



<p>WQ-1: Maintain or improve water quality from year 2000 levels. By 2011, bring all impaired water bodies into a watershed management program such as reasonable assurance or basin management action plan. By 2015, remove at least two water bodies from the impaired list by improving water quality.</p>	<p>WQ-2: By 2015, develop and meet site-specific alternative criteria that are protective of living resources for dissolved oxygen, <i>chlorophyll a</i>, turbidity/total suspended solids, salinity and pesticides.</p>	<p>WQ-3: By 2025, reduce severity, extent, duration and frequency of harmful algal blooms (HABs), including macroalgae, phytoplankton and periphyton, through the identification and reduction of anthropogenic influences.</p>	<p>WQ-4: By 2025, meet shellfish harvesting standards year round for the Myakka River Conditionally Restricted area and the conditionally approved areas of Lemon Bay, Gasparilla Sound, Myakka River, Pine Island Sound Western Section and Pine Island Sound Eastern Section.</p>
<p>A. Participate in 303(d) total maximum daily load (TMDL), reasonable assurance and basin management action plan (BMAP) development and implementation. (26)</p> <p>B. Identify gaps in water quality data needed to calibrate the appropriate models used to assess impairments, determine TMDL limits and develop BMAPs. Coordinate monitoring programs and implement programs to fill data gaps. (32)</p> <p>C. Develop integrated ground and surface water quality and pollutant loading models.(23)</p> <p>D. Reduce nonpoint-source pollutants associated with stormwater runoff. Install or retrofit best management practices (BMPs) to maintain or improve water quality and flows. (24)</p> <p>E. Implement projects to restore or protect water quality to offset anthropogenic impacts. (23)</p> <p>F. Promote conservation, stormwater, and intergovernmental coordination within local comprehensive plans and land development codes to prevent the impacts of increasing levels of impervious surface and fill to achieve either a neutral impact on water quality and loss of groundwater and surface water storage or achieve restoration, based upon the condition of the receiving waters.</p> <p>K. Implement Florida-friendly plant programs, including the Florida Yards & Neighborhoods program, throughout the CHNEP study area. (41)</p> <p>L. Increase the use of personal and home best management practices by consumers throughout the watershed to reduce nonpoint-source pollution. (30)</p> <p>M. Support public involvement programs addressing water quality issues. (23)</p>	<p>G. Develop site-specific criteria for dissolved oxygen, <i>chlorophyll a</i>, turbidity/total suspended solids, salinity and pesticides as applicable. (48)</p> <p>H. Assess the bacteria, nutrient load and base flow impacts of septic systems, wastewater treatment plants and reuse water. Recommend effective corrective action. (27)</p> <p>M. Support public involvement programs addressing water quality issues. (23)</p>	<p>I. Determine the relationship between macro- and micro-nutrients and phytoplankton/ algal blooms. (22)</p> <p>M. Support public involvement programs addressing water quality issues. (23)</p>	<p>H. Assess the bacteria, nutrient load and base flow impacts of septic systems, wastewater treatment plants and reuse water. Recommend effective corrective action. (27)</p> <p>J. Provide central sanitary sewers to developed areas within 900 feet of waters such as estuarine shorelines, rivers, creeks, canals and lakes. (20)</p> <p>M. Support public involvement programs addressing water quality issues. (23)</p>
<h2 style="text-align: center;">Summary of Objectives and Actions</h2> <p>Numbers after the actions are the number of votes the action received in the survey, offering an indication of the priority. Where there are no numbers, the action was added after the survey or was transferred from consideration as an objective.</p>			

