THE MAGAZINE OF THE COASTAL & HEARTLAND NATIONAL ESTUARY PARTNERSHIP

HARBOR HAPPENINGS

Uniting Central and Southwest Florida to protect water and wildlife

Spring / Summer 2022: Volume 26, Issue 1

Resiliency Amidst Change

The Coastal & Heartland National Estuary Partnership (CHNEP) is accelerating resiliency efforts across the region, helping communities to be better prepared and natural resources to be better protected in the face of changing climate conditions. More natural water levels and flows, as well as restored and well-managed environmentally sensitive lands, create healthy ecosystems that can more easily adapt and withstand current and future climate stressors. Learn about what CHNEP is doing on these fronts to advance collaboration, research, restoration and public engagement throughout Central and Southwest Florida.

Photo by Linda Moreau

EXECUTIVE DIRECTOR UPDATE

As waters warm and rise, we are documenting significant changes in vegetation, aquatic and terrestial wildlife types and behavior, and which areas are saltwater versus fresh throughout our region. This is affecting everything in our natural environment, as well as our own water supplies and flood protection.
To be able to adapt and prepare, we need to better understand these current and coming changes. This requires enormous scientific data collection, analysis, and modeling. The CHNEP has been undertaking all of these activities in different portions of our large service area, as funding has allowed.

We are excited to share with you that we are about to get a huge increase in federal funding, along with many other federal programs and agencies working on this and other environmental issues, through the Bipartisan Infrastructure Law (BIL) that passed Congress and was signed by the President. BIL will provide CHNEP with 5-years of funding to undertake larger regional multi-year projects, targeting enhancing resiliency and advancing environmental justice across the region.

Resiliency first requires that we preserve and restore key natural ecosystems that are able to naturally remove carbon and nutrient pollution. The CHNEP is currently funding removing exotics and replanting natives in the Myakka Headwaters and Pine Island Flatwoods Preserves. We are also building models that can map changes to groundwater levels and surface water flows in response to climate change. This guides how to restore more natural water levels to wetlands and rivers that will improve their health. Healthy habitats are more able to weather climate stressors, pushing encroaching seawater back with clean freshwater and providing places for storm rainfall to go so it doesn't flood our communities.

With BIL funding, we will now also be able to offer assistance to each of our ten counties to build Comprehensive Vulnerability Assessments that identify which key community assets (schools, hospitals, fire stations, roadways, etc.) are at risk from high heat, rainfall, or other climate changes. That information is needed to know which buildings or roadways will need to be retrofitted to provide key emergency services during future storm events.

Jennifer Hecker

There will be a special focus in Assessments undertaken by CHNEP to look at disadvantaged communities in each of these counties - working to ensure that our most vulnerable populations are adequately protected. An example is that many live in manufactured homes that may not be able to withstand high winds so need nearby hurricane-proof storm shelters, or work outside for extended periods in high heat so cooling stations or centers are needed. Others may live near pollutant sources where they are at risk of increased exposure from releases due to high rainfall events. Addressing inequities where climate-driven factors could disporportionately affect parts of a community ensures that we are working towards environmental justice with solutions and plans that provide added resources where needed.

The CHNEP has been at the forefront of climate work, as a co-author of the first Climate Adaptation Plan for the City of Punta Gorda nearly 14 years ago. However, an enormous amount of work is still needed to advance resiliency throughout the CHNEP area and now, we have significant funding to be able to do more of it.

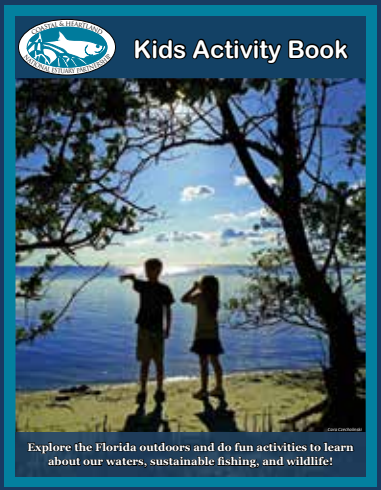
Thank you for your efforts to protect our water and wildlife.

