) on SR-78/SR-31.
- Take SR-78/SR31 north 2.7 miles SR-78/River Road and turn east (right) on SR-78/River Road.
- Take SR-78/River Road east 7.7 miles, past the first 2 entrances for the Caloosahatchee Regional Park, to the Park Campground entrance on right.
- Take the entrance drive into the parking lot, pay the parking fee and walk, following the signs, 0.1 miles to “The Lodge” (less than 5 minutes).

From the East & West via SR-80:

- Take SR-80 to Alva and turn north on Broadway Street.
- Take Broadway Street north 0.4 miles to SR-78/River Road and turn west (left).
- Follow SR-78/River Road west 2.4 miles to Caloosahatchee Regional Park Campground entrance on left.
- Take the entrance drive into the parking lot, pay the parking fee & walk, following the signs, 0.1 miles to “The Lodge” (less than 5 minutes).



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Please Note:

- PDFs of the Presentations and Resources from the Science Forum are available on the CHNEP Website (www.chnep.org) & FTP Site (Internet address <ftp://ftp.ci.punta-gorda.fl.us>; User name [chnep](#); Password [BeachParty777](#); Folder [CaloosaR_SAVTargets_Forum_2014_12_08](#)).
- Comments provided by Science Forum participants on the flip-charts during the Science Forum are summarized following the Presentations below.
- The Resources provided at the Science Forum are attached.

Attendees:

Chris Anastasiou, SWFWMD
Rick Bartleson, SCCF
Melynda Brown, FDEP
David Ceilley, Johnson Engineering
Peter Doering, SFWMD
Don Duke, FGCU
Siobhan Gorham, FWC
Keith Kibbey, Lee County
Julie Neurohr, FDEP
Cynthia Ovdenk, USACE
Pete Quasius, Audubon
Cassandra Thomas, SFWMD
Kirby Wolfe, FDEP

Jim Anderson, Sea & Shoreline
Lisa Beever, CHNEP
Bill Byle, Charlotte County
Marisa Carrozzo, Conservancy of SW FL
James Douglass, FGCU
James Evans, City of Sanibel
Allen Hoffacker, Consulting Ecologist
Eric Milbrandt, SCCF
Judy Ott, CHNEP
Harry Phillips, Cape Coral
Dianne Rosensweig, Scheda Ecological
Rae Anne Wessel, SCCF

1. Welcome, Introductions & Purpose of Science Forum – Judy Ott, CHNEP

Judy Ott called the Science Forum to order at 9:30 am & participants introduced themselves.

Ms. Ott reviewed the purpose of the Science Forum: To identify appropriate metrics & performance measures for establishing Submerged Aquatic Vegetation Restoration (SAV) targets for the Tidal Caloosahatchee River. The outcomes will be presented to the next full TAC in February 2015 for consideration.

2. Data Sources for Tidal Caloosahatchee River SAV

The morning session focused on existing SAV data sources for the Tidal Caloosahatchee River & included 6 presentations.

Tidal Caloosahatchee Seagrass Mapping 1950-2008 — Judy Ott, CHNEP

- CHNEP includes 14 estuary regions from Dona/Roberts Bays south to Estero Bay.
- CHNEP contracted with Photo Science to create historical maps of seagrass, oyster, intertidal unvegetated habitats throughout the CHNEP estuary segments with 0.5 acre minimum mapping units, based on FLUCCS codes, including the Caloosahatchee up to the US 41 bridge, with ± 215 acres of SAV in Tidal Caloosahatchee & 3,245 acres of SAV in San Carlos Bay.
- CHNEP also has FWRI 1982-1990 SAV aerial photos which showed ± 600 acres of SAV in Tidal Caloosahatchee & $\pm 5,980$ acres SAV in San Carlos Bay.
- CHNEP has Water Management District (WMD) 1999 SAV aerial photos which showed ± 2 acres SAV in Tidal Caloosahatchee & $\pm 3,715$ acres SAV in San Carlos Bay.
- CHNEP has WMD 2008 SAV aerial photos which showed ± 300 acres SAV in Tidal Caloosahatchee & $\pm 2,470$ acres SAV in San Carlos Bay.
- CHNEP has FWRI 2010 SAV aerial photos which show and undetermined number of acres of SAV in Tidal Caloosahatchee & San Carlos Bay.
- Sea level rise from 1965 – 2008 for the Fort Myers NOAA tide station was ± 2.4 cm ($\pm 1''$)/decade sea level rise.
- Sea level rise from 1999 – 2008 at FDEP seagrass transects in CHNEP was ± 4.0 cm/decade.



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- Analysis of seagrass location change from 1950-1999 showed a small net decline & seagrasses migrated landward at both the deep & shoreward edges of seagrass beds in the most preserved areas of Charlotte Harbor.
- Analysis of seagrass location change from 1999 – 2008 showed a small net increase in seagrass acres & seagrasses expanded “up-river” in the Tidal Caloosahatchee River.
- Seagrass management considerations related to sea level rise include: a) continue monitoring & mapping SAV; b) continues using water quality targets based on seagrass light requirements for each estuary; c) re-evaluate contributions of water clarity & depth changes to water quality targets regularly; d) maintain & restore natural shorelines to allow landward migration of SAV with sea level rise; e) reduce pollutant loads to increase water clarity to maintain seagrass deep edge as sea level rise & development increase; & f) restore natural hydrology to accommodate changing rainfall patterns.

Tidal Caloosahatchee River SAV Mapping 1993 — Allen Hoffacker, Consulting Ecologist

- Field observations of Tidal Caloosahatchee SAV were made by Allen Hoffacker for Dexter Bender & Associates & recently transposed to GIS coverage by Tim Lieberman, SFWMD.
- 1993 field observations showed the presence of 4 species of SAV downstream from Franklin lock, including *Halodule*, *Thalassia*, *Ruppia* & *Vallisneria*.
- 1993 SAV density classifications in the Tidal Caloosahatchee River included scattered, moderate & dense.
- 1993 SAV acres in Tidal Caloosahatchee were estimated to be >2,012 acres.

SAV Research & Monitoring in the Caloosahatchee River & Estuary — Peter Doering, SFWMD

- SFWMD SAV monitoring included manual in-water, hydroacoustic & aerial mapping.
- SFWMD SAV research included laboratory mesocosms, field & modeling.
- Caloosahatchee manual in-water SAV monitoring included: SAV 1986-1989 & 1994-1995; Tape grass 1998 – present; SAV 2005 – present; Tape grass & SAV are now part of CERP’s RECOVER Monitoring & Assessment Program.
- SFWMD monitors SAV at 9 locations from Beautiful Island to San Carlos Bay to Pine Island Sound.
- SAV monitor methods changed: sampling locations included random quadrats, quadrats on transects & quadrats in polygons; parameters included “old school” shoot counts, blade counts, blade lengths & biomass vs. “new school” % occurrence, visual % cover, canopy height & visual epiphyte density.
- A summary table of SAV monitoring locations & methods X year was provided.
- Hydro acoustic monitoring from 1996 – 2009 included 8 river reaches, 10 transects/reach, 3 times per year.
- Aerial photography & mapping was conducted by SFWMD in 1999, 2003, 2004, 2006, 2008 & 2014, but the Tidal Caloosahatchee was too dark with tannins for the aerial photography to be comprehensive.
- SAV research studies using were conducted by the Gumbo Limbo Lab for salinity tolerance (of *Vallisneria*, *Halodule*, *Thalassia* & *Syringodium*) & salinity/light interactions (*Vallisneria*) & by SCCF Lab for salinity/light/temperature interactions (*Vallisneria*).
- SAV research studies using field research were conducted on *Vallisneria* for transplanting (HBOI 1996-1997) & restoration pilot plantings (Conservancy of SWF 2003; SCCF 2008; FGCU 2011, 2012; Johnson Engineering 2014-2015).
- SAV Modeling was conducted for *Vallisneria* using the Hunt Model (shoots/sq m) & Buzzelli Model (grams C/sq m).
- Hunt Model for *Vallisneria* showed salinity is an important limiting factor in the upper Caloosahatchee estuary, with instance of light being important as well & more work is needed on temperature.
- A Color Dissolved Organic Matter (CDOM) was recently published by SFWMD evaluating the mixing behavior of CDOM & its potential ecological implication in the Caloosahatchee River Estuary; results for 11 stations & 3 parameters (color, *chl a* & turbidity) were provided.



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SCCF SAV Monitoring — Eric Milbrandt & Rick Bartleson, SCCF

- Before-After-Control-Impact (BACI) designs are often used to monitor potential environmental impacts.
- BACI designs are good for evaluating large & permanent potential changes after impact, protection against disasters & changes in mean conditions.
- BACI designs are poor for evaluating small & gradual changes, long term conditions & changes in variability.
- BACI designs monitor differential change between before/after/control/impact.
- SCCF conducted BACI monitoring at Blind Pass in Pine Island Sound before & after pass dredging of water quality, seagrass & fisheries.
- SCCF RECON water quality monitoring has control/impact stations at 13 sites from lower Caloosahatchee to San Carlos Bay to Pine Island Sound.
- SAV monitoring methods summary includes: measure shoot densities & % cover in parallel & perpendicular transects at impact & control sites; transects are measured at the beginning of the wet season & after river flows of 30 day average >1,500 cfs at S79.
- Monitoring results for salinity from 6/11 – 12/14 were provided at 3 locations.
- Monitoring results were provided for *Halodule* & *Thalassia* & *Syringodium* mean shoot density from 6/11 – 12/14, pre- & post- freshwater releases at S79, for 6 control & impact sites.
- Summary of analysis for the BACI analyses for 2013 data pre- & post- freshwater releases for *Halodule* or *Syringodium* densities showed no significant but for *Thalassia* showed greater densities pre- freshwater releases.
- Summary of regional data includes: aerial seagrass acreage estimates & status & trends & estimate of change – SAV in Pine Island Sound & San Carlos Bay have a small increase but declines in water quality & increases in prop scarring; with slight decreased density of *Thalassia* & *Halodule*.
- Conclusions of data show an initial rapid decline of SAV at sites near Shell Point & in San Carlos Bay in all species at onset of high flows; in addition – at control sites reduced leaf & shoot losses related to sun angle & day length also occurred.
- Annual discharges at S79 for 2014 ($\pm 20,000$ million cubic ft) were less than all years since 2000 except 2007.
- Wet season discharges at S79 for 2013 ($\pm 85,000$ million cubic ft) were greater than all years since 2007.
- Salinity contours for July 2013 showed <13 ppt in southern Matlacha Pass, San Carlos Bay & southern Pine Island Sound.
- SCCF RECON 2013 salinity data showed lower salinities in the lower Caloosahatchee Estuary in 2013.
- RECON 2014 & 2015 data will tell us how severe the low 2013 salinities were & whether the SAV will recover.

FDEP Caloosahatchee River Seagrass Monitoring Overview — Melynda Brown, FDEP

- FDEP monitors SAV at 6 sites in Tidal Caloosahatchee, San Carlos Bay & southern Matlacha Pass.
- Three sites in the Caloosahatchee River have been monitored consistently from 2007 – present; monitored 4 times a year, shore to deep edge, at beginning, end & repeated intermediate stations.
- Seagrass monitoring data collection uses the Braun Blanquet Abundance categories & includes: water depth, sediment type, SAV species composition & abundance, SAV blade lengths, total abundance, shoot counts & epiphyte type/density.
- Seven species of SAV were observed (*Caulerpa*, *Halodule*, *Halophila*, *Hydrilla*, *Ruppia*, *Thalassia* & *Vallisneria*), with *Halodule* comprising over 50% of the occurrences.
- SAV density (shoots/sq m) & deep edge varied by site, by year.
- In addition, there is older SAV data going back to 2000 at 17 sites in the Tidal Caloosahatchee, San Carlos Bay, southern Matlacha Pass & southern Pine Island Sound.
- A comparison of mean total abundance between rainy & dry season from 2000 – 2014 was provided.
- In addition, the FDEP Charlotte Harbor Aquatic Preserves monitors SAV at 50 sites annually since 1999 using similar methods & the results are published in the 2011 Watershed Summit Proceedings.



