

**EPA Governmental Performance and Results Act (GPRA)
Matrix, Indicator Report**

NEP NAME: Charlotte Harbor National Estuary Program

Indicator	In Use or Under Development?	CCMP Objective	Type of Monitoring for Each In Use" Indicator	Entity Conducting/ Funding Monitoring	Parameters Being Monitored	Question the Indicator Will Help Answer
1. Water Quality	In Use.	WQ-1: Maintain or improve water quality from year 2000 levels. Bring all impaired water bodies into a watershed management program (such as Reasonable Assurance or Basin Management Action Plan) by 2015. Remove at least 2 waterbodies from the impaired list by improving water quality by 2015.	1. Water Quality Monitoring 2. Impaired Waters List 3. Water Quality trend assessment	1. All Partners 2. Florida Department of Environmental Protection 3. CHNEP	1. Water Quality Impairments. 2. Water Quality Trends.	1. How clean is our water? 2. Is water quality improving or declining?
2. Living Aquatic Resources	Under Development.	WQ-2: Develop and meet site specific alternative criteria which are protective of living resources for dissolved oxygen, chlorophyll a, turbidity/total suspended solids, and pesticides by 2015.	1. Water Quality Monitoring 2. Special Studies	1. All Partners 2. CHNEP and others	1. Parameters that affect living resources and are not sufficiently addressed by state standards.	1. Will our water sustain living resources?
3. Harmful Algal Blooms	Under Development.	WQ-3: Reduce severity, extent, and duration of harmful algal blooms (HABs), including macro-algae, phytoplankton, and periphyton through the identification and reduction of anthropogenic influences, by 2025.	1. HAB Counts and Locations 2. Cyanobacteria Counts 3. Nuisance blooms of macro-algae and filamentous green algae	1. FWC 2. Utilities 3. Newspapers	1. Red Tide 2. Blue-green algae 3. Nuisance blooms of macro-algae and filamentous green algae 4. Other toxic HABs	1. Are Harmful Algal Blooms excessive?
4. Shellfish Harvest	Under Development.	WQ-4: Meet shellfish harvesting standards year-round by 2025.	1. Shellfish harvest area closures	1. Department of Agriculture and Consumer Services	1. Shellfish harvest area closures	1. Are shellfish safe to eat?
5. Fresh-water flow Natural Seasonal Variation	In Use.	HA-1: Identify, establish, and maintain a more natural seasonal variation (annual hydrograph) in freshwater flows and levels by the year 2010 for: 1. Caloosahatchee River; 2. Upper Peace River and its tributaries; 3. Myakka River;	1. Flow gauges 2. Salinity data collection and analysis	1. U.S Corps of Engineers and USGS 2. Collection by various partners & spatial analysis by CHNEP and CHEC.	1. Amount of time that freshwater flows are within the natural seasonal variation for Caloosahatchee, Peace, Myakka, Estero 2. Isohaline locations in	1. Has freshwater flow changed from what would be expected from the natural situation?

		4. Estero Bay and its tributaries.			3 rivers.	
6. Historic Subbasins	Under Development.	HA-2: Restore, enhance, and improve where practical historic subbasin boundaries and natural hydrology for basins within the Charlotte Harbor NEP study area, with special attention to Outstanding Florida Waters, Class I waterbodies, and tributaries to Estero Bay by the year 2020.	1. Mapping of Historic Subbasins	1. CHNEP	1. Acreage restored to Historic Subbasins.	1. Do watershed areas drain to their historic waterbodies?
7. Artificial Structures	Under Development.	HA-3: By 2020, enhance and improve to more natural hydrologic conditions waterbodies affected by artificially created structures throughout the Charlotte Harbor NEP study area. Reduce negative hydrologic effects of artificially created structures such as weirs, causeways, dams, clay settling areas and new reservoirs.	1. Pre and post design assessments.	1. Sponsoring agency and CHNEP	1. Acreage restored.	1. Can artificial structures be improved to protect the environment?
8. Government Reforms	Under Development.	HA-4: By 2010, for each basin, identify the linkages between local, water management district, state, and federal governments' 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.	1. Evaluation and Appraisal Reports (EARs) 2. Comprehensive Watershed Plans 3. Ordinances and Rule Changes	1. Local Government 2. Local Government 3. Government, all levels.	1. Reforms.	1. How have governments reformed to improve hydrology and water quality?
9. SAV Extent & Quality	In Use	FW-1: Meet the stated objectives for the target extent, location, and quality of the following habitats in the Charlotte Harbor NEP study area: b) native submerged aquatic vegetation should be maintained and restored at a total extent and quality no less than caused by natural variation.	1. Mapping of Seagrass every 2 years. 2. Seagrass transects every quarter 3. Mapping of Prop Scars every 8 years. 4. Independent Fisheries Monitoring	1. Water Mgmt Districts 2. FDEP 3. CHNEP and FWRI 4. Fish & Wildlife Conservation Commission	1. Seagrass acreage by seagrass segment 2. Seagrass fall % cover by species, deep edge. 3. Prop scar acreage, severity, location 4. Fish Community Composition.	1. Are SAV extents changing over time? 2. Is the habitat value of SAV changing over time?
10. Submerged and Intertidal Habitats Extent & Quality	In Use	FW-1: Meet the stated objectives for the target extent, location, and quality of the following habitats in the Charlotte Harbor NEP study area: b) maintain the existing extent and location within range of natural variability of submerged and intertidal un-vegetated habitats	1. Mapping of Intertidal and Submerged Habitats every 2 years. 2. Benthic Macro-invertebrate abundance and diversity assessment. 3. Independent Fisheries	1. Water Management Districts 2. CHNEP and Mote Marine Laboratory 3. Fish & Wildlife	1. Submerged and intertidal Unvegetated Habitat extent. 2. Benthic Macro-invertebrate abundance and diversity. 3. Fish Community Composition.	1. Are Submerged and intertidal Unvegetated Habitat extents changing over time? 2. How productive and diverse are Submerged and