Jennifer Hecker

Steve Russell

Kids Activity Books

The CHNEP is now offering free Kids Activity Books! You can find your copy at local libraries throughout our 10-County service area or on the CHNEP website as a free downloadable electronic booklet (chnep.org/publications). Learn about the Water Cycle, Watersheds, Habitats, Wildlife, and Sustainable Fishing through fun hands-on educational activities that you can do right at home together.



CHNEP 2023 Nature Calendar

The 2023 Calendar Photo Contest was an outstanding success! Our Citizen's Advisory Committee hosted their annual jurying event in July to assist selection of the winning entries.

These images showcase the beauty of our local environment and wildlife while illustrating the importance of protection and sustainability. Sign up to receive the 2023 CHNEP Nature Calendar at: chnep.org/annual-nature-calendar

CHNEP Conservation Grants Empower Community Conservation

We are pleased to support various conservation projects and activities through our Conservation Grants Program, which are offered year-round during three funding cycles. Funding amounts range from $500 - $3,000 and support environmental education, restoration projects, water quality initiatives, and other efforts that further the CHNEP mission.

If you are interested in learning more or applying, please visit: chnep.org/conservation-grants. Turn to page 10 in this issue to see examples of recently funded and completed CHNEP Conservation Grant projects. These resources are here to empower conservation efforts in your community!

Harbor Happenings, Spring/Summer 2022: Volume 26, Issue 1

CHNEP publishes this educational magazine on recycled paper. Sign up for a free subscription on our website - **www.CHNEP.org.**

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2022 Southwest Florida Climate Summit

The Coastal & Heartland National Estuary Partnership hosted the 2022 Southwest Florida Climate Summit on April 7th & 8th, with both virtual participation and in-person attendance at the Collaboratory in Fort Myers. The two day-long event was comprised of four sessions: Climate Impacting Water and Wetlands, Climate Impacting Land and Wildlife, Climate Impacting Communities, and Building More Resilient Communities - each featuring interactive audience question and answer periods.

The summit began with the Climate Impacting Water and Wetlands session, starting with a video address from Senator Marco Rubio of the bipartisan Senate Climate Solutions Caucus, who stressed the importance of restoring the Everglades and the Florida Reef Tract to improving climate resilience. There was a review of federal legislation relating to protecting Florida's environment, including the Growing Climate Solutions Act, a bipartisan bill to create climate mitigation markets to incentivize more sustainable agriculture, a bill to put more federal funds towards the NOAA Corals Program, and the introduction of the South Florida Ecosystem Enhancement Act which will strengthen the ability of governmental entities to fund ecosystem restoration and monitoring efforts.

Summit videos and materials are available online at: chnep.org/2022-climate-summit

U.S. Department of Interior Assistant Secretary Shannon Estenoz outlined how the federal Fish and Wildlife Service and National Park Service are working to protect habitats and species who are at risk.

On the state level, Commissioner of Agriculture Nikki Fried from the Florida Department of Agriculture and Consumer Services outlined numerous regulatory improvements to the agriculture and industry sectors and how those will enhance resiliency.

Florida Chief Resiliency Officer Wesley Brooks gave an overview of the steps that the Florida Department of Environmental Protection is taking as well, including new resiliency tools, resources, and planning.

In State Climatologist David Zierden's address, he explained how rising temperatures, increased

Climate Summit Keynote Speakers

State of Florida Senator Mark Rubio

US Department of Interior Assistant Secretary Dr. Shannon Estenoz

State of Florida Chief Resilience Officer Dr. Wes Brooks

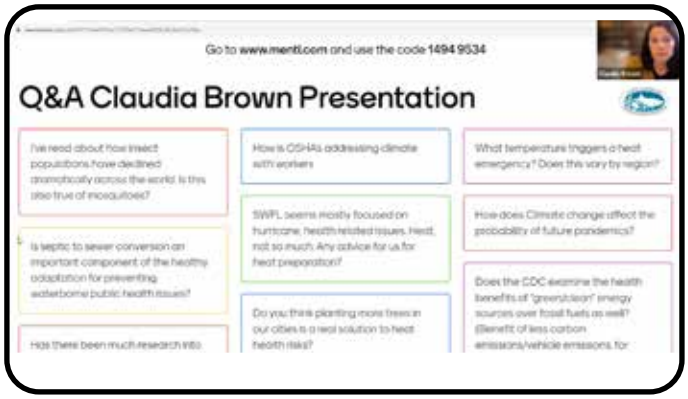
Commissioner of FL Agriculture & Consumer Services Nikki Fried

The Coastal & Heartland National Estuary Partnership was honored to bring together partners and stakeholders from multiple agencies, universities, and backgrounds to discuss positive solution-based approaches grounded in science for furthering climate resiliency in our state.