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SFWMD “Patch Scale” SAV Monitoring in the Caloosahatchee Estuary 1998 - 2014 — James Douglas, FGCU

- More information can be found in the Comprehensive Everglades Restoration Program (CERP) Restoration & Coordination Verification (RECOVER) System Status Report (http://www.evergladesplan.org/pm/ssr_2014/ssr_main_2014.aspx) & Caloosahatchee River Estuary SAV Annual Report for 2014.
- “Patch Scale” SAV Monitoring in the Caloosahatchee Estuary – Why: SAV benefits humans & environment; is useful as an indicator of environmental health & human impacts; establish re-CERP reference conditions; determine SAV status & trends; detect unexpected responses of ecosystem to changes in stressors from CERP activities; support scientific investigations to increase understanding of ecosystems & cause/effect & unanticipated results.
- Where – 8 SAV beds in Caloosahatchee Estuary along salinity gradient (*Vallisneria/Ruppia* above Ft Myers, *Halodule* near Iona Cove, *Halodule/Thalassia* in San Carlos Bay), plus water quality monitoring in the same area.
- When – 1998 – 2003 in upper estuary only & 2004 – 2014 in entire estuary.
- How – 20-30 sq m quadrats at each site, plus “quadzilla” 9 sq m quadrat at site 1 for 2013/2014 looking for *Vallisneria*.
- At each site, before 2009 quadrats were arranged in X pattern & starting in 2010 quadrats randomly placed in polygons.
- Collect shoots/sq m, grid counts, % cover & canopy height (only parameter collected every year since 1998).
- What has been learned – 1998-2014 is all “pre-CERP” but results, weather, climate, water management actions & other factors varied widely during the sampling period.
- From 1998-2014 monthly mean freshwater flows at S79 were often above or below the recommended envelope of 450-2,800 cfs.
- Salinity often exceed the *Vallisneria* tolerance of 10 psu in the upper estuary, except 2014 wasn’t too bad.
- Light penetration targets for SAV ($\pm 25\%$ of Secchi depth) aren’t being met in upper & lower Caloosahatchee Estuary.
- In upper estuary, *Vallisneria* decimated by repeated high-salinity events with long lags in recovery
- In middle estuary, little SAV found from 2002-2006 high flows but 2007 drought brought back sparse & seasonal *Halodule*.
- In lower estuary, *Thalassia* & *Halodule* present since data collected in 2004 in moderate & variable cover that shifts to *Halodule* after high flow events.
- Status & Trends – Upper estuary SAV poor with little or no recovery trend (*Ruppia* & *Vallisneria* scarce, sparse, short); Middle estuary SAV poor to fair with seasonal ups & downs since 2007 re-establishment; Lower estuary SAV fair & persistent with signs of stress & high seasonal & interannual variability in % cover & composition.
- Data used for status 7 trends – dominant species plots & representative underwater photography.
- It is too early to detect responses of SAV to CERP activities (none implemented yet) but SAV behavior raises other ecosystem questions, most importantly – what do we still need to figure out?

Seagrasses in Matlacha Pass: Ecological Baseline Survey of Cape Coral’s North Spreader Canal — James Douglas, FGCU

- Visual site comparisons for July/Aug. to Sept./Oct.
- 16 sites (1 hectare with 25 points) via 1 sq m quadrats (plus some 9 sq m quadrats) for % cover, SAV species & macroalgae monitored every 2 months starting July 2014.
- Species observed included: *Syringodium*, *Thalassia*, *Halodule*, *Ruppia* & macroalgae.
- Data was presented for each site for July/Aug. & Sept./Oct. sampling events for *Halodule*, *Thalassia*, *Syringodium* & macroalgae.



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- Summary: a) SAV are widespread but vary greatly in species composition, density, epiphytes & macroalgae abundance; b) SAV health seems generally better further north in Matlacha Pass; c) trend in species composition changes from north to south with a decrease in *Syringodium* & then *Thalassia*, with *Halodule* dominate south of Matlacha bridge; d) open water flats generally more dense SAV & more *Thalassia*; e) embayments had less, more variable SAV, dominated by *Halodule*; f) epiphytes & macroalgae found in both open water & embayment sites but only fully displaced SAV in embayments; g) comparison of SAV at control sites vs. spreader waterway breach sites showed high variation; h) *Syringodium* was only found at the northern control site; i) some control sites in embayments near shore near Matlacha were in poor condition, indicating degraded water quality in areas not directly related to the spreader canal.

3. Lunch Recess

The Science Forum recessed for lunch on site from 12:30 pm – 1:00 pm.

4. Existing CHNEP SAV Targets — Judy Ott, CHNEP

- SAV distribution in CHNEP varies by estuary, year, season & species; is the primary submerged habitat; comprises $\pm 59,00$ acres & is in estuarine waters < 2m deep.
- SAV declined over the long term (1950-1999) but have been relatively stable since 1982.
- Five species of SAV in CHNEP (*Halodule*, *Thalassia*, *Syringodium*, *Ruppia*, *Halophila* & *Vallisneria*).
- SAV targets are important because SAV is: widely distributed, quantifiable, a good environmental indicator, responsive to changes in water clarity, quantity, hydrology & salinity & can be used to estimate needed pollutant load reductions & effectiveness of management activities.
- There is much SAV & water quality mapping & monitoring data available throughout CHNEP estuaries (aerial photos, SAV transects, CCHMN random sampling water quality, CHEVWQMN fixed water quality).
- Original CHNEP seagrass/water quality targets were developed in 2005 based on deep edge of seagrasses & estimated 25% SAV at deep edge & optical model of light attenuation (depending on CDOM, turbidity & chl).
- Revised CHNEP seagrass/water quality targets were developed in 2011 based on seagrass acreage persistence & light attenuation cumulative distribution frequency & associated chl, TP & TN targets needed to maintain & improve SAV.
- Revised targets also included a scoring system to estimate annual changes in conditions as stable, caution or degrading.
- Next steps for CHNEP SAV targets are: a) re-assess historic & current SAV conditions in tidal rivers & refine tidal river SAV targets; b) identify & implement pilot SAV restoration projects; c) continue seagrass monitoring & mapping; d) evaluate response of SAV to resource management actions regularly; e) implement projects to reduce pollutant loadings & restore natural hydrology; f) maintain & restore natural shorelines & hydrology to enhance SAV adaptation to sea level rise & climate change.

5. Factors Limiting Tidal Caloosahatchee River SAV

The next session focused on factors potentially limiting SAV distribution & included 2 presentations.

Tape Grass, *Vallisneria*, Restoration in the Freshwater Caloosahatchee River — Dave Ceille, Johnson Engineering

- Ecosystem services of *Vallisneria* include habitat for fish & invertebrates, forage for manatees, freshwater turtles, fish waterfowl, crustaceans & snails, & stabilization of sediments, wave attenuations, improvement of water clarity & removal of nutrients.
- *Vallisneria* is found in north FL springs & rivers & south FL upper estuaries.
- *Vallisneria* is a good environmental indicator because: a) it tolerates oligohaline (< 10 ppt) conditions, natural fluctuations in water chemistry, sediments & nutrients; b) is important historically & is a Valued Ecosystem Component in the Caloosahatchee Ecosystem; c) once covered >1,000 acres in upper



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Caloosahatchee Estuary (Whiskey Cr to I-75; 1993); d) is sensitive to anthropogenic disturbances & extreme unnatural salinity regimes; e) can respond quickly to restored conditions.

- Factors controlling *Vallisneria* growth & distribution include: a) salinity levels & duration of exposure; b) water clarity, light attenuation & color; c) sediment type, nutrient concentrations & genetic strains; d) herbivory.
- SAV distribution in Caloosahatchee Estuary totaled >2,012 acres.
- From 1998 – 2013 both the salinity & the portion of the upper estuary supporting *Vallisneria* varied widely, with *Vallisneria* distribution peaking in 1998/1999 before falling to 0% in 2000, with only small recovery from 2004-2007 before falling to 0% again.
- Previous *Vallisneria* restoration efforts included circular herbivore exclosure deployment in Tidal Caloosahatchee in 2008 & 2009 & in Lake Trafford in 2008.
- Exclosure plots in Tidal Caloosahatchee (2009-2011) & plantings in Lake Trafford (2008-2012) showed excellent *Vallisneria* recovery.
- SFWMD & FGCU conducted “small exclosure” *Vallisneria* restoration in Caloosahatchee River upstream from Franklin Locks (2011-2012) to: a) establish *Vallisneria* seed stock in upper Caloosahatchee; b) evaluate planting density; c) evaluate 2 local genetic strains for growth in Caloosahatchee; d) compare restoration in a protected oxbow with high organics to an open sandy shoreline.
- Invasive apple snail was a heavy herbivore during the study.
- “Large exclosures” were added in 2012 at 4 new sites upstream from Franklin Locks.
- Salinity varied from 0.3 ppt – 0.5 ppt; Secchi varied from 0.6 m – 1.6 m; mean % cover varied from 935-100%; shoots/ sq m varied from 23 – 119 shoots/sq m.
- Study conclusions included: a) herbivory is controlling factor both upstream & downstream from Franklin Locks; b) mesh exclosures to protect *Vallisneria* from herbivory were critical to restoration success; c) exclosure cages (small & large) allowed for seed production; d) *Vallisneria* plants outside exclosures were grazed & short with no flowering or seed pods; e) growth habits of 2 strains were different (larger, fewer plants vs. smaller, more numerous plants)
- Problems encountered during the study included: a) damage to exclosures from vandalism & extreme waves; b) damage to exclosures from large wakes (>4') from large vessels; c) herbivory by non-native apple snails; d) damage to cages & herbivory by manatees & freshwater turtles.

A Spectral Optical Model & an Updated Water Clarity Reporting Tool for Charlotte Harbor Seagrasses
– presentation prepared by Kellie Dixon, Mote & presented by Judy Ott, CHNEP

- Seagrass protection depends on water clarity; water clarity depends on light attenuation; high color in CHNEP means a spectral model of light attenuation is needed; can use modeled light attenuation to evaluate water clarity trends.
- Field measurements of light attenuation measure all wavelengths of light together.
- Spectral model uses data for light attenuation for water, color, *chl*, turbidity at each wavelength (400 nm – 700 nm).
- Modeled light attenuation was compared to field-measured light attenuation & calibrated using data from throughout the CHNEP estuaries - resulting in an extremely close fit between modeled and observed data.
- Optical model allows water clarity to be calculated from measured color, *chl* & turbidity data & is good for measuring water clarity trends over time & responses to changes in watershed management activities.
- Modeled water clarity values for a reference period (2003-2007) were compared to seagrass targets for each estuary segment.
- Modeled values were used to determine if water quality trends are adequate to meet seagrass protection or restoration targets for each estuary.
- A “scoring” system was developed to convey trends in water clarity relative to seagrass protection targets showing improving, caution or declining conditions; the scoring system was slightly more strict for estuaries with seagrass restoration vs. protection targets to allow water clarity improvements needed for seagrass recovery.



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- The optical model values for the tidal Caloosahatchee River showed: a) as salinity decreases, color increases & % light available for seagrass growth decreases; b) in the upper estuary, a decrease in salinity from 15 ppt to 5 ppt resulted in a decrease in % photosynthetically active radiation (PAR) from 13% to 7%; c) in the lower estuary, a decrease in salinity from 25 ppt to 15 ppt resulted in a decrease in % PAR from 19% to 14%.
- The next steps include: a) link the water clarity scoring & trends to measured seagrass performance; b) continue water clarity & quality monitoring; c) review model performance with future data.

6. Forum Participant Comments from Flip Charts — Forum Participants

Additional thoughts identified by Forum participants during the meeting on flip charts are summarized by topic below, in no order of importance.

Additional References, Data & Studies Needed:

- Studies of light attenuation effects of epiphytes & macrophytes on SAV.
- Studies of successful SAV restoration projects.
- Related studies known to local scientific community, including John Cassani.
- Studies of ecosystem services & fish habitat provided by SAV; contact Brad Robbins.
- Economic assessments of loss of SAV.
- Color (CDOM) & salinity data at Fort Myers since 1992.
- Bathymetry contours for Caloosahatchee River & Estuary.
- Bottom sediment conditions for the Caloosahatchee River & Estuary.
- Exclusion cages to protect SAV across a depth gradient of shallow-to-deep to determine deep edge of SAV growth in different zones of the Caloosahatchee River & Estuary.
- Identify refuge habitats for *Vallisneria*.
- Identify factors limit SAV growth & recovery.
- Evaluate economic impacts of loss of SAV.
- Location of chlorophyll maximum; conduct transects of chlorophyll concentrations across the river.
- Relationship of temperature to salinity to color under natural river flows vs. altered flows.
- Causes of lack of SAV recovery in upper & middle Caloosahatchee.
- The impacts of how SAV loss in the Caloosahatchee River & Estuary affect species of special concern &/or economic value &/or charisma.
- Minimum threshold for productivity (i.e.: shoots/m sq or geographic distribution).
- Definition of productivity based on ecosystem services, habitat, sediment, water quality.
- Inclusion of epiphytes with light limiting factors.
- Relationship of *Lyngbia* to light availability; *Lyngbia* is common worldwide as in indicator of disturbance.
- Better understanding of hysteresis – the lag behind causes & effects of SAV loss & recovery.
- Definition of what a healthy SAV system is in the Caloosahatchee River & Estuary.
- Minimum habitat conditions (sedimentation, nitrogen reduction, fish/invertebrate abundance) needed to provide ecosystem services.
- Better understanding of the relationship of color to residence time & how it affects SAV health.
- Better understanding of the relationship between color (CDOM) & salinity & flow & the difference the source of the water (river, tributaries, groundwater, S77 vs. S79) makes.
- Better understanding of how tidal bore will be affected by sea level rise, especially considering the restrictions on tidal flow cause by S70.