		(especially mud flats and sand flats) and improve the habitat quality;	Monitoring.	Conservation Commission		intertidal Unvegetated Habitats?
11. Mangrove Extent & Quality	In Use	FW-1: Meet the stated objectives for the target extent, location, and quality of the following habitats in the Charlotte Harbor NEP study area: c) manage natural mangrove habitats to their historic extent (1980) to enhance and improve their ecological functions and, where feasible, restore mangrove habitats in urban areas;	1. Mapping of Mangrove Habitats every 5 years. 2. Satellite imagery of mangrove habitat every 5 years. 3. Mangrove Transects. 4. Tidal shoreline volunteer program. 5. Independent Fisheries Monitoring.	1. Water Mgmt Districts 2. Fish & Wildlife Conservation Commission 3. SCCF 4. CHNEP 5. Fish & Wildlife Conservation Commission	1. Mangrove Acreage and Location. 2. Mangrove Species Composition for Sample Sites. 3. Condition of mangrove shoreline. 4. Fish Community Composition.	1. Are Mangrove Habitat extents changing over time? 2. How productive and diverse are Mangrove Habitats?
12. Saltwater Marsh Extent & Quality	In Use.	FW-1: Meet the stated objectives for the target extent, location, and quality of the following habitats in the Charlotte Harbor NEP study area: d) restore and maintain saltwater marsh habitats where feasible (e.g. public lands or undeveloped areas) and prevent loss or conversion of existing salt marsh habitats;	1. Mapping of Saltwater Marsh habitat every 5 years. 2. Satellite imagery of Saltwater Marsh habitat every 5 years.	1. Water Mgmt Districts 2. Fish & Wildlife Conservation Commission	1. Saltwater Marsh Acreage and Location. 2. Saltwater Marsh Species Composition for Sample Sites.	1. Are Saltwater Marsh extents changing over time? 2. How productive and diverse are Saltwater Marsh Habitats?
13. Freshwater Wetland Extent & Quality	In Use.	FW-1: Meet the stated objectives for the target extent, location, and quality of the following habitats in the Charlotte Harbor NEP study area: e) restore, maintain, and manage freshwater wetland systems in current extents and to a quality capable of maintaining all natural functions within the range or natural variability;	1. Mapping of Freshwater Wetland every 5 years. 2. Satellite imagery of Freshwater Wetland every 5 years. 3. Mapping of 1 st and 2 nd order streams	1. Water Mgmt Districts 2. Fish & Wildlife Conservation Commission 3. Census Bureau	1. Freshwater Wetland Acreage and Location. 2. Freshwater Wetland Species Composition for Sample Sites. 3. Kilometers of 1 st and 2 nd order streams	1. Are Freshwater Wetland extents changing over time? 2. How productive and diverse are Freshwater Wetland Habitats? 3. Are first order streams changing in extents?
14. Oyster Bar Extent & Quality	In Use.	FW-1: Meet the stated objectives for the target extent, location, and quality of the following habitats in the Charlotte Harbor NEP study area: f) restore, manage, and improve the habitat quality of oyster bars in the Charlotte Harbor NEP area based on the existing historic data;	1. Mapping of Oyster Bars every 2 years. 2. Surveys of Oyster Bar density	1. South Fl Water Mgmt District 2. Florida Gulf Coast University	1. Oyster Bay Acreage and Location. 2. Oyster Density	1. Are Oyster Bar extents changing over time? 2. Are the oyster bars healthy?
15. Native Upland Extent & Quality	In Use.	FW-1: Meet the stated objectives for the target extent, location, and quality of the following habitats in the Charlotte Harbor NEP study area: g) protect, enhance, restore native	1. Mapping of Native Upland habitat every 5 years. 2. Satellite imagery of	1. Water Mgmt Districts 2. Fish & Wildlife Conservation	1. Native Upland Acreage and Location.	1. Are in tact native uplands sufficient to protect ecological functions?

		upland communities vital to the ecological function of the Charlotte Harbor NEP study area;	Native Upland habitat every 5 years.	Commission		
16. Water Column Extent & Quality	In Use.	FW-1: Meet the stated objectives for the target extent, location, and quality of the following habitats in the Charlotte Harbor NEP study area: h) restore, manage, and improve the habitat quality of the water column.	1. Independent Fisheries Monitoring.	1. Fish & Wildlife Conservation Commission	1. Fish Community Composition.	1. Is the water column healthy enough to sustain diverse and abundant fish communities?
17. Lands Under Stewardship	In Use.	FW-2: Achieve a 100 percent increase in conservation, preservation, and stewardship lands within the boundaries of the Charlotte Harbor NEP study area by the year 2025. The increase will be based upon 1998 acreages of existing conservation, preservation, and stewardship lands.	1. GPRA Habitat Reporting	1. CHNEP	1. Acreage of Lands in Conservation Status	1. Has the amount of land managed for environmental purposes increased?
18. Invasive exotic plants and exotic nuisance animals	Under Development	FW-3: 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 by the year 2020.	1. Exotic Nuisance animals presence by county 2. Independent Fisheries Monitoring. 3. Exotic Plant Species Surveys	1. FWC 2. FWC 3. Florida Natural Areas Inventory	1. Invasive exotic plant acreage by Basin on public and submerged lands. 2. Exotic Nuisance Animal Reports by Basin on public and submerged lands.	1. Has the extent of damaging exotic plants and animals expanded?