150+ participants met for the two day summit on Climate Change.

The *Citizen's Climate Change Action Guide* at the 2022 Climate Summit webpage on chnep.org features information about resources and volunteer groups working to further Climate Action in Florida, including:

- FL Clinicians for Climate Action
- Growing Climate Solutions
- Florida Climate Institute
- Florida Climate Center
- Southeast Regional Climate Center
- Climate for Health
- Environmental Defense Fund
- Alliance for Climate Education
- Climate Literacy & Energy Network
- The Florida Climate Pledge
- Climate Adaptation Expolorer
- Florida Water and Climate Alliance
- U.S. Climate Resiliency Toolkit



Both in-person and virtual participants actively engaged in the dialogue by using the web-based program to ask questions and receive real-time answers from each presenter.

Thank you to our Event Sponsors:

WGCU PBS npr

Collaboratory

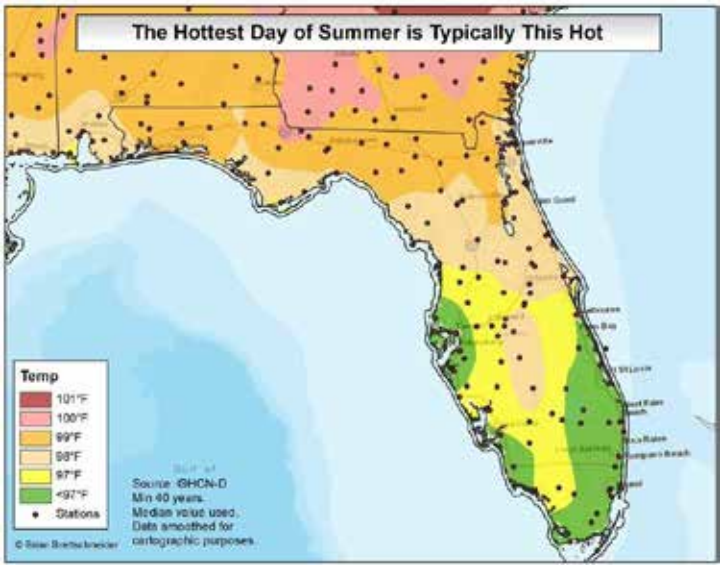
extreme rainfall events, stronger storms, and rising sea levels have affected Florida and continue threatening ecosystems across the globe. Day One presentation topics also included impacts on stormwater generation, ocean acidification, and saltwater intrusion.

Florida Department of Agriculture and Consumer Services (FDACS) Advisor Christopher Pettit spoke on Florida's evolving agricultural and energy sources and Center for Disease Control and Prevention (CDC) Health Scientist Claudia Brown presented on the impacts of climate change to human health.

The Seminole Tribe of Florida's Climate Resiliency Officer Jill Horwitz and Director of Southeast/ Southwest Regions Public Archeological Network Sara Ayers-Rigsby went over climate change implications to tribal lands, as well as historical, cultural, and archaeological resources.

Participants also heard presentations on Enhancing Resiliency with Wetland Restoration, Climate Change and Social Vulnerability, Evolving Agriculture and Energy Sources, Public Health, and other topics.

The event was well attended with over 150 participants, and we are already planning and looking forward to next Spring's Summit!