Factors Limiting SAV Distribution & Health:

- Water Clarity, amount of light & quality of light.
- Sediment movement.
- Extreme salinity changes.
- Herbivory.
- Seawalls in middle Caloosahatchee & wake refraction.



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Potential SAV Metrics & Performance Measures for the Tidal Caloosahatchee River:

- 1993 Caloosahatchee SAV survey results overlaid on bathymetry contours.
- Set an MFL to protect *Vallisneria* upstream of US 41; suggest 600 acres; based on a 30 day moving average of 10 ppt salinity at Fort Myers.
- Include consideration of variability – seasonal, annual, interannual – with changes in water flow & effects of temperature, salinity & color on SAV recovery.
- Performance measures need to be independent of CERP implementation.
- Measure response to modeled vs. real flows & conditions.
- Require monitoring.
- Need to consider duration & frequency of low & high flow events as they cause extreme salinity events.
- Consider economic return for cost/benefit of restoration.
- SAV metrics should include: % cover, canopy height, acres, biomass.
- Use existing monitoring sites to evaluate BACI (before/after/control/impact) response.
- Use acres in productive condition as maintained by a number of factors (flow, color, salinity, etc.); measure as acres in 50-75% cover of SAV.
- Consider acres of SAV persistent over seasonal variation; acres with % cover maintained for a specific time & self-sustain for a specific time.
- Include above & below ground biomass (i.e. leaf & root growth/unit area/time).
- Consider presence/absence in % of suitable habitat.
- Consider habitat volume; define volume of specific salinity zone suitable for specific species (i.e. volume of low salinity zone suitable for *Vallisneria*).
- Measure SAV distribution & density by salinity zone.

Potential SAV Restoration Targets & Goals:

- The goal is to restore a highly managed system to a more natural, sustainable system.
- Use 1993 SAV distribution, acreage & species composition in Caloosahatchee River & Estuary as a Vision.
- Set a target as 50% of the 1993 distribution, acreage & species composition.
- Use the maximum depth of SAV growth & overlay it with bathymetry to determine the maximum area of SAV & set the target as some % of the maximum area.
- Identify the ideal SAV habitat by zone & establish acres with 50% of SAV.
- Restore sufficient acreage & locations of *Vallisneria* to be sustainable under heavy grazing by herbivores, including the manatee population that travels between the Orange River & San Carlos Bay.
- A minimum of 600 acres of fully functioning & seeding *Vallisneria*, as referenced in the MFL.
- Develop targets for the lower Caloosahatchee River based on the 1993 map & adopted SAV targets for San Carlos Bay.
- 1993 SAV distribution overlaid on 2.5 foot depth contour.
- 1960s *Vallisneria* distribution in the upper river.
- 600 acres of *Vallisneria* upstream from Beautiful Island.
- Based on monitoring, maintain appropriate species zones with special considerations of limiting factors.
- Manage tributaries as seed source, especially for *Vallisneria*.
- Based on the Vision, identify an envelope of salinity zones; revisit salinity maps during the wet & dry seasons.
- Base targets on productive SAV, not just presence.
- Include consideration of ecosystem services & fish habitat provided by SAV.
- Need defined geographic scopes & zones by species based on salinity values; suggest 600 acres of *Vallisneria* between Fort Myers & Beautiful Island.
- Use MFL to define salinity & SAV species zones.
- Include different SAV targets for upper (oligohaline), middle (mesohaline) & lower (euryhaline) zones of the Caloosahatchee River.
- Need to set targets for the upper river based on low flow conditions & in the lower river based on high flow conditions.



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- Could use *Vallisneria* in the upper river & oysters in the lower river as indicator species & set targets accordingly.
- Define how many acres of productive SAV habitat are needed in each zone.
- Need targets based on the minimum geographic distribution of species, minimum species density.
- Targets need to consider resiliency plus acres plus density.
- Targets need to reflect optimal & minimum conditions.
- Need targets for both east (upstream) & west (downstream) of US 41.
- Need to restore adequate acreage & quality of SAV to provide sustainable seed source.
- Base target on modeled acres in different zones based on a 30 day moving average salinity of 10 ppt salinity at Fort Myers & bathymetry & compare this to the 1993 SAV map.
- Need to restore sheet flow & natural surface hydrology & surface/ground water connections.
- Implement SAV restoration targets in 2 stages: restoration of SAV acres & restoration of flows to provide 10 ppt salinity in Fort Myers.
- Will need active SAV restoration (i.e. planting & herbivore exclusion) to augment natural recruitment & recovery.
- Set *Halodule* restoration targets in the lower river & *Vallisneria* restoration targets in the upper river.

Miscellaneous Thoughts:

- 1999 was the last year *Vallisneria* was observed to flower & was followed in 2001 by extremely large water releases through S79, then a couple of years of drought, so the *Vallisneria* wasn't able to recover.
- Stabilize river flows to reduce extreme flow events & return salinity regime to more natural conditions to support SAV recovery & restoration.
- Require restoration monitoring.
- Gradually modify the temperature of the discharges from the FPL plant in the Orange River to redistribute manatees & reduce herbivory.
- 40 acres of SAV at 10% grazing/day by manatees would support 400 manatees.
- As algae populations increase, SAV decreases, turbidity increases & water clarity decreases.
- S79 is 12 miles downstream from the tidal influence in the river before dredging.
- Need to maintain oligohaline conditions in upper river to sustain full range of salinity gradient habitats downstream.
- Need to provide a seed source for *Vallisneria*.
- At high flows (2,000 cfs) salinity is 6 ppt at Iona; need to set mean monthly flows at S79 to provide 10 ppt at Fort Myers & 10-30 ppt at Cape Coral.
- Need to consider optimal flows in addition of MFL & minimum flows.

Short & Long Term Next Steps:

- Compile existing SAV, water quality & water quantity monitoring sites & data for the Caloosahatchee River & Estuary onto 1 map & share with scientific community.
- Coordinate SAV & related water quality/quantity monitoring programs within the Caloosahatchee River & Estuary to ensure comprehensive coverage, continuity & longevity.
- Identify gaps in SAV, water quality & water quantity monitoring site geographical distribution & data.
- Work with partners to fill gaps in SAV, water quality & water quantity monitoring.
- Implement pilot & large scale SAV restoration projects in the Caloosahatchee River & Estuary, focusing on locations where the restoration is most likely to succeed.
- Celebrate successes in restoring SAV & water quality & water quantity in the Caloosahatchee River & Estuary.
- Estimate potential impacts of climate change, sea level rise & changes in rainfall patterns on flows, discharges & SAV.
- Quantify light attenuation effects of epiphytes & macrophytes on SAV distribution, abundance & species composition.



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- Compile additional scientific references about light attenuation effects of epiphytes & macrophytes on SAV & include in bibliography.
- Compile additional studies of successful SAV restoration projects, add them to the bibliography & share with the scientific community.
- Initiate a survey of scientific community to solicit ideas for SAV target restoration locations & metrics in the Caloosahatchee River & Estuary.
- Determine deep edge of *Vallisneria* growth in the Caloosahatchee River using exclusion cages & other methods.
- Conduct a follow-up CDOM (color dissolved organic matter) workshop to share knowledge learned since the previous CDOM workshop in 2007.
- Map existing SAV in the Caloosahatchee River & Estuary, including tributaries using scientifically sound methods.
- Identify policy & management changes needed to meet Minimum Flows & Levels (MFLs) & maximum flows for the Caloosahatchee River to meet SAV restoration needs.
- Seek additional local, state, federal & non-profit funding to implement SAV restoration in the Caloosahatchee River & Estuary.
- Up-date the CHNEP Water Quality Targets report to incorporate up-dated SAV Targets for the Caloosahatchee River & Estuary.
- Investigate solutions for reducing herbivory on SAV in the Caloosahatchee River & Estuary to a level that will support SAV recovery & restoration.
- Determine the suitability of planting *Vallisneria* in stormwater treatment areas.
- Evaluate groundwater trends & surface/groundwater interactions in the Caloosahatchee River & Estuary as it relates to SAV recovery & restoration.
- Investigate alternate SAV monitoring methods.
- Add ideas from this Tidal Caloosahatchee River SAV Targets Science Forum to the CHNEP Research Needs Inventory.

7. Short Term Next Steps Based on Forum Discussions — Judy Ott, CHNEP

- Add research needs identified at the Forum to CHNEP Research Needs Inventory.
- Develop & send survey of potential Caloosahatchee River & Estuary SAV restoration goals, targets & metrics to CHNEP TAC members, scientific community & partners.
- Compile existing SAV data sources.
- Convene working group to identify gaps in SAV monitoring & mapping locations, parameters, methods & frequencies.
- Convene working group to develop potential Caloosahatchee River & Estuary SAV goals, targets & metrics.
- Provide potential Caloosahatchee River & Estuary SAV goals, targets & metrics to CHNEP Management Conference for consideration.

8. Adjourn — Judy Ott, CHNEP

Ms. Ott adjourned the Science Forum at 4:30 pm.



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**SOME RELEVANT RESOURCES
ADDITIONAL RESOURCES ADDED BELOW**

Please Note: PDFs of these resources that are publicly available are saved on the CHNEP Website (www.chnep.org), Water Atlas (<http://www.chnep.wateratlas.usf.edu/digitallibrary/>) &/OR FTP Site (Internet address <ftp://ftp.ci.punta-gorda.fl.us> ; User name [chnep](#); Password [BeachParty777](#); Folder [CHNEP Tidal Caloosahatchee SAV Targets Science Forum](#)).

- Backer P., F. Zimmanck & S. Baker. 2009. Feeding Rates of an Introduced Freshwater Gastropod *Pomacea insularum* on Native & Nonindigenous Aquatic Plants.
- Bartleson, R.D., M. J. Hunt & P. H. Doering. 2014. Effects of temperature on growth of *Vallisneria americana* in a sub-tropical estuarine environment. Wetlands Ecology and Management 22(5): 571-583.
- Blanch S., G. Ganf & K. Walker. 1998. Growth & recruitment in *Vallisneria americana* as related to average irradiance in the water column. Aquatic Botany Vol. 61 pp 181-205. <http://www.sciencedirect.com/science/article/pii/S0304377098000655>
- Burlakova, L., Karatayev, D. Padilla, L. Cartwright & D. Hollas. 2009. Wetland Restoration & Invasive Species: Apple snail (*Pomacea insularum*) Feeding on Native & Invasive Aquatic Plants. Restoration Ecology pp 1-8. <http://onlinelibrary.wiley.com/doi/10.1111/j.1526-100X.2008.00429.x/full>
- Buzzelli, C. B., R. Robbins, P. Doering, Z. Chen, D. Sun, Y. Wan, B. Welch & A. Schwarzschild. 2012. Monitoring and modeling of *Syringodium filiforme* (Manatee Grass) in Southern Indian River Lagoon. Estuaries and Coasts 35:1401-1415. <http://www.evergladeshub.com/lit/pdf12/Buzzelli12-Estuar&Coasts35.1401-15-ManateeGrassSoIndRivLagoon.pdf>
- Ceilley, D. 2009. Tape Grass (*Vallisneria americana*) Michx. Restoration Feasibility Study: Effectiveness of Two Exclosure Designs Final Report. FL Gulf Coast University, Ft. Myers, FL.
- Ceilley, D. 2013. Tape Grass (*Vallisneria americana*) Restoration Project in the Caloosahatchee River Ecosystem (PowerPoint Presentation. Johnson Engineering, Fort Myers FL.
- Ceilley, D. & S. Bortone. 2009. Tape Grass (*Vallisneria americana*) Restoration Feasibility Study (PowerPoint presentation).
- Ceilley D. et al. 2014. Map: Restoration & Enhancement Project of Historic SAV Tape Grass *Vallisneria americana*. From David Ceilley.
- Chamberlain, R.H., P.H. Doering, B. Orlando & B.M. Sabol. 2009. Comparison of manual and hydroacoustic measurement of seagrass distribution in the Caloosahatchee Estuary, Florida. Florida Scientist 72(4): 386-405. 2009. [http://www.chnep.wateratlas.usf.edu/upload/documents/FloridaScientist\(76\)2013.pdf](http://www.chnep.wateratlas.usf.edu/upload/documents/FloridaScientist(76)2013.pdf)
- Corbett, C. A., T. Barnes, P.H. Doering, K. H. Madley, J. A. Ott, & D. A. Tomasko. 2005. Issues with using seagrass as an indicator of ecosystem condition: A case study of Charlotte Harbor, Florida. Chapt. 15 pp. 229 -246 in: S. A. Bortone (ed.) Estuarine Indicators. CRC Press. <http://www.crcnetbase.com/isbn/9781420038187>
- Corbett, C. & J. Hale. 2006. Numeric Water Quality Targets for Lemon Bay, Charlotte Harbor & Estero Bay, FL. CHNEP, Fort Myers, FL. http://chnep.wateratlas.usf.edu/upload/documents/690_NumerWQTargLemonCharEstero.pdf