<p>HA-1: By 2015, identify, establish and maintain a more natural seasonal variation (annual hydrograph) in freshwater flows for:</p> <ul style="list-style-type: none"> • Caloosahatchee River. • Peace River and its tributaries. • Myakka River, with special attention to Flatford Swamp and Tatum Sawgrass. • Estero Bay and its tributaries. 	<p>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 .</p>	<p>HA-3: By 2020, enhance and improve to more natural hydrologic conditions water bodies affected by artificially created structures throughout the CHNEP study area. Reduce negative hydrologic effects of artificially created structures such as weirs, causeways, dams, clay settling areas and new reservoirs.</p>	<p>HA-4: By 2010, for each watershed, identify the linkages between local, water management district, state and federal government development permitting and capital programs affecting water storage, flood control and water quality. By 2012, identify and recommend reforms through tools such as comprehensive watershed management plans. By 2015, implement the reforms.</p>
<p>A. Develop a historic and current estuarine mixing model, focusing on salinity and indicator species that are sensitive to salinity changes, and better evaluate proposed capital and operations projects. (22)</p> <p>B. Develop integrated ground and surface water models. Address data gaps based on ecosystem needs and project needs for water withdrawals due to population growth, development, agriculture and mining. (37)</p> <p>C. Protect headwater tributaries from elimination and restore these tributary courses and their floodplains where opportunities exist.</p> <p>D. Set and achieve minimum aquifer levels. Reduce the rate of saltwater intrusion in the Floridan aquifer. (30)</p> <p>E. Establish minimum flows and levels (MFLs). (30)</p> <p>F. Participate in Everglades restoration and the Southwest Florida Feasibility Study. (26)</p> <p>P. Support public involvement programs addressing watershed management issues of hydrology, water resource issues, water conservation and water use. (28)</p>	<p>F. Participate in Everglades restoration and the Southwest Florida Feasibility Study. (26)</p> <p>G. Reestablish hydrologic watersheds to contribute flows to their historic receiving water bodies. (17)</p> <p>H. Identify natural, existing and target water budgets for each watershed. (24)</p> <p>P. Support public involvement programs addressing watershed management issues of hydrology, water resource issues, water conservation and water use. (28)</p>	<p>F. Participate in Everglades restoration and the Southwest Florida Feasibility Study. (26)</p> <p>I. Evaluate the impacts of man-made barriers to historic flows. (21)</p> <p>J. Build and restore water conveyances to have shallow, broad, vegetated and serpentine components that also restore floodplains.</p> <p>K. Identify the hydrologic and environmental impacts of surface water reservoirs on estuaries within the watershed.</p> <p>P. Support public involvement programs addressing watershed management issues of hydrology water resource issues, water conservation and water use. (28)</p>	<p>L. Encourage the use of low-impact techniques in new and old developments. (28)</p> <p>M. Limit big-pulsed release events. (20)</p> <p>N. Implement watershed (basin) initiative projects to address hydrologic alterations, loss of water storage and changed hydroperiod, and improve water quality. (9)</p> <p>O. Encourage, expand and develop incentives for the reuse of waters that are protective of water quality and natural hydrology. (27)</p> <p>P. Support public information programs addressing watershed management issues of hydrology, water resource issues, water conservation and water use. (28)</p>





<p>FW-1: Meet the stated objectives for the target extent, location and quality of the following habitats in the CHNEP study area: submerged aquatic vegetation (SAV), submerged and intertidal unvegetated habitats, mangroves, saltwater marsh, freshwater wetland systems, oyster bars, native upland communities and water column.</p>	<p>FW-2: 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 of existing conservation, preservation and stewardship lands.</p>	<p>FW-3: By 2020, on conservation, preservation, stewardship and other public lands, achieve controllable levels of invasive exotic plants, as defined by the Florida Exotic Pest Plant Council, and exotic nuisance animals, as defined by the Florida Fish and Wildlife Conservation Commission. Encourage and support the removal and management of invasive exotic plants on private lands.</p>
<p>A. Develop methods to enhance seagrass recovery from prop scarring. (25) B. Ensure navigation programs protect CHNEP study area habitat resources. (23) C. Restore freshwater and estuarine wetland areas, especially those adversely impacted by ditching, using methods such as the backfilling of ditches, the removal of spoil piles and the elimination of exotic vegetation. (35) D. Enhance fish and wildlife habitat along shorelines, including canals, lakes, riverine systems and artificial waterways. (28) E. Assess the impacts of canal/lake management activities on fish and wildlife. (17) F. Restore and protect a balance of native plant and animal communities. G. Provide additional support for environmental compliance and enforcement on land and water. Ensure uniform compliance and enforcement of environmental regulations and permitting criteria. (26) O. Provide multifaceted environmentally responsible boater education programs. (24) P. Support public involvement programs in habitat and wildlife issues. (26)</p>	<p>H. Bring environmentally sensitive land under protection through ownership and/or management and expand conservation areas, reserves and preserves, including undeveloped platted lots. (40) I. Advocate land acquisition and conservation easement programs. (31) J. Provide information on the economic, social and environmental benefits of protected land. (24) K. Acquire as much of Babcock Ranch as possible for public stewardship and promote conservation management of the entire ranch. (23) P. Support public involvement programs in habitat and wildlife issues. (26)</p>	<p>L. Where practical, identify and remove areas of heavy invasive exotic vegetation and exotic nuisance animals. (30) M. Promote local programs to research and eliminate nuisance exotic animal species. N. Provide education program on the impacts of invasive exotic plants and exotic nuisance animals. (15)</p>