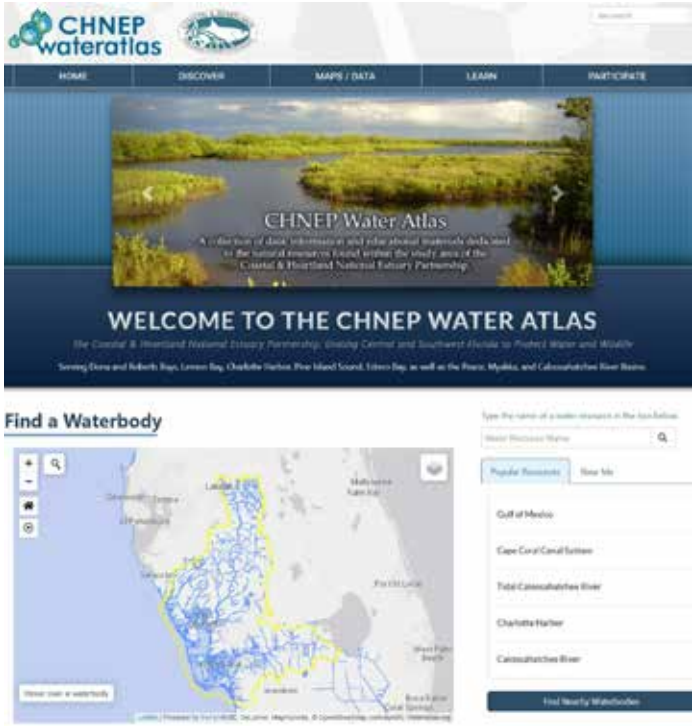
WELCOME TO THE CHNEP WATER ATLAS

The CHNEP Water Atlas is a web-based resource center for citizens, scientists, and policy makers.

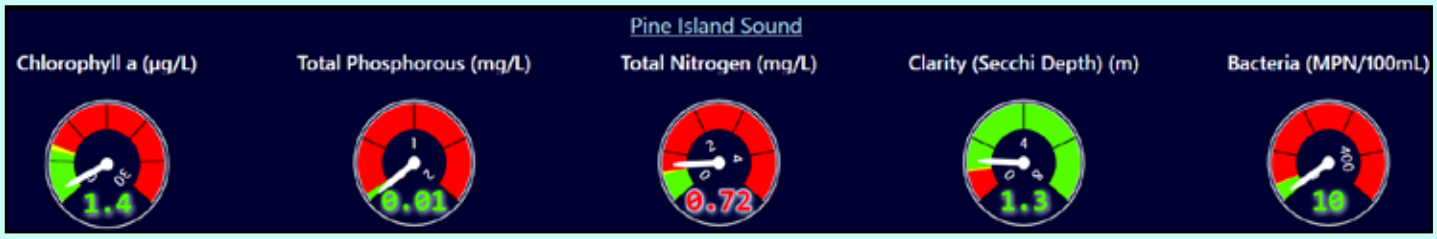
The CHNEP Water Atlas is a one-stop shop to find local data about water quality, flow, and habitat to information about educational events and volunteer resources in Central and Southwest Florida. The site includes up-to-date and historical data, trend analyses, interactive maps and tools, and much more. It is an easy and fast way to continuously learn and stay current on the latest information about local waterways.

The CHNEP Water Atlas is organized by waterbody and topics such as water quality and habitat for easy-viewing. Users can go to various waterbody pages to view and download data on nutrient chemistry, water clarity, bacteria, impairment status, and more.

As climate change and sea-level rise are of concern for our local habitats now and in the future, a Habitat Resiliency to Climate Change (HRCC) interactive map has been added for users to take a closer look at what kind of impacts our waterways and habitats may experience given the most recent sea level rise science. The maps illustrate the predicted changes in habitat range and size from 2016 to 2120.



The Rainfall Estimates page is another useful tool provided on the CHNEP Water Atlas. This data is generated using radar-based rainfall estimates and historical trends to predict the average amount of rainfall in inches for an area. You can simply select an area of interest on the map to receive detailed estimates of historic, total, and average rainfall on a monthly scale.



Shown above is data from the new Water Quality Dashboard, which can be found under the Maps and Data tab on the CHNEP Water Atlas. This tool allows you to select your waterbody to look at recent water quality sampling data for Chlorophyll a, Total Phosphorous, Total Nitrogen, Water Clarity, and Bacteria. The dials point to whether the recent sample is within healthy thresholds (green), starting to exceed those thresholds (yellow), or is not meeting thresholds (red) as of that time.

www.chnep.wateratlas.usf.edu

Conduct Your Own Analysis!

Use the Data Download and Graphing Tool to graph water resource data and download information for your own analysis! You can select from various data types like water quality, hydrology, near real-time and can filter data by location, date, station, and more.

Interested in learning more about your surrounding habitat?