- Corbett, C. & K. Madley. 2006. *Charlotte Harbor*. Pp219-241 in: *Seagrass Status & Trends in the Northern Gulf of Mexico 1940-2002*. USGS Scientific Investigations Report 2006-5287. <http://pubs.usgs.gov/sir/2006/5287/pdf/CharlotteHarbor.pdf>
- Dixon, L.K. & G. Kirkpatrick. 1999. Causes of Light Attenuation with Respect to Seagrasses in Upper & Lower Charlotte Harbor. More Marine Laboratory Tech Report 650. Mote, Sarasota, FL. <https://dspace.mote.org/dspace/bitstream/2075/3056/1/MTR%20650.pdf>
- Dixon, L. K. & M. Wessel. 2014. *The Optical Model Spectral Validation and Annual Water Clarity Reporting Tool Final Report*. CHNEP, Fort Myers, FL.
- Doering, P.H. & R.H. Chamberlain. 2000. *Experimental studies on the salinity tolerance of turtle grass Thalassia testudinum*. Chapt. 6 pp 81-97 in: S.A. Bortone (ed.), *Seagrass: Monitoring ecology, physiology, and management*. CRC Press (Boca Raton, FL) 318 pp. <http://www.crcnetbase.com/isbn/9781420074475>
- Doering, P.H., R.H. Chamberlain, K.M. Donohue & A.D. Steinman. 1999. *Effect of salinity on the growth of Vallisneria americana Michx. from the Caloosahatchee Estuary, Florida*. <http://fau.digital.flvc.org/islandora/object/fau%3A5933>
- Doering, P.H., R.H. Chamberlain & D. E. Haunert. 2002. *Using submerged aquatic vegetation to establish minimum and maximum freshwater inflows to the Caloosahatchee Estuary, Florida*. *Estuaries* 25(6B): 1343-1354.
- Doering, P.H., R.H. Chamberlain & J. M. McMunigal. 2001. *Effects of simulated saltwater intrusions on the growth and survival of Wild Celery, Vallisneria americana, from the Caloosahatchee Estuary (South Florida)*. *Estuaries* 24: 894-903. <http://fau.digital.flvc.org/islandora/object/fau%3A5727>
- Douglass, J. 2013. *Caloosahatchee River Estuary Patch Scale Submersed Aquatic Vegetation Monitoring & Evaluation 2012-2013*. FGCU, Fort Myers, FL. http://www.evergladesplan.org/pm/ssr_2014/docs/ne_sav_2013.pdf
- Douglass, J. 2014. *Caloosahatchee River Estuary Patch Scale Submersed Aquatic Vegetation Monitoring & Evaluation 2013-2014*. FGCU, Fort Myers, FL.
- Duke, T. & W. Kruczynski (eds.). 1992. *The Status & Trends of Emergent & Submerged Vegetated Habitats of Gulf of Mexico Coastal Waters*. USEPA Tech Report EPA 800-R-92-003. <http://nepis.epa.gov/Exe/ZyPDF.cgi/20001PIB.PDF?Dockey=20001PIB.PDF>
- Gettys L. & W. Haller. 2013. *Effect of ecotype, sediment composition & fertility level on productivity of eight Florida ecotypes of Vallisneria (Vallisneria americana Michx)*. *J Aquatic Plant Management* 51(2):69-138 pp 127-131. <https://getinfo.de/app/Effect-of-ecotype-sediment-composition-and-fertility/id/BLSE%3ARN350768360>
- Gunter G. & G. Hall. 1962. *A Biological Investigation of the Caloosahatchee Estuary of FL*. For USACOE. <http://fgcu.digital.flvc.org/islandora/object/fgcu%3A21057>
- Hauxwell J., C. Osenbers & T. Frazer. 2004. *Conflicting Management Goals: Manatees & Invasive Competitors Inhibit Restoration of a Native Macrophyte*, *Ecological Applications* Vol. 14 (2) pp 571-586. <http://people.biology.ufl.edu/osenberg/papers/2004Hauxwell-EcoApps.pdf>
- Hoffacker, V.A. 1993. *1993 Caloosahatchee River Submerged Aquatic Vegetation Observations & Map*.
- Hunt, M.J. & P. H. Doering. 2005. *Significance of considering multiple environmental variables when using habitat as an indicator of estuarine condition*. Chapt. 14 pp 211-227 in: S. A. Bortone (ed.) *Estuarine Indicators*. CRC Press. <http://www.crcnetbase.com/isbn/9781420038187>

- Janicki, A., M. Dema & M. Wessel. 2009. Water Quality Target Refinement Project Task 2: Seagrass Target Development. CHNEP, Fort Myers, FL. <http://www.chnep.wateratlas.usf.edu/upload/documents/WQ%20Target%20Refine%20Task%202%20SG%20Targets%20Approved%202010%2003.pdf>
- Jarvis J. & K. Moore. 2008. Influence of environmental factors on Vallisneria americana seed germination. Aquatic Botany Vol 88 pp 283-294. <http://researchonline.jcu.edu.au/33488/>
- Kimes, C. & Crocker. 1998. The Caloosahatchee River & its Watershed: A Historical Overview. FL Center for Environmental Studies. Available from FGCU Library. 58 pp.
- Kraemer, G.P., R.H. Chamberlain, P.H. Doering, A.D. Steinman & M.D. Hanisak. 1999. Physiological responses of Vallisneria americana transplants along a salinity gradient in the Caloosahatchee Estuary (SW Florida). Estuaries 22:138-148. [https://www.purchase.edu/sharedmedia/departments/academicprograms/las/sciences/envstudies/gpkpub/kr-aemer%20et%20al.%20\(1999\).pdf](https://www.purchase.edu/sharedmedia/departments/academicprograms/las/sciences/envstudies/gpkpub/kr-aemer%20et%20al.%20(1999).pdf)
- Mazzotti F., L. Pearlstine, R. Chamberlain, M. Hunt, T. Barnes, K. Chartier & D. DeAngelis. 2008 Stressor Response Model for Tape Grass (Vallisneria americana). University of FL IFAS Extension Cir 1524. <http://edis.ifas.ufl.edu/pdf/UFW/UW28100.pdf>
- Milbrandt, E. 2008. Methods Manual & Monitoring Results for Vallisneria americana Restoration in Southwest FL – Draft. SCCF, Sanibel, FL. https://www.sccf.org/files/content/docs/3527_Manual.pdf
- Moore, K., E. Shields & J. Jarvis. 2010. The Role of Habitat & Herbivory on the Restoration of Tidal Freshwater Submerged Aquatic Vegetation Populations. Restoration Ecology Vo. 18, No. 4, pp. 596-604, July 2010. http://www.chesapeake.org/OldStac/savrest/Moore_etal.pdf
- Orlando, B.A., P. H. Doering & R. H. Chamberlain. 2013. Seagrass in the Caloosahatchee River Estuary: The effect of annual rainfall patterns. Florida Scientist 76(2): 107-120. [http://www.chnep.wateratlas.usf.edu/upload/documents/FloridaScientist\(76\)2013.pdf](http://www.chnep.wateratlas.usf.edu/upload/documents/FloridaScientist(76)2013.pdf)
- Parsons, M. 2013. Caloosahatchee Science Workshop Report Final. Florida Gulf Coast University, Fort Myers, FL. http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/calooos_science_workshop_final_report.pdf
- Philips, R. & V. Springer. 1960. A Report on the Hydrography, Marine Plants and Fishes of the Caloosahatchee River Area, Lee County FL. FL State Board of Conservation Marine Laboratory, St. Petersburg, FL. http://research.myfwc.com/engine/download_redirection_process.asp?file=ss5_5647.pdf&objid=22539&dltype=publication
- Robbins, B. 2004. Habitat Use of Vallisneria americana Beds in the Caloosahatchee River Final Report. Mote Marine Laboratory Technical Report 993. <https://dspace.mote.org/dspace/bitstream/2075/225/4/MTR%20993.pdf>
- SFWMD. 2013. Potential Funding Sources (for Caloosahatchee Projects) October 5, 2014. http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/calooos_forums_funding_sources_2014_1005.pdf
- SFWMD. 2014. Caloosahatchee River Watershed Projects List Draft November 21, 2014. http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/calooosahatchee_projects_list_2014_1121_draft.pdf

- Treat S. & Lewis R (eds.). 2003. *Seagrass Restoration Success Failure & the Costs of Both*. More Marine Laboratory Workshop, Sarasota FL. <http://www.seagrassrestorationnow.com/docs/Treat%20and%20Lewis%202006%20Seagrass%20Restoration-6.pdf>
- Tomasko, D. & M. Hall. 1999. *Productivity & biomass of the seagrass *Thalassia testudinum* along a gradient of freshwater influence in Charlotte Harbor, FL*. Estuaries Vol 22(3A) pp 592-602.
- Yarbro, L. & P. Carlson. 2011. *Seagrass Integrated Mapping & Monitoring for the State of FL Mapping & Monitoring Report No. 1*, FFWCC, St. Petersburg, FL. <http://myfwc.com/research/habitat/seagrasses/publications/simm-report-1/>
- Wilzbach, M., K. Cummins, L. Rojas, Paul Rudershausen & J. Locascio. 2000. *Establishing Baseline Seagrass Parameters in a Small Estuarine Bay*. Chapt. 9 pp125-135 in: S.A. Bortone (ed.) *Seagrasses: Monitoring, Ecology, Physiology, & Management*. CRC Press. <http://www.crcnetbase.com/isbn/9781420074475>

**SOME RELEVANT RESOURCES
ADDITIONAL RESOURCES ADDED BELOW**

- Buzzelli, C. B., P. Gorman, P. Doering, Z. Chen & Y. Wan. 2014. *The application of oyster & seagrass models to evaluate alternative inflow scenarios related to Everglades restoration*. Ecological Modeling 297 (2015) 154-170.

10. CALOOSAHATCHEE RIVER VISIONING UPDATE

In 2013 the District launched a public initiative with Caloosahatchee watershed stakeholders intended to develop a unified voice to support improved health of the Caloosahatchee River and Estuary. The purpose was to better understand the diverse issues, concerns and shared interests of area stakeholders and to identify priority projects across the watershed that could be supported by the community. Through a series of facilitated meetings and public forums, the community has identified and prioritized a list of near and medium term regional projects that will benefit the watershed. The presentation will discuss the findings and recommendations of the consensus building initiative and identify efforts to maintain and propel stakeholder collaboration within the watershed.

Additional information, including the Synthesis Report from the Caloosahatchee Science Workshop held November 19 and 20, 2013 at FGCU, may be found at: www.sfwmd.gov/caloosahatchee.

Recommendation: No motion requested; for information and discussion only.

Attachments: Caloosahatchee Science Workshop Synthesis Report.

11. FLORIDA WATER AND LAND CONSERVATION INITIATIVE AMENDMENT 1 UPDATE

The Florida Water and Land Conservation Amendment ("Amendment 1") dedicates funds to protect Florida's water, wildlife habitat, natural areas, and parks now and for future generations. It provides funding to acquire, restore, and manage conservation lands, including lands protecting water resources and drinking water, wetlands, forests, rivers and beaches, fish and wildlife habitat, recreation lands, parks, urban open space and keeping working lands (farms and forests) as part of Florida's rural landscape. Following the successful passage of Amendment 1 on November's ballot by 75% of Florida voters, the focus has now turned to how the new constitutional amendment will be implemented by the State Legislature.

The intent of the Amendment is to restore the funding for the highly successful, long-standing state programs including Florida Forever, the Comprehensive Everglades Restoration Plan, Florida Communities Trust, and the Rural and Family Lands Program. These programs have a decades-long history of success and select projects on the basis of competitive merit, not politics.

The concern is that the Legislature may try to use these funds to replace a variety of budgeted items such as waste water treatment construction (grey, not green infrastructure) or the salaries for state park employees. There are already proposals being discussed in the Senate to eliminate a number of existing trust funds that support environmental programs. While the legislature has received over 3,800 comments on the allocation of Amendment 1 funds, the realization of more land and water conservation literally remains up for debate.