<p>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 on radio or TV. A minimum of 50 percent of all residents in the CHNEP study area can recognize estuaries and watersheds. A minimum of 10 percent of all residents will be able to claim personal actions that protect the estuaries and watersheds.</p>	<p>SG-2: By 2010, the CHNEP will serve as a recognized resource to elected officials or their agents from local, state and federal government for policy advice.</p>	<p>SG-3: By 2010, the program long-term monitoring strategy and data management strategy will be implemented and resulting informational websites maintained systematically.</p>	<p>SG-4: By 2010, key geographic and scientific information will be presented in ways that are meaningful to the majority of the CHNEP study area population.</p>
<p>A. Gauge public involvement. (23)</p> <p>B. Provide people with opportunities to be involved in research, monitoring and restoration activities. (21)</p> <p>C. Identify underrepresented populations and develop methods to include them in estuary and watershed protection. (22)</p> <p>D. Produce watershed and estuary communication tools. (25)</p> <p>E. Offer grants to broaden participation of individuals and groups in implementing the CCMP. (29)</p> <p>F. Provide events that involve people in the stewardship of their local natural resources and opportunities to connect them to their watershed. (22)</p> <p>G. Implement target audience programs. (17)</p> <p>H. Incorporate estuary and watershed protection in educational curricula. (21)</p> <p>I. Conduct new resident programs to inform and encourage environmental stewardship. (25)</p> <p>J. Identify and showcase accomplishments and excellent examples including research findings, restoration, legislative changes and outreach successes using a variety of methods.</p>	<p>J. Identify and showcase accomplishments and excellent examples including research findings, restoration, legislative changes and outreach successes using a variety of methods.</p> <p>L. Implement the <i>Advocacy and Review Procedures</i>. (22)</p> <p>M. Vigorously pursue the <i>Long Range Funding Strategy and funding mechanisms</i> to implement watershed and estuary protection. (26)</p> <p>N. Update comprehensive inventories of research, restoration, legislative and outreach needs. (21)</p> <p>O. Create incentives to protect desired ecosystem resources. (29)</p> <p>P. Incorporate into federal, state and local permits and public works improved standard practices that better protect estuaries and watersheds. (30)</p> <p>Q. Build capacity for communities and their local leadership to mitigate and adapt to the effects of climate change through joint efforts.</p>	<p>R. Track and present monitoring data according to CHNEP adopted targets in Environmental Indicators. (17)</p> <p>S. Post raw data, geographic information system (GIS) and technical analysis on the Internet under the data management strategy. (15)</p>	<p>D. Produce watershed and estuary communication tools. (25)</p> <p>K. Present scientific information in a form readily understood by the majority of people. (25)</p>



Notes



In memory . . .

As a partnership program, the Charlotte Harbor National Estuary Program (CHNEP) has had hundreds of people help further its efforts to protect and restore the natural environment of southwest Florida. CHNEP has created a memorial page on its website at www.CHNEP.org to honor those who have contributed to the Program. A few of these supporters who have passed away are listed here.

David Y. Burr: Through his energy and commitment, Dave was a seminal participant in the creation of the CHNEP and served as the first acting director of the Program. He continually promoted watershed efforts that were critical for the estuaries, including the Estero Bay Agency on Bay Management. Dave was a native Floridian who received a M.S. degree in systems ecology and a B.S. degree in wildlife ecology from the University of Florida. He started his career with Southwest Florida Regional Planning Council, the CHNEP's host agency, in July 1975 and became the executive director on September 2002.

Amy Remley: Amy dedicated her career with Southwest Florida Water Management District as an environmental scientist to the protection, restoration and management of our marine, estuarine and freshwater ecosystems. Her goal was to leave this world a little bit better than it was before she got here. She succeeded.

Betty Talburt: Betty was a champion for advocacy and the protection of our beautiful natural world. She was instrumental in making the Charlotte Harbor Nature Festivals a success and was involved in many local environmental projects, including the CHNEP Citizens Advisory Committee, Keep Charlotte Beautiful, the Charlotte Harbor Audubon Society and the Nature Festival.

Richard Novak: Rich was a friend to resource managers, boaters and fisher-folk alike. Without his energy and drive, the Boca Grande Pass Clean-Up and the Charlotte Harbor Boater's Guide would not have come to fruition.

James R.E. Smith: "Smith" as he liked to be referred to, maintained an untiring desire for protection of the water resources of the Charlotte Harbor estuary. When he retired as a scientist for the U.S. Government, he came to Charlotte County to "fish and relax." He was reported that he only got to fish once and then became involved in a variety of water quality issues from septic tanks to water utilities. His strongest conviction as a scientist was that people at all levels – citizens, managers, elected officials – would utilize sound scientifically-based information as critical decisions were being considered. He never tired in delivering that message whether verbally or in writing during his 31 years in southwest Florida. Mr. Smith will be remembered for his willingness to provide support of all kinds to the natural systems of the Charlotte Harbor estuary along with his strong conviction for "just the facts!"

Mike Milligan: Mike of Center for Systematics and Taxonomy passed away in 2005 at the age of 54. He was active in the Florida Association of Benthologists (www.flbenthos.org) where he served as past president in 1990-91 and a recipient of their Award of Excellence in December 1997. Mike completed two projects for CHNEP: *Matlacha Pass Benthic Survey* and the *Tidal Caloosahatchee River Benthic Survey*.



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LEGEND

Watershed Basins

-  Dona & Roberts
-  Myakka River
-  Lemon Bay
-  Peace River
-  Charlotte Harbor
-  Pine Island Sound
-  Caloosahatchee
-  Estero Bay
-  Creeks and Rivers
-  Roads