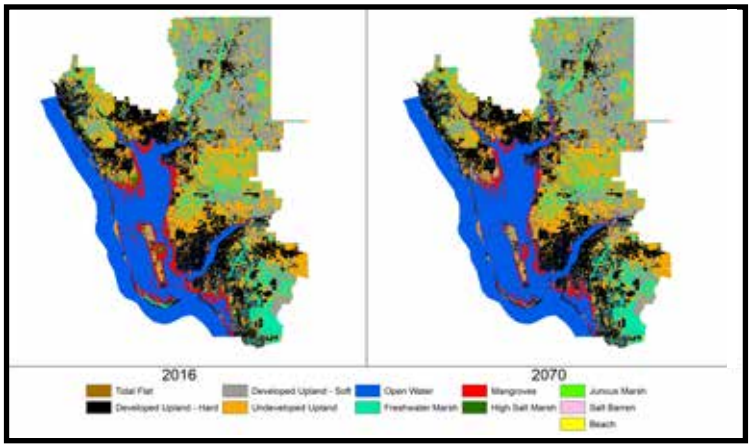
The CHNEP Waterbody Pages include a Habitat and Ecology section with local seagrass data and maps, artificial reef maps and much more.

These pages have current and historical seagrass acreage information and recent data collected in the field and provides an abundance of resources to help users understand the importance of seagrass monitoring. The Seagrass Pages also include an interactive mapper showing recent seagrass coverage and loss which are broken down by watershed basin for easy viewing. To learn more about seagrass on a regional scale, check out our new Seagrass Pages under the Maps and Data tab!

Additionally, the CHNEP Water Atlas includes a Habitat Restoration Needs (HRN) Interactive Mapping Tool where users can view maps of strategic conservation opportunities and management or restoration targets from the Habitat Restoration Needs plan for the CHNEP area.

New features are frequently being added, and data is updated often. The Coastal Conditions Map is an upcoming addition which will show locations of recently reported red tide, harmful algal blooms, bacteria, or pollution in the coastal CHNEP region.

The CHNEP Water Atlas also includes other habitat related information such as Clam Habitat Suitability Map and more!



Bringing it Home

Practical Tips for Personal Action

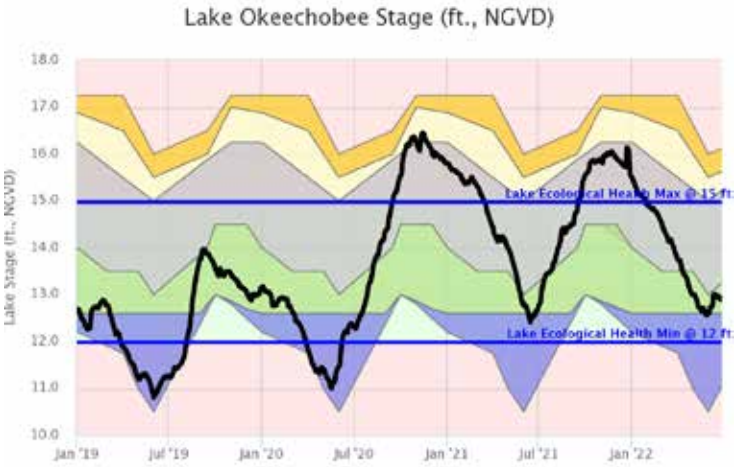
These tips reduce your energy bill and use less energy to help slow climate change!

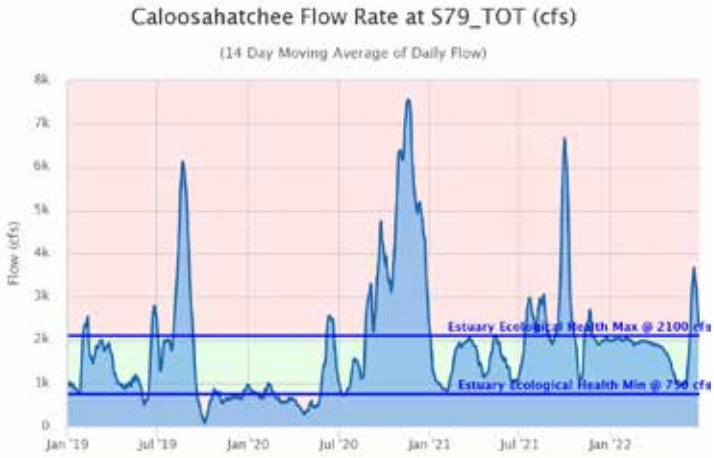
- **Turn thermostat on your A/C system to auto, keeping at 78 degrees when home and 82 when away**
- **Clean or replace your A/C filter regularly**
- **Set pool pump to 6 hours per day in the summer and 4 hours in the winter**
- **Replace incandescent bulbs with LED bulbs**
- **Lower the temperature on your water heaters down to 120 degrees Farenheit and cover it with an insulating blanket**