Fortunately, Florida's Water and Land Legacy ("FWLL"), the sponsor committee of Amendment 1, remains active. FWLL drafted the Water and Land Conservation Amendment, collected nearly 1 million signatures to place Amendment 1 on the November 2014 ballot, and ran the successful voter education campaign that resulted in the overwhelming approval of Amendment 1. It is continuing to work together to bring the Legislature a united position on the use and distribution of Amendment 1 funding and keep the public informed about legislative actions. FWLL Steering Committee members are: 1000 Friends of Florida, Audubon Florida, Conservancy of Southwest Florida, Defenders of Wildlife, Everglades Foundation, Florida Conservation Coalition, Florida Land Trust Alliance, Florida Wildlife Federation, League of Women Voters of Florida, Rails-to-Trails Conservancy, Sierra Club, The Conservation Fund, and Trust for Public Land.

Recommendation: No motion requested; for information and discussion only.

Attachments: Florida's Water & Land Legacy Amendment 1 Talking Points
Florida's Water & Land Legacy Amendment 1 Successful
Conservation Projects



Talking Points

The Water and Land Conservation Amendment calls for renewed state spending on water and land conservation that will help Florida's future by restoring and protecting water resources, providing access to public lands, and keeping working lands, farms, and forests as part of Florida's rural landscapes.

The intent of the Amendment, as ratified by an overwhelming majority of Florida voters, is to restore spending for the highly successful group of long-standing programs already authorized in Florida statutes. It was drafted so implementing legislation is not required and the constitutional mandate can be met by restoring and enhancing funding to existing water and land conservation programs.

TREMENDOUS POPULAR SUPPORT

- Voters approved Amendment 1 by an overwhelming 75%.

CLEAR AND DIRECT LANGUAGE

- The amendment language is clear and was drawn from existing statutes governing conservation.
- It provides a straightforward set of priorities for spending documentary stamp taxes on water and land conservation, by specifically invoking statutory language relating to existing conservation programs like Florida Forever, Florida Communities Trust, and Everglades Restoration.
- Throughout all stages of the campaign to pass Amendment 1, the Sponsor Committee's voter education and outreach emphasized the need for Amendment 1 to renew funding to these existing programs.

PROTECTING WATER AT THE SOURCE

- Protecting conservation lands is essential to protecting our water resources. We must protect our waters at the source.
- Development is on the rise, and Amendment 1 is intended to strike the right balance between development and conservation. We must invest in our undeveloped natural areas before they are gone and should avoid allocating Amendment 1 funds towards projects that would promote imprudent development.
- In addition to preserving natural areas that protect our water supply, Amendment 1 is also intended to fund ecosystem restoration projects, including Everglades restoration.



Successful local and regional conservation projects Southwest Gulf Coast

Florida Forever

Florida Forever is the country's premier conservation, water supply protection, and recreation lands acquisition program, a blueprint for conserving natural resources to strike a sensible balance between protecting our state's natural resources and fueling future economic prosperity. Florida Forever replaces Preservation 2000 (P2000), the largest and most successful public land acquisition program of its kind in the United States.



Photo by Allison Blakslee



Robinson Preserve, Manatee County (FCT Parks Directory)

Florida Communities Trust

The Florida Communities Trust program assists local communities in protecting important natural resources, providing recreational opportunities, and preserving Florida's traditional working waterfronts through two competitive grant programs. These local land acquisition grant programs provide funding to local governments and eligible non-profit organizations to acquire land for parks, open space, greenways and projects supporting Florida's seafood harvesting and aquaculture industries. The source of funding for Florida Communities Trust comes from Florida Forever proceeds.

Manatee

1912 Cortez Schoolhouse
Headwaters at Duette Preserve
Palmetto Estuary Park
Riverview Pointe Preserve
Robinson Preserve

Sarasota

Bay Preserve at Osprey
Curry Creek Preserve
Graser Park
Hog Creek Park
Locklear Park
Manasota Scrub Preserve
Myakkahatchee Creek
Environmental Park
Pocono Trail Preserve
Red Bug Slough Preserve
Sleeping Turtles Preserve North

Charlotte

Amberjack Environmental Park
Bayshore Live Oak Park
Buck Creek Preserve
Cedar Point Environmental Park
Charlotte Flatwoods Environmental
Park
Englewood Beach and Chadwick
Park
Oyster Creek Regional Park
Punta Gorda Nature Park
South County Regional Park
Sunrise Park
Tippecanoe II Mitigation Area

Lee

Caloosahatchee Creeks Preserve
Gulfside City Park
Hickey's Creek Mitigation Park
Island Park
Mound House
Pine Island Preserve at Matlacha Pass
Pond Apple Park
Prairie Pines Preserve
Riverside Community Center and Park
San Carlos Bay Bunche Beach Preserve
Seven Seas Newton Park
Silver Key Park
St. James Creek Preserve



Water and Land Conservation Projects that Can Benefit from Amendment 1 Southwest Gulf Coast



"Peaceful Cove," Terra Ceia Bay
Photo by Bill Dickinson

Terra Ceia

Mangrove habitat restoration, fisheries restoration

The mangrove swamps on the islands and mainland around Terra Ceia Bay are some of the last undisturbed natural areas left on the southeast shore of Tampa Bay. The area is critical to protecting and restoring mangrove habitat and seagrasses to ensure the health of manatees, local fisheries, and bird rookeries. Growth pressure in the area is intense, yet more than 50 percent of the Terra Ceia project has yet to be protected.

Counties: Manatee



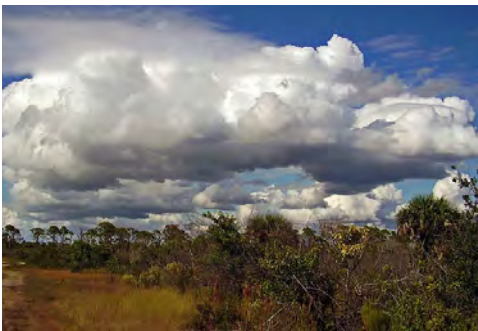
Triangle Ranch, Myakka Ranchlands
Photo by Glenn Gardner, G2photos

Myakka Ranchlands

Regional connectivity, water storage and habitat protection

Expanding and buffering the diverse habitats along the state-designated "Wild and Scenic" Myakka River and the 110,000 acres of already protected land will benefit wildlife and people. Conservation of ranchlands in critical locations will protect, restore and maintain the water quality, natural water flows, wetlands, and fisheries of the Myakka River and Charlotte Harbor, an estuary of national significance. The mix of high quality habitats will accommodate an array of wildlife from the gopher tortoise to the Florida panther as well as traditional Florida agriculture. Protection will also enhance recreational opportunities along the river and within adjacent parks and preserves. Over 20,000 acres are available for conservation.

Counties: Manatee, Sarasota, DeSoto



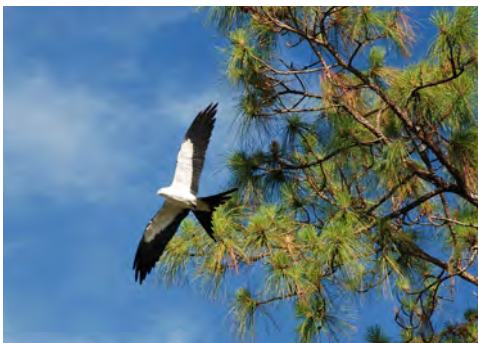
Charlotte Harbor Preserve State Park
from swfwmd.state.fl.us

Charlotte Harbor Flatwoods

Hydrologic and habitat restoration

Acquisition of key parcels surrounding five waterways that flow from the Babcock-Webb Wildlife Management Area to Charlotte Harbor will enable a regionally significant restoration initiative that will not only restore the flow of water through Charlotte County and into Charlotte Harbor, but will also reduce flooding in Lee County and the Caloosahatchee River watershed.

Counties: Charlotte, Lee



Swallow-tailed Kite
Photo by Ken Grudens

Corkscrew Regional Ecosystem Watershed

Florida panther, Florida black bear, habitat connections, water supply

The large, interconnected swamps of southwest Florida must be preserved if such wildlife as the Florida panther and black bear are to survive. The Corkscrew Regional Ecosystem Watershed (CREW) will connect three conservation areas and protect the flow of water feeding the Florida Panther National Refuge, Fakahatchee Strand and the Corkscrew Swamp Sanctuary. To date, less than half of the 70,000 acres have been protected.

Counties: Collier, Lee

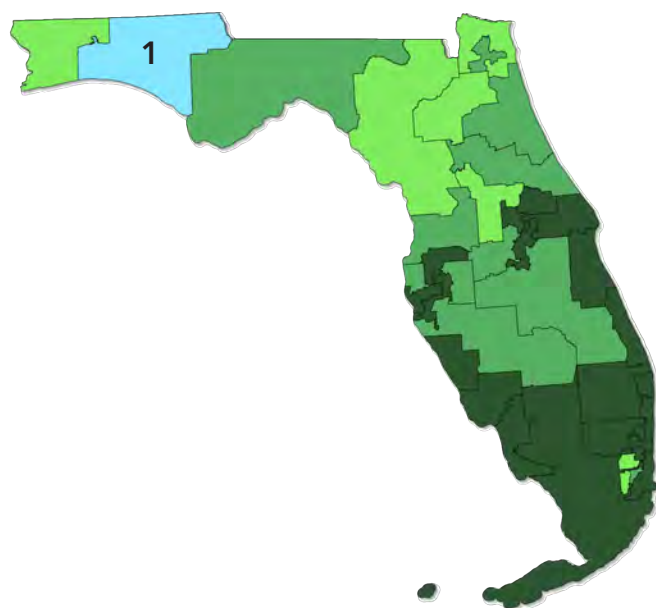
ALTERNATIVE FUNDING SOURCES FOR WASTEWATER AND WATER SUPPLY NEEDS

- Other, non-Amendment 1 sources of funding (such as the Clean Water State Revolving Fund) are available and should be utilized to address the significant and costly wastewater infrastructure and water supply issues facing our state.
- While wastewater and water supply infrastructure are important, there are other sources of funding that would be more appropriate than Amendment 1.

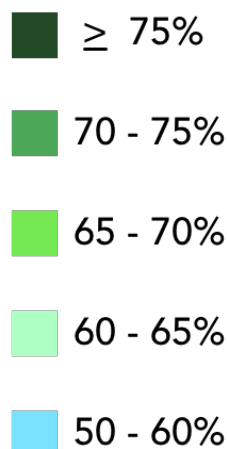
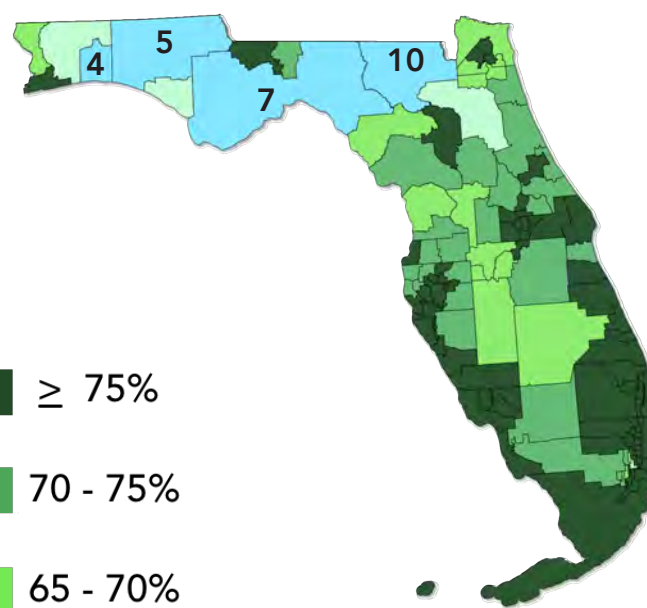
NO IMPACT ON OTHER IMPORTANT SERVICES

- Amendment 1 does not take away from other vital programs like housing and transportation.
- For several years, debt service on conservation bonds alone amounted to more than 50% of doc stamp revenues. Amendment 1's allocation of 33% of documentary stamp revenues to conservation is modest in comparison.
- Documentary stamp tax revenues are projected to increase, so the overall "pie" available for conservation, housing, and transportation is growing.
- Because of past increases in the doc stamp rate, at least 25% of doc stamp collections have historically been intended for conservation.
- Amendment 1 allocates less than 1% of the state's total budget to fund existing conservation programs.

