

**Barnegat Bay National Estuary Program
Strategic Plan
June 2008 through May 2011**

A thriving Barnegat Bay ecosystem is important to the environmental, cultural, and economic well-being of people who live near, work in, and enjoy the bay. The Barnegat Bay National Estuary Program is committed to protecting, restoring, and enhancing the Barnegat Bay ecosystem and to advancing the sustainable use of its natural resources.

Now administered by Ocean County College, the Barnegat Bay National Estuary Program coordinates and supports partnerships with federal, state, and local government agencies, academic institutions, non-governmental organizations, and other stakeholders to:

- Improve water quality throughout the ecosystem;
- Promote wise and sustainable use of the Barnegat Bay watershed, its biota, and other natural resources;
- Support sound science, management, planning, and related decision-making regarding the Barnegat Bay watershed and its resources;
- Increase education and public awareness about the entire watershed and the impacts of human activities on the bay and its resources; and
- Provide leadership for a healthy watershed.

Priorities for Three-Year Period (2008-2011)

The Barnegat Bay National Estuary Program is committed to addressing five priority areas in the coming three years. The BBNEP and its partners agree that the top two priorities are:

1. Improving the capacity of the BBNEP office and strengthening its working relationships with partners to address priority issues; and
2. Improving our recognition and understanding of the bay's condition, and addressing the causes of water quality degradation within the ecosystem, especially *eutrophication* in the bay and *stormwater and non-point source pollution in the watershed*.

The BBNEP and its partners also will work together to address three additional priorities:

3. Addressing *water supply and flow* issues that affect the bay and watershed;
4. Preventing habitat loss, especially of submerged aquatic vegetation, and supporting *habitat restoration*; and
5. Improving understanding of, and addressing, *fisheries declines*.

PRIORITY AREA #1: THE BBNEP

Strategic Objective: Improve the capacity of the BBNEP office and strengthen its working relationships with partners to address priority issues.¹

Desired Results: *Long-term goals:* Organizational growth to support successful projects, partnerships, and outreach.
Three-year goal: Satisfactory implementation review as a result of improved planning, communication, and reporting.

	Action	Measure of Success	Partners	Timeline (Start/end dates)	Funding
	Fundraising for program and actions				
P1	Develop finance plan- with short and long-term goals: this plan should identify the roles of other partners and involve joint funding efforts	Plan	BBNEP*, OCC, BBNEP partners	EPA: 8-31-08; joint funding efforts may require additional time for rulemaking	Various, including external funding
P2	Implement donation tracking system	System in place and communication with sponsors	BBNEP*, OCC	EPA: 12-31-07; Completed	Staff time / base funding
	Leadership				
P3	Develop a Strategic Plan with partners, including a signed letter of support	Strategic Plan	BBNEP*, BBNEP-AC	EPA: 3-31-08 target; to be signed at reaffirmation ceremony 5-22-08	Staff time / base funding
P4	Support staff development and training		BBNEP*, OCC	Continuous	BBNEP-OCC
	Advocacy for CCMP/Strategic Plan				
P5	Reaffirm commitment to CCMP and SP with partners	Public ceremony	BBNEP-AC* and other partners	EPA: 5-22-2008 (see P3 above)	Staff time / base funding
P6	Work with partners to ensure implementation of CCMP and SP; address implementation problems or issues		BBNEP-AC*	Ongoing-continuous	Staff time / base funding
P7	Review and report accomplishments <ul style="list-style-type: none"> • Obtain reports re: results from grantees • Provide reports to public on science • Develop tracking systems for measuring progress on Strategic Plan 	Annual and periodic reporting	BBNEP-STAC*, BBNEP-AC, BBNEP	Ongoing-continuous	Staff time / base funding
	Public Involvement and visibility				
P8	Consider changes to the Advisory Committee to engage other stakeholders; review and formalize membership criteria, responsibilities in a MOA/MOU	Signed MOA/MOU	BBNEP-AC*, BBNEP-PC	Year 1	Staff time / base funding
P9	Develop diverse forums, public meetings, and science meetings	Workshops & conferences (including a State-of-the-bay) held/evaluated for effectiveness	BBNEP*, BBNEP-STAC	Ongoing-continuous	Staff time / base funding
P10	Better involve/include students; e.g., clubs, courses, joint efforts with campus partners	Increased student participation on/off campus	BBNEP*, OCC, on-campus partners such as WaterWatch	Ongoing-continuous	Staff time / base funding
P11	Develop and use a Communication Plan, as required by EPA, to raise awareness of BBNEP	Communication/Public involvement Plan	BBNEP* (consultant), BBNEP-AC	EPA: 6-30-08	\$15,000 EPA grant

¹ EPA required actions are shaded in grey.

PRIORITY AREA #2: WATER QUALITY AND EUTROPHICATION

Strategic Objective: Improve our recognition and understanding of the bay's condition, and address the causes of water quality degradation within the ecosystem, especially eutrophication in the bay and stormwater and non-point source pollution in the watershed.

Desired Environmental Results: *Long term goals:* Water quality that supports healthy populations of shellfish, SAV, and sustainable recreation. *Three-year goals:* Promote and support priority actions to address nutrient sources and inputs, including development and establishment of a monitoring plan with agreed-upon estuarine bio-indicators.

	Actions	Success measures	Partners²	Timeline	Funding
WQ1	Take action to align the BBNEP Strategic Plan and CCMP with NJDEP's watershed approach and WQ and biological standards	NJDEP approved watershed plan for Barnegat Bay estuary and watershed	BBNEP-