Lake Okeechobee & Caloosahatchee Estuary Tracker

Often referred to as "Florida's Inland Sea," Lake Okeechobee is the largest freshwater lake in the state, spanning 730 square miles. Lake Okeechobee sits adjacent to the CHNEP area, with its management and water quality having a direct and significant impact on the ecological health of the Caloosahatchee River, its estuary, and watershed.

The CHNEP recently added a new Lake Okeechobee & Caloosahatchee Estuary tracker page on the CHNEP Water Atlas. This page presents Lake Okeechobee levels and the corresponding rate of discharge (flow) of water into the Caloosahatchee River. It also overlays that information over the ecological targets for keeping the Lake and Caloosahatchee River healthy (see green band in graphs below).





Supporting Material Available on the Site:

- South Florida Water Management District Lake Okeechobee Website
- Current Lake Okeechobee Water Level
- Lake Okeechobee and Vicinity Report
- History of Flushing Dating from the 1800s
- Managing High Waters (UF/IFAS)
- Lake Okechoobee System Operating Manual

The Lake's water levels are controlled by a series of water control structures to its west, east and south. These structures and the Lake's operational protocols have provided flood protection and allowed for farming and communities in areas south of the Lake. However, they have also created unintended consequences in negatively affecting water quality in the Everglades, as well as the St. Lucie and Caloosahatchee Rivers and their respective estuaries.

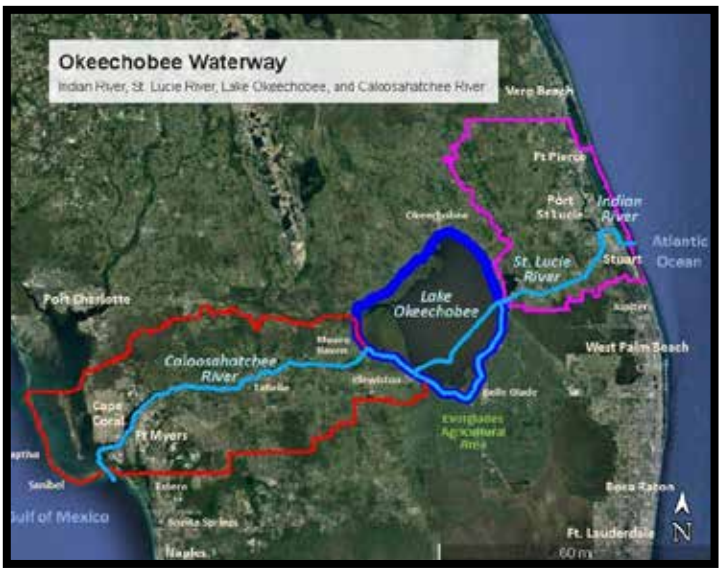
Lake Okeechobee is polluted with excessive nutrients and pesticides and as a result, experiences periodic blue-green algae blooms. High water levels mean the dike may breach, endangering public health and safety. Additionally, high Lake levels for sustained periods can cause the Lake's submerged aquatic vegetation to die off, resulting in decreased aquatic habitat and degraded water quality.

The Caloosahatchee River and its estuary require regular, adequate, and appropriate levels of freshwater flow from the Lake to maintain proper salinity levels in its tidal portion to support aquatic life. Therefore, proper management of Lake releases (discharges) is essential for maintaining the ecological health of the Caloosahatchee River and Estuary.

This tool on the CHNEP Water Atlas enables both the public and natural resource managers to readily see when Lake levels or River flows are too high or too low to support the aquatic life in them.

Google CHNEP Water Atlas online, go to the "Discover" tab, and then click on "Lake Okeechobee" for Lake Okeechobee level and Caloosahatchee River flow information.

Conservation Grant to Document Lake Releases



Brown water plume from the Sanibel River once the Beach Road weir was opened after Tropical Storm Elsa on July 8, 2021.