Support for Amendment 1 by Senate District



Support for Amendment 1 by House District



12. RESTORE UPDATE

In 2012 – 2013 the CHNEP in collaboration with the Tampa Bay Estuary Program and Sarasota Bay Estuary Program prepared the Southwest Florida Regional Ecosystem Restoration Plan (SWFRERP). The SWFRERP was submitted to the RESTORE Council, and to the State of Florida for inclusion the FDEP project database. At this time, the U.S. EPA has submitted to the RESTORE Council a request for funding Gulf of Mexico NEPs at a level of \$2 million over 5 years with the funds to be used for restoration.

See the attached overview of the status of funds associated with the Deepwater Horizon oil spill.

Recommendation: No motion requested; for information and discussion only.

Attachment: RESTORE Act Summary Information

- **NRDA – National Resource Damages Assessment**

The NRDA process determines the costs associated with injuries to natural resources, loss of use of those resources and cost of assessing the damage. The Record of Decision (ROD) has been released - this is a critical step in the NEPA process.

- **RESTORE Act**

The RESTORE Act established a formula for distribution of oil spill associated fines and penalties into 5 “pots” or “buckets” of money. 80% of Clean Water Civil penalties go to the Trust Fund for economic and ecological restoration and recovery of Gulf Coast region. The remaining 20% will go into the Oil Spill Liability Trust Fund – where all oil spill penalties usually go.

| | Who Administers \$\$ | Who Can Receive \$\$ | Notes |
|---|----------------------|--|---|
| Bucket 1 35% Direct Component \$\$ to states in equal shares; Florida established a formula for distribution to counties | Treasury | Each county is developing its own process that complies with Treasury’s rules, but MUST include 45 days for public review and comment. | Lee Co – \$1,230,720 (8.776%) advisory committee working on process Charlotte Co. – \$723,903, (5.162%) advisory board working on process Sarasota Co. - \$1,016,438, (\$7.248%) staff working on process |
| Bucket 2 30% + 50% interest Comprehensive Plan Gulf Coast Ecosystem Restoration Council | RESTORE Council | Projects and programs submitted by Council members | SWF NEP Plan was submitted, Gulf NEP funding submitted by EPA; applications were required |
| Bucket 3 30% Spill Impact Component | RESTORE Council | SW Florida not eligible, FACO Gulf Consortium working with State on State Expenditure Plan (SEP) | Projects must be in the FDEP database for consideration |
| Bucket 4 2.5% + 25% interest Restoration Science Program | NOAA | institutions of higher education; other non-profits; state, local, and Indian Tribal governments; commercial organizations; and U.S. Territories | RFP for LOI just closed On Jan. 20. 2015 |
| Bucket 5 2.5% + 25% interest Centers of Excellence | Treasury | Florida Institute of Oceanography | RFP just hit the street, LOI due March 2; full proposals due May 20 |

- **NFWF – National Fish and Wildlife Foundation**

The Gulf Environmental Benefit Fund will receive \$2.94 Billion over 5 years from criminal plea agreement funds paid by BP and Transocean. Nearly \$500 million has been committed to projects so far.

- **Economic and Medical Claims**

The Gulf Coast Claims Facility was established to process claims, settlements reached with BP and Halliburton; BP's request for a SCOTUS to reconsider has been denied.

- **US Criminal and Civil Claims**

This is the Deepwater Horizon Trial taking place in New Orleans, La. The civil penalties will fund the 5 RESTORE Act "buckets" The funds available now are from partial civil settlements with MOEX, and Transocean.

Phase I results:

This phase was to determine liability. Judge Barbier found that the oil spill was the result of "gross negligence" and "willful misconduct." This is important as it sets the ceiling for how large the fine can be per barrel.

Phase II results:

This phase was to determine the quantity of oil released and who was responsible for stopping it. Judge Barbier ruled that 3.19 million barrels of oil were discharged into the Gulf of Mexico. This is important because now we know the minimum and maximum penalties.

Standard maximum penalty: \$1,000 per barrel X 3.19 million barrels = **\$3.5 billion**

Maximum penalty for "gross negligence" or "willful misconduct":

\$4,300 per barrel X 3.19 barrels = **\$13.7 billion**

Phase III results:

This phase was to determine all other liability that occurred during the clean-up including the use of dispersants. Trial closes after two weeks of testimony; each side is giving testimony to influence the final per barrel penalty.

An Overview of the RESTORE Act

What is the RESTORE Act?

The Resources and Ecosystem Sustainability Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012—better known as the “**RESTORE Act**”—was enacted on July 6, 2012.

The RESTORE Act creates a Gulf Coast Restoration Trust Fund (RTF), which will receive **80% of any Clean Water Act (CWA) civil and administrative penalties** paid by BP and other companies responsible for the *Deepwater Horizon* oil spill. The RTF will support a variety of ecological and economic restoration and recovery activities in the Gulf.

What are Clean Water Act penalties?

The CWA regulates the discharge of pollutants into U.S. waters. Parties responsible for discharging oil in violation of the Act face penalties. The **U.S. Department of Justice** has filed a lawsuit seeking CWA civil penalties for *Deepwater Horizon*.

Where do penalties normally go?

Without the RESTORE Act, all civil penalty monies would go to the **Oil Spill Liability Trust Fund** for, among other things, use in *future* oil spills.

How much money might be involved?

The amount of civil penalties collected will depend on a number of factors. These include whether the parties responsible for the spill acted with gross negligence or willful misconduct, the amount of oil discharged into the water, and other factual findings about the spill. The parties may also settle on a penalty amount.

So far, the court has determined that the oil spill was the result of BP’s “gross negligence” and “willful misconduct” (note that BP is appealing this decision). The court has also ruled that “3.19 million barrels of oil discharged into the Gulf of Mexico.” The *maximum* CWA civil penalty that BP faces is therefore \$13.7 billion (see below).*

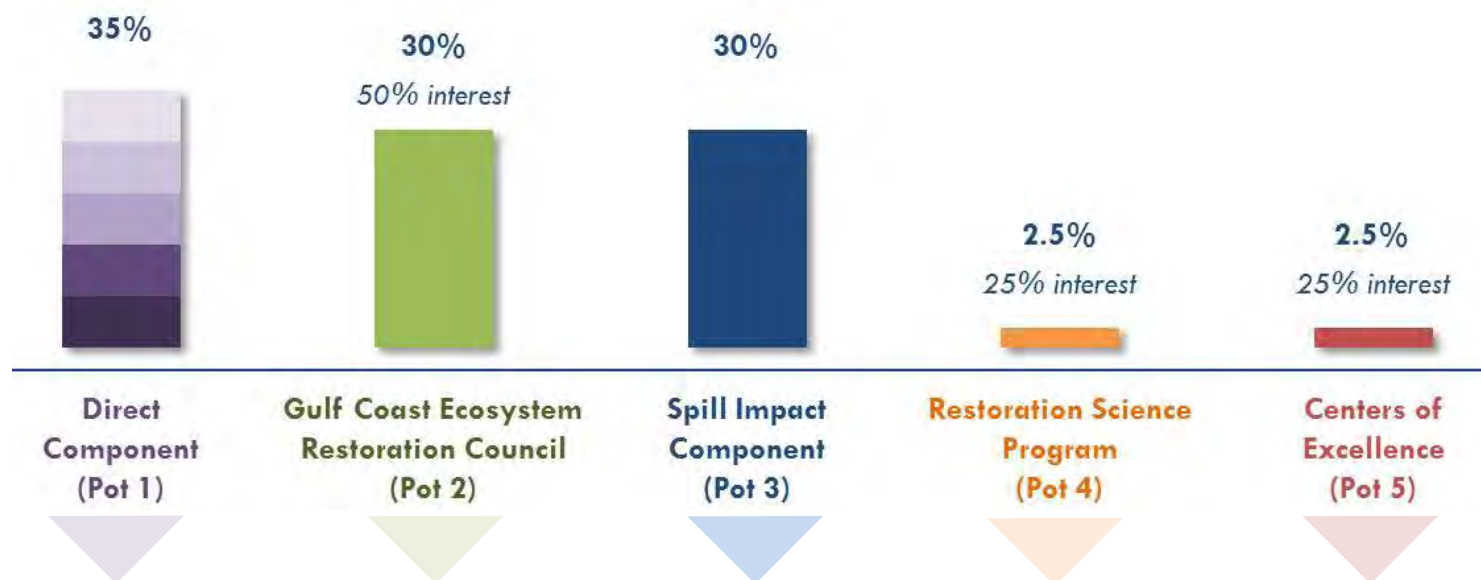
It is important to keep in mind that the court must also consider certain factors set out in the CWA when determining penalty amounts. The court has yet to rule on those factors.

| Standard maximum penalty: | Maximum penalty if there was gross negligence or willful misconduct: |
|---|---|
| $ \begin{array}{c} \$1,100 \\ \text{per barrel} \end{array} \times \begin{array}{c} 3.19 \\ \text{million} \\ \text{barrels} \end{array} = \begin{array}{c} \$3.5 \\ \text{billion} \end{array} $ | $ \begin{array}{c} \$4,300 \\ \text{per} \\ \text{barrel}^* \end{array} \times \begin{array}{c} 3.19 \\ \text{million} \\ \text{barrels} \end{array} = \begin{array}{c} \$13.7 \\ \text{billion} \end{array} $ |

* The court has yet to determine the amount of the maximum enhanced per-barrel penalty. The United States is arguing it is \$4,300 per barrel, and BP is arguing it is \$3,000 per barrel.

What will the RESTORE Act do?

The largest portion of the RTF (35%) will be distributed directly to the Gulf states in equal shares (7% each). Just under one-third of the funds (30%, plus 50% of the interest earned) will go to a Gulf-wide Restoration Council. Slightly less (30%) will be divided among the Gulf states based on their oil spill impacts. The remainder (5%, plus 50% of the interest earned) will fund scientific research and monitoring through a Restoration Science Program and “Centers of Excellence.”



Give Money to States in Equal Shares.

Just over one-third of the funds will go directly to the five Gulf states in equal shares.

Funds can be used for ecological and economic restoration. Each State must submit a multi-year implementation plan to the Department of the Treasury before it receives funds.

Give Money to a Gulf-wide “Restoration Council.”

The RESTORE Act creates a Gulf Coast Ecosystem Restoration Council composed of federal officials and the governors of the Gulf states.

Funds are to be used to carry out a science-based plan to restore and protect natural resources.

Give Money to States Based on Oil Impacts.

Almost one-third of the funds will be divided among Gulf states according to how severely they were impacted by the oil spill.

Funds can be used for ecological and economic restoration. Each State must submit a funding plan to the Restoration Council for approval before it receives funds.

Give Money to Fund Long-Term Research and Monitoring of the Gulf.

The Act creates a program to fund research, observation, and monitoring to support long-term sustainability of Gulf ecosystems and fisheries.

Funding priority will be given to integrated, long-term projects.

Give Money to “Centers of Excellence” for Gulf Coast Research.

Centers of Excellence will be established to further Gulf Coast science, monitoring, and technology.

Competitive grants will be made to non-governmental entities and consortia (including universities) to establish the centers.

Timeline of Major Events in the Gulf Recovery Process

This timeline provides a timeline of major events related to four key Gulf restoration and recovery processes: the **Natural Resource Damage Assessment (NRDA)**, the **RESTORE Act**, the **National Fish and Wildlife**

Foundation (NFWF)'s Gulf Environmental Benefit Fund, and **Economic and Medical Claims**. It also introduces major events in the **U.S. Criminal Claims** and **Civil Claims**, which are related to but independent of the other processes.

WHAT'S HAPPENED SO FAR?

PROCESS

PURPOSE

NRDA

Under the Oil Pollution Act, parties responsible for the spill are liable for injuries to natural resources, loss of use of those resources, and the costs of assessing the damage

RESTORE Act

Specifies that 80% of Clean Water Act civil penalties go to a Restoration Trust Fund for economic and ecological restoration and recovery of the Gulf Coast region

NFWF

Receives funds through two criminal plea agreements to remedy harm to natural resources harmed by *Deepwater Horizon*

Economic & Medical Claims

Under the Oil Pollution Act and maritime law, responsible parties for the spill may be liable for economic losses and medical injuries

U.S. Criminal & Civil Claims

Parties responsible for the spill may be liable for criminal and/or civil penalties under various laws. Some remedies are linked to the processes mentioned above.

Sept. 27, 2010
Trustees issue notice of intent (NOI) to conduct restoration planning

Feb. 17, 2011
Trustees issue NOI to begin restoration scoping and a programmatic environmental impact statement (PEIS)

Apr. 20, 2011
BP and trustees sign early restoration agreement

Dec. 14, 2011
Trustees release Draft Phase I Early Restoration Plan and Environmental Assessment

Apr. 18, 2012
Trustees release Final Phase I Early Restoration Plan and Environmental Assessment

Oct. 10, 2012
Trustees release Draft Phase II Early Restoration Plan and Environmental Assessment

Dec. 21, 2012
Trustees release Final Phase II Early Restoration Plan and Environmental Review

May 6, 2013
Trustees announce intent to propose Phase III Early Restoration projects

June 4, 2013
Trustees announce intent to prepare an early restoration PEIS

Dec. 6, 2013
Trustees release Draft Programmatic and Phase III Early Restoration Plan and Draft Early Restoration PEIS

June 26, 2014
Trustees release Final Programmatic and Phase III Early Restoration Plan and Early Restoration PEIS (Phase III ERP/PEIS)

October 2014
Trustees release Record of Decision (ROD) for Phase III ERP/PEIS

June 29, 2012
RESTORE Act passes as part of surface transportation and federal aid highways act (MAP-21) (Pub. L. 112-141)

July 6, 2012
President Obama signs RESTORE Act into law

Jan. 29, 2013
Gulf Coast Ecosystem Restoration Council releases Proposed Comprehensive Plan

May 23, 2013
Restoration Council releases Draft Initial Comprehensive Plan and Draft Programmatic Environmental Assessment (PEA) for its projects

Aug. 28, 2013
Restoration Council approves Final Initial Comprehensive Plan and PEA

Sept. 6, 2013
U.S. Treasury Department releases draft procedures for administering the RESTORE Act

Aug. 15, 2014
Treasury releases an interim final rule for administering the RESTORE Act

Nov. 17, 2014
First submission window for Council members to submit project and program proposals for Council ("Pot 2") funds closes (proposals posted online on Dec. 1)

Jan. 16, 2015
Council releases its proposed procedures for implementing NEPA (comments due Feb. 17, 2015)

Nov. 15, 2012
Under the terms of the BP criminal plea agreement, NFWF is to receive \$2.394 billion over five years

Jan. 3, 2013
Under the terms of the Transocean criminal plea agreement, NFWF is to receive \$150 over five years

May 14, 2013
NFWF launches Gulf Environmental Benefit Fund, to be used to administer and monitor funds

Nov. 14, 2013
NFWF announces initial round of 22 projects across five Gulf states, worth ~\$112 million

April 2014
NFWF announces award of funds for projects in LA and MS, worth ~\$148 million

Aug. 22, 2014
NFWF announces award of \$34.5 million for land acquisition project in Texas

Nov. 17, 2014
NFWF announces latest round of projects (25 projects across five Gulf states, worth ~\$100 million)

Aug. 23, 2010
Gulf Coast Claims Facility (GCCF) opens to process spill-related claims from individuals and businesses

Mar. 2012
BP and Plaintiffs' Steering Committee agree on key terms of economic damages and medical benefits settlements

June 4, 2012
Deepwater Horizon Claims Center opens

Nov. 8, 2012
Court holds fairness hearing on the economic and medical settlements

Dec. 21, 2012
Court approves economic damages settlement

Jan. 11, 2013
Court approves medical benefits settlement

Feb. 11, 2014
Appeals court dismisses all remaining medical benefits settlement

Sept. 2, 2014
Halliburton announces it has reached a ~\$1.1 billion settlement with the Plaintiffs' Steering Committee, covering most individual and business claims against it

Dec. 8, 2014
U.S. Supreme Court denies BP's request to review lower court decisions that upheld economic damages settlement

Dec. 15, 2010
U.S. files a complaint against various parties, including a claim for civil penalties under the Clean Water Act (CWA)

Feb. 17, 2012
DOJ, Coast Guard, EPA, and MOEX announce partial civil settlement (court approved June 18, 2012)

Nov. 15, 2012
DOJ and BP announce criminal settlement (court accepted Jan. 29, 2013)

Jan. 3, 2013
DOJ and Transocean announce criminal settlement (court accepted Feb. 14, 2013) and partial civil settlement (court approved Feb. 19, 2013)

Feb. 25 – Apr. 17, 2013
Phase I of the BP civil trial takes place in New Orleans, LA

Sept. 30 – Oct. 18, 2013
Phase II of the BP civil trial takes place in New Orleans, LA

Sept. 4, 2014
District Court Judge Carl Barbier finds the oil spill was the result of BP's "gross negligence" and "willful misconduct"

Jan. 15, 2015
Court rules that 3.19 million barrels of oil were discharged into the Gulf of Mexico

Jan. 20, 2015
Phase II of the BP civil trial begins in New Orleans, LA



FLORIDA INSTITUTE OF OCEANOGRAPHY

Contact: Andy Shepard, Program Director
(727) 553-3374

FOR IMMEDIATE RELEASE
February 2, 2015

FIO Center of Excellence Research Grants Program

Requesting Proposals for funding to support Coastal Fisheries and Wildlife research and monitoring.

St. Petersburg, Florida

Today, the [Florida Institute of Oceanography \(FIO\)](#) announces its [Request for Proposals \(RFP\) for the Florida Center of Excellence Research Grants Program](#). [FIO](#) was designated as the Gulf State Entity under the federal [RESTORE Act](#) to administer the Trust Fund that will distribute proceeds from fines levied in the Deepwater Horizon disaster to the Gulf States.

The [competitive grant](#) program is intended to support science and technology developments that promote the environmental recovery from the 2010 Deepwater Horizon Oil Spill and the long-term health of Gulf of Mexico natural resources. With funding from the first spill settlement from rig owner Transocean in the U.S. District Court in the Eastern District of Louisiana, this program will fund grants focused on coastal fisheries, wildlife research and monitoring off the west coast of Florida, from 25 miles inland out to the deep sea.

In 2012, commercial and recreational fishing industries generated \$199 billion in U.S. sales and in Florida, marine fisheries contributes \$29.7 billion/year to the state's economy, compared to Florida's citrus, cattle ranching and space industries that produce \$14.5 billion/year. Florida marine fisheries is a major economic engine to Florida and the entire Gulf region.

"Fish and wildlife are public trust resources," said [FIO](#) Director Dr. William Hogarth. "We must work together to provide the science required for sound management and protection of these valued resources for today's and future generations. The program funds will provide scientists an opportunity to better understand the marine ecosystem supporting our fishing industries."

Projects may receive up to \$300,000 for two years of support. Proposals will be reviewed by the program's management team and a panel of independent experts. The panel will consider proposals based on the strength of proposed activities that demonstrate innovation and excellence, engage stakeholders, and contribute to the Gulf's recovery.

Priorities include promoting faster, more accurate fish population and fishing effort estimates, especially for recreational fisheries.

“By encouraging inclusion of fishermen in projects, we hope to promote their trust in fisheries data and related products, such as stock size models and predictions,” said Program Director Andrew Shepard.

Program funds will also support collaborations with other Gulf restoration programs, such as coordinated environmental monitoring at a geographic scale that matches the size of the oil spill impacts.

For details on the program, its rules and policies, and the RFP, visit [FIO's web site at http://www.fio.usf.edu/research/restore-act](http://www.fio.usf.edu/research/restore-act).

The [Florida Institute of Oceanography](#) is a consortium of 29 public and private academic institutions, state agencies and marine laboratories whose mission is to facilitate, support and maximize underlying technology, equipment, facilities, services and resources to academic and research programs throughout the state of Florida.

Join us on [Twitter](#) and [Facebook](#). FIO is hosted by the [University of South Florida](#) located in St. Petersburg, Florida.

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Florida Centers of Excellence Research Grants Program

Feb. 2, 2015. Florida Centers of Excellence Research Grants Program initial Request for Proposals (RFP) will focus on fisheries and wildlife research and monitoring in the Gulf of Mexico off the west coast of Florida. [Read More.](#)

RESTORE Act



RESTORE Act programs include five components, including the Centers of Excellence Research Grant Program (CERGP) (RESTORE Act Regulations sub-part H section §34.700), to receive 2.5% of Trust Fund principal, to be divided equally among the five Gulf coast state entities (0.5% to Florida, an estimated \$4,000,000 from the Transocean settlement). FIO is the Gulf coast state entity responsible for administering the Florida CERGP.

Florida Centers of Excellence Research Grants Program (CERGP)

Feb. 2, 2015. Florida Centers of Excellence Research Grants Program initial Request for Proposals (RFP) will focus on fisheries and wildlife research and monitoring in the Gulf of Mexico off the west coast of Florida. [View News Release](#)

Schedule:

February 2, 2015—RFP release

March 2, 5pm ET—Letters of Intent Due

May 20, 5pm ET—Full proposals due

July 1, 2015—Awards announced

[2015 Request for Proposals](#)

[RFP Frequently Asked Questions \(FAQs\)](#)

[2015 RFP Submission Portal for Letters of Intent](#)

Required RFP Forms:

[Letter of Intent Cover Sheet](#)

[Proposal Cover Sheet](#)

[PI Conflict of Interest Disclosure](#)

[Annual Budget](#)


[Current and Pending Support](#)

FL Centers of Excellence Research Grants Program Rules and Policies

[Download](#)

RESTORE Act reference documents are available below

[RESTORE Act Final - July 2, 2012](#)

[Download](#)[Guide to the RESTORE Act](#)[Download](#)[Congressional Record - July 10, 2012](#)[Download](#)[Florida Centers of Excellence Research Grants Program 10-21-14 Public Scoping Presentation](#)[Download](#)Display Num 20 [Get connected with FIO](#)[Join our mailing list](#)[Subscribe](#)

FIO on Twitter

CamN6 @FIOTweet releases RFP for funding under the Center of excellence research grant program today! Go to their website for info.

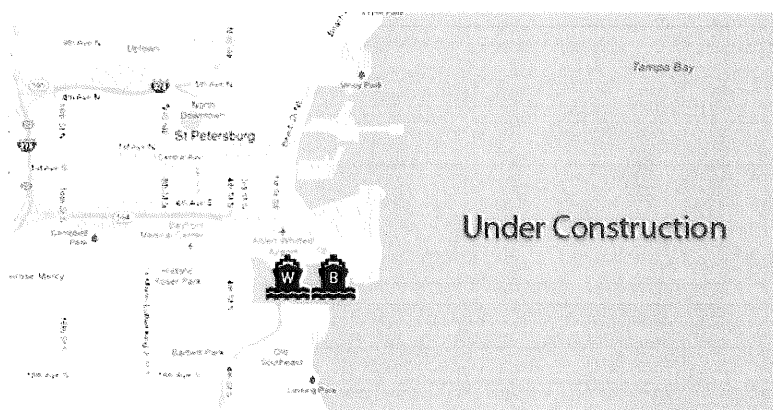
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FIOTweet Please see the announcement for the RESTORE Act FL Center of Excellence research grant opportunity.... fb.me/6jCV7Rtsk

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13. CHNEP PROGRAM REPORT

CHNEP activities for the past quarter will be presented, including:

- a. Watershed Summit Proceedings
- b. Program Deliverables

Recommendation: No action required; for information and discussion only.

Attachment: CHNEP Deliverables for October 1, 2014 – January 30, 2015.

14. MEMBER COMMENTS

15. PUBLIC COMMENTS

16. NEXT MEETING TOPICS, DATE AND LOCATION

Thursday April 9, 2015 in Bartow.

CHNEP Deliverables for October 1, 2014 – January 30, 2015

| Date | Task | Task | Deliverable |
|-------------|-------------|-----------------------|---|
| 10/1/2014 | 1.1 | Management Conference | Ribbon-cutting and welcome to the City of Punta Gorda. |
| 10/9/2014 | 1.1 | Management Conference | TAC meeting. |
| 10/9/2014 | 1.1 | Management Conference | Updated Time and Deliverable Tracking system for FY15. |
| 10/15/2014 | 1.1 | Management Conference | CAC met at Laishley Community Center in Punta Gorda to discuss several issues being considered by the entire Management Conference. Members toured the CHNEP office before and after the meeting. |
| 10/27/2014 | 1.1 | Management Conference | Letter of Support. |
| 10/30/2014 | 1.1 | Management Conference | Completed 2 separate maps which illustrate the National Estuary Program. |
| 10/31/2014 | 1.1 | Management Conference | Management Committee meeting. |
| 11/7/2014 | 1.1 | Management Conference | CHNEP participation in government ethic training. |
| 11/13/2014 | 1.1 | Management Conference | Policy Committee meeting. |
| 11/14/2014 | 1.1 | Management Conference | Field PO issued for ANEP. |
| 11/25/2014 | 1.1 | Management Conference | Letters of support transmitted for 12 Florida Forever Projects in CHNEP Study Area. |
| 12/12/2014 | 1.1 | Management Conference | CAC met to discuss outreach projects and further the outreach inventory. |
| 12/17/2014 | 1.1 | Management Conference | Presented Funding overview for new host agency City Council. |
| 1/28/2015 | 1.1 | Management Conference | Confirmation of additional funds due to the CHNEP. |
| 10/29/2014 | 1.2 | RPC-related Admin | 4 grants descriptions and associated resolutions. |
| 10/30/2014 | 1.2 | RPC-related Admin | 4 appropriation PGCC Consent Agenda items. |
| 10/31/2014 | 1.2 | RPC-related Admin | Travel policy for personal autos. |
| 10/3/2014 | 1.3 | Grants & Contracts | SWFWMD FY12 final diversity report transmitted, final invoice transmitted. |
| 10/15/2014 | 1.3 | Grants & Contracts | Resolution passed. |
| 10/16/2014 | 1.3 | Grants & Contracts | Fully loaded rates calculated and QCed by finance. |
| 10/27/2014 | 1.3 | Grants & Contracts | Site visit Morgan Park. |
| 10/28/2014 | 1.3 | Grants & Contracts | SWFWMD quarterly reports for FY12, FY13, and FY14 agreements. |

CHNEP Deliverables for October 1, 2014 – January 30, 2015

| Date | Task | Task | Deliverable |
|-------------|-------------|-----------------------------|---|
| 10/28/2014 | 1.3 | Grants & Contracts | EPA semi-annual press report/annual accomplishment report. |
| 10/29/2014 | 1.3 | Grants & Contracts | FDEP FY14/15 draft grant agreement SOW and budget. |
| 10/30/2014 | 1.3 | Grants & Contracts | Volunteer Oyster Habitat Monitoring CPI proposal submitted. |
| 11/17/2014 | 1.3 | Grants & Contracts | Draft application out for comment. |
| 11/20/2014 | 1.3 | Grants & Contracts | SFWMD Coop funding application submitted. |
| 12/10/2014 | 1.3 | Grants & Contracts | Morgan Park proposal submitted to NFWF. |
| 12/17/2014 | 1.3 | Grants & Contracts | Sent revised agreements to Procurement. |
| 12/23/2014 | 1.3 | Grants & Contracts | Set up drawdown for MHA. |
| 1/12/2015 | 1.3 | Grants & Contracts | CE-95483611 Lobbying certificate submitted. |
| 1/13/2015 | 1.3 | Grants & Contracts | CE-95483611 Final Report submitted. |
| 1/23/2015 | 1.3 | Grants & Contracts | SWFWMD 1QFY15 reports transmitted. |
| 11/12/2014 | 2.1 | Communications Publications | Produced the CHNEP 2015 calendar with 385 images submitted by 187 people. A total of 32,000 copies were printed and distributed with 4,560 mailed to Harbor Happenings subscribers and supplies were provided to libraries, centers and others. This issue was sponsored by Mosaic (\$2,500) as well as donations received by the Friends of Charlotte Harbor Estuary. The Fall 2014 issue was redesigned and stitched as additional pages into every calendar. |
| 10/6/2014 | 2.2 | Events/ Outreach | Students from Cape Coral and Hardee County high schools participated in the CHNEP Student Advisory Council, guiding the CHNEP on how to reach their peers, presenting projects completing and identifying new projects to do themselves. Thirty students met at Fazzini Wilderness Center in Hardee County. |
| 10/19/2014 | 2.2 | Events/ Outreach | Exhibited at "Ding" Darling Family Fund Days on Sunday, October 19, 2014 at the National Wildlife Refuge on Sanibel Island. Approximately 1,500 attended this event, which culminated a series of public programs. |
| 10/29/2014 | 2.2 | Events/ Outreach | Exhibited at Sarasota County Sustainable Communities Workshop. The CHNEP is an organizational partner. |
| 11/6/2014 | 2.2 | Events/ Outreach | The Friends of Charlotte Harbor Estuary held their annual meeting. In the past year have been reinstated by IRS as a 501©3 and received the nonprofit indicia from USPS. The Friends accept donations, sponsor and registration fees. In the past year they have supported the CHNEP with its website, every event held and supported select publications. |
| 11/14/2014 | 2.2 | Events/ Outreach | Attended the Climate Change Informal Educator Workshop at The Florida Aquarium focusing on ocean and climate literacy for non-formal educators throughout the state of Florida. |
| 11/18/2014 | 2.2 | Events/ Outreach | Attended the U.S. National Ramsar Committee meeting in Naples. |

CHNEP Deliverables for October 1, 2014 – January 30, 2015

| Date | Task | Task | Deliverable |
|-------------|-------------|------------------------|--|
| 11/22/2014 | 2.2 | Events/ Outreach | The 15th annual Charlotte Harbor Nature Festival was held on Saturday, November 22 from 10 a.m. to 3 p.m. at the Charlotte County Sports park. Approximately 2,500 people attend to "connect with nature" and learn about the environment through more than 50 educational exhibits, guided walks and wagon rides and much more. Thanks to the sponsors, the festival was again free to exhibit and to attend and a tote bag was given out. |
| 12/3/2014 | 2.2 | Events/ Outreach | "Coastal Community Planning," a professional development workshop taught by NOAA Coastal Services Center, was offered to CHNEP partners. Twenty-eight people attended the two-day training held at Venice Train Depot. Sponsors include NOAA CSC, Sarasota County and Friends of Charlotte Harbor Estuary, Inc. |
| 12/8/2014 | 2.2 | Events/ Outreach | "Managing Visitor Use," a professional development workshop taught by NOAA Coastal Services Center, was offered to CHNEP partners. Thirty people attended the two-day training held at Woodmere Park. Sponsors include NOAA CSC, Sarasota County, the Friends of Charlotte Harbor Estuary, Inc. and Jelks Family Foundation. |
| 1/28/2015 | 2.2 | Events/ Outreach | Spoke at Florida Aquarium's Regional Ocean Conference for Students. |
| 11/1/2014 | 2.3 | Public Outreach Grants | Manatee Park held a Butterflies, Bees, Birds, Blooms and more program. They also recognized CHNEP for support of interpretive signs. |
| 1/8/2015 | 2.4 | Micro Grants | Finalized guidance and procedures to request CHNEP micro-grants. Distributed announcement. |
| 10/14/2014 | 3.1 | Research Coordination | Support letter for "Linking Seagrass Beds, Hydrodynamics, and Cyanobacterial Blooms in Changing Estuarine-Coastal Environment: Ecosystem Modeling in the Charlotte Harbor and Caloosahatchee Estuary, FL." It is a funding request from NOAA by Harbor Branch Oceanographic Institute to model seagrass and HAB interactions, using the Weisberg/Zheng hydrodynamic model. |
| 10/22/2014 | 3.1 | Research Coordination | CHNEP participation in RAMP. |
| 10/22/2014 | 3.1 | Research Coordination | Coral Creek Restoration Ground-Breaking. |
| 10/28/2014 | 3.1 | Research Coordination | Paul Cough, Director, Oceans and Coastal Protection Division, OWOW, EPA toured CHNEP, SBEP and TBEP areas with their directors. CHNEP Director Lisa Beever met Mr. Cough at the airport and showed him the Daniels Road median wetland, 10-mile filter marsh, Six Mile Cypress Slough and Webb Lake. The tour continued the next morning with Punta Gorda's completed climate change adaptations, new CHNEP offices, Spring Lake Park, Coral Creek restoration site, Myakka Forest and Cow Pen Slough restoration. |
| 11/5/2014 | 3.1 | Research Coordination | CHNEP participation in FL Association of Benthologists Annual Meeting. |
| 11/17/2014 | 3.1 | Research Coordination | CHNEP participation in CHEVWQMN QA for Pine Island volunteers. |
| 11/17/2014 | 3.1 | Research Coordination | Maps of potential oyster restoration sites prepared. |
| 12/4/2014 | 3.1 | Research Coordination | CHNEP participation in field visits of potential oyster restoration sites. |
| 12/30/2014 | 3.1 | Research Coordination | CHNEP participation in field visits of potential oyster restoration sites in Upper Lemon Bay. |

CHNEP Deliverables for October 1, 2014 – January 30, 2015

| Date | Task | Task | Deliverable |
|-------------|-------------|------------------------|---|
| 1/14/2015 | 3.1 | Research Coordination | CHNEP hosts SW FL Oyster Working Group Meeting. |
| 10/6/2014 | 3.2 | Targeted Research | CHNEP participation in CHEVWQMN monthly water quality sampling. |
| 11/3/2014 | 3.2 | Targeted Research | CHNEP participation in CHEVWQMN monthly water quality sampling. |
| 12/1/2014 | 3.2 | Targeted Research | CHNEP participation in CHEVWQMN monthly water quality sampling. |
| 1/5/2015 | 3.2 | Targeted Research | CHNEP participation in CHEVWQMN monthly water quality sampling. |
| 10/13/2014 | 4.1 | Watershed Coordination | CCHMN monthly water quality monitoring in Lower Charlotte Harbor conducted. |
| 10/15/2014 | 4.1 | Watershed Coordination | Brief committee on meeting with Treasury. |
| 10/16/2014 | 4.1 | Watershed Coordination | CHNEP participation if FWC Coral Creek Restoration Fishery Monitoring. |
| 10/21/2014 | 4.1 | Watershed Coordination | Revised RESTORE Act score sheet transmitted. |
| 10/27/2014 | 4.1 | Watershed Coordination | Morgan Park, Arcadia, site visit for possible restoration project. |
| 10/29/2014 | 4.1 | Watershed Coordination | Recommended Comprehensive Plan language for City of Punta Gorda. |
| 10/30/2014 | 4.1 | Watershed Coordination | CHNEP hosted SW FL Oyster Working Group Subcommittee. |
| 11/10/2014 | 4.1 | Watershed Coordination | Estero Bay Agency on Bay Management met. A letter regarding the Marina at Coconut Point was approved. |
| 11/14/2014 | 4.1 | Watershed Coordination | 3.5 hour WETPLAN workshop with CEUs, over 40 attendees. |
| 11/17/2014 | 4.1 | Watershed Coordination | Letter of support for the EPA proposal entitled “Gulf National Estuary Program (NEP) and Lake Pontchartrain Basin Restoration Program (LPBRP) Comprehensive Plan Implementation Program”. |
| 11/20/2014 | 4.1 | Watershed Coordination | CCHMN monthly water quality monitoring in Lower Charlotte Harbor conducted. |
| 11/20/2014 | 4.1 | Watershed Coordination | Draft Restoration Plan Update was sent to Management Conference as a KMZ file, to view in GoogleEarth. |
| 11/23/2014 | 4.1 | Watershed Coordination | CHNEP "Estuarium" demonstrated at Charlotte Harbor Nature Festival. |
| 11/24/2014 | 4.1 | Watershed Coordination | Program Scientist provisionally selected by Gulf Coast Restoration Council to serve as technical reviewer for RESTORE Act proposals. |
| 11/24/2014 | 4.1 | Watershed Coordination | Director provisional selected as a Science Reviewer by the Gulf Coast Ecosystem Restoration Council. |
| 12/2/2014 | 4.1 | Watershed Coordination | CHNEP participation in SFWMD Caloosahatchee River Community Forum. |
| 12/2/2014 | 4.1 | Watershed Coordination | Submitted remarks to ARC staff. |

CHNEP Deliverables for October 1, 2014 – January 30, 2015

| Date | Task | Task | Deliverable |
|-------------|-------------|------------------------|---|
| 12/3/2014 | 4.1 | Watershed Coordination | Submitted letter of Support for Myakka Island FF project. |
| 12/5/2014 | 4.1 | Watershed Coordination | WET PLAN Workshop. |
| 12/8/2014 | 4.1 | Watershed Coordination | CHNEP Science Forum: Establishing Tidal Caloosahatchee River SAV Targets. |
| 12/15/2014 | 4.1 | Watershed Coordination | Conducted Estero Bay Agency on Bay Management. Presented draft State of the Bay report, prepared by the SWFRPC and CHNEP, funded by the City of Bonita Springs. |
| 1/9/2015 | 4.1 | Watershed Coordination | Director completed the review of the Cote Blanche hydrologic restoration in Louisiana for the Gulf Coast Ecosystem Restoration Council as a peer reviewer. |
| 1/15/2015 | 4.1 | Watershed Coordination | CHNEP Program Scientist completed review of proposed RESTORE proposal as guest reviewer for Gulf Coast Ecosystem Restoration Council. |
| 1/21/2015 | 4.1 | Watershed Coordination | CCHMN monthly water quality monitoring in Lower Charlotte Harbor conducted. |
| 1/26/2015 | 4.1 | Watershed Coordination | Presented CHNEP Update at the Everglades Restoration Working Group and Science Coordination Group joint meeting. |
| 1/27/2015 | 4.1 | Watershed Coordination | Workshop with 45 attendees. |
| 10/23/2014 | 4.2 | Everglades Restoration | Everglades Restoration Working Group/Science Coordination Group meeting. |
| 1/22/2015 | 5.1 | Legislative Agenda | Thank you letter completed. |