The CHNEP recently funded a project through our Conservation Grant program with the Sanibel-Captiva Conservation Foundation (SCCF) entitled: "A Birds Eye View of Caloosahatchee Conditions: A Weekly Collection of Aerial Photos of the Effects of Lake Okeechobee Regulatory Releases."

The project focused on the Caloosahatchee portion of the Okeechobee Waterway (outlined in red above) to visually document impacts of Lake Okeechobee releases on local water quality.

Beginning in April 2021, 360° aerial photographs were taken weekly at Lighthouse Beach Park on Sanibel Island under various conditions, ranging from ideal to damaging flows, at the S-79 lock on the Caloosahatchee River. During this time period, regulatory releases from Lake Okeechobee were minimal with the exception of a short period of time in May.

The images on this page were taken from the project webpage. This publicly accessible imagery is used to inform policymakers and the public as to the extent of impact from these discharges and water quality problems - such as algae blooms.

Blue-green algae blooms at the Caloosahatchee at S-79 on May 19, 2021

Brown water plume from the Sanibel River once the Beach Road weir was opened after Tropical Storm Elsa.

View recent aerial photos at the Sanibel-Captiva Conservation Foundation website online.

More Conservation Grants Projects

Below are some of the recent Conservation Grant projects that the CHNEP has awarded to various groups throughout the region to help them protect water and wildlife in their communities.

This Spring, a CHNEP Conservation Grant helped fund a Keep Charlotte Beautiful (KCB) initiative for the Keep America Beautiful Great American Cleanup to remove litter from beaches, parks, roadways, and waterways.

CHNEP provided KCB volunteers with requested materials needed to facilitate the annual clean up and over 290 volunteers gathered 5,280 pounds of debris! Volunteers worked at nine different locations including the Peace River, Harold Avenue Park, Manchester waterway, Port Charlotte High School, Cape Haze, and Englewood Beach.

Volunteers work collecting litter and debris to Keep Charlotte Beautiful (KCB) during the Great American Clean Up. Photos provided by KCB.

The CHNEP was also honored to provide need-based scholarships for children to attend the Friends of Lovers Key Eco-Arts Camp and learn about sea life, water quality, and other environmental education topics.

Additionally, a CHNEP Conservation Grant was awarded to the Environmental Conservancy of North Port for habitat restoration. The “Scrubby Flatwoods Lot Restoration Project” restored an 11,000 square foot vacant lot in active Florida Scrub-jay habitat.

The Florida Scrub-jay (pictured above) is the only species of bird that is endemic to Florida, meaning that it is native and only found in Florida. The Scrub-jay is Federally Threatened and its population has declined in recent years, habitat destruction and fragmentation due to development is the leading threat to this species.

Restoration of this area is crucial in supporting these wildlife populations and others including gopher tortoises. To restore this vacant lot, the Environmental Conservancy of North Port and their volunteers planted over 30 native species including sand pine and myrtle oak which bear acorns for Scrub-jays. Other native plants installed were muhly grass, common tickseed (pictured below), and gopher apple. These plants provide a food source for the Florida Scrub-jay and other wildlife.

Get Involved

CHNEP holds monthly free events for citizens to get involved in learning and engaging activities to protect the natural environment in our region.

Events that we have held over the past several months include the 2nd Vertical Oyster Garden Workshop, with dozens of volunteers building oyster reefs to put into local waterways to improve habitat and water quality (photo above). We also hosted a BioBlitz and Trail Blaze Volunteer Event at the Charlotte Harbor Environmental Center (CHEC) at Alligator Creek Preserve with over 20 participants helping to mark trails and catalogue plant and animal species observed on-site.

This past spring, CHNEP volunteers also participated in the Earth Day Paddle the Gulf BioBlitz event, which gathers useful data about biodiversity in an area for science and conservation, as well as help connect participants with the environment around them. We also held an Earth Echo Water Quality Sampling workshop where Citizen Scienitist volunteers learned how to monitor surface water for turbidity, pH, and dissolved oxygen. This data was then uploaded to the Earth Echo International database to help collect information on our local water resources.

There are so many ways to take an active role and get involved with CHNEP throughout the year. Upcoming events include: Eyes on Seagrass Monitoring, Horseshoe Crab Watch, Microplastics Workshop, Kids Fishing Clinics, and many more! To find out more details, visit chnep.org/monthly-volunteer-events and we look forward to hopefully seeing you there!

Follow CHNEP on Facebook and Instagram

Sign up today to be added to our volunteer list and receive notifications on upcoming opportunities at: www.chnep.org/get-involved.

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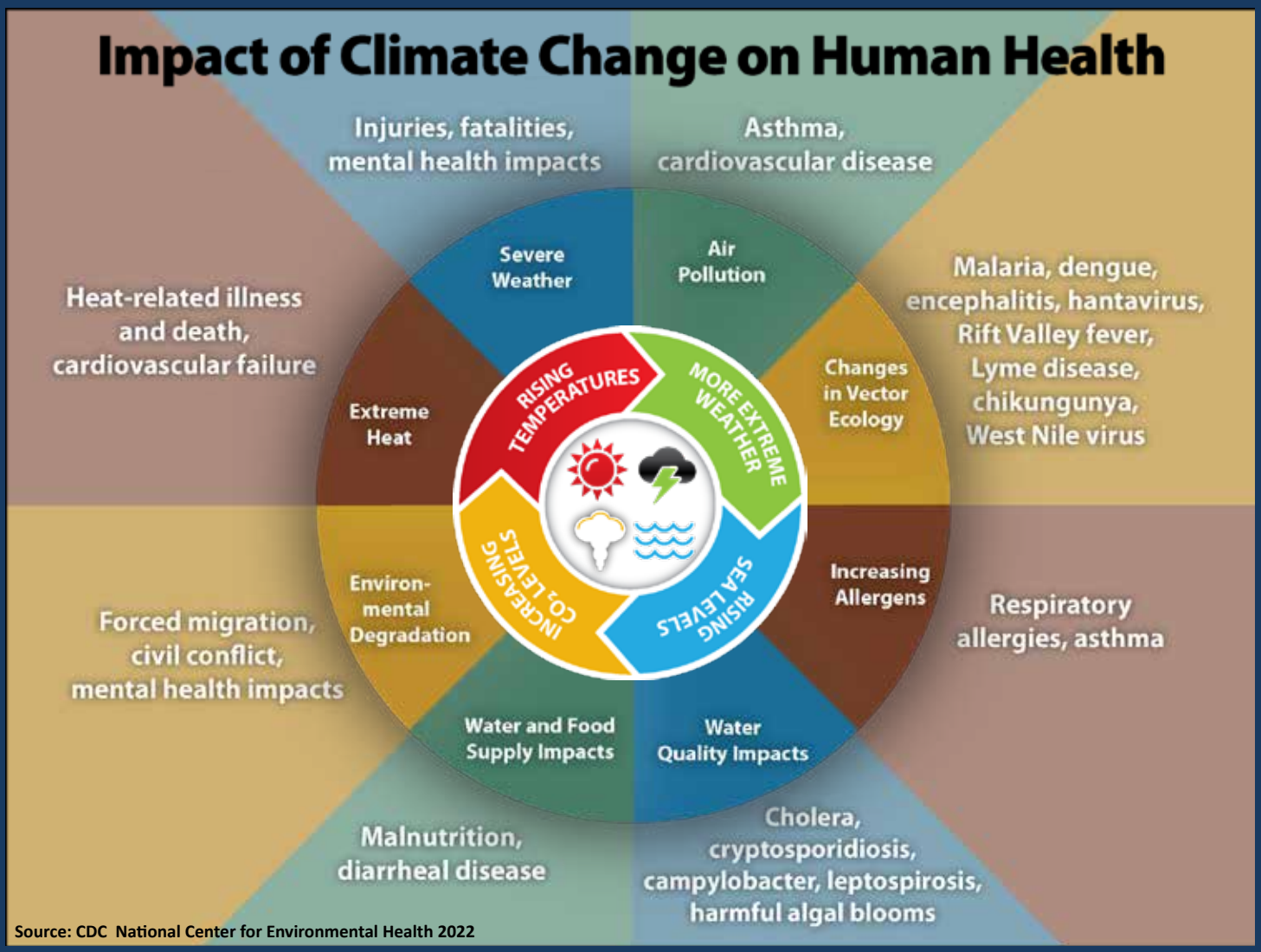

Source: CDC National Center for Environmental Health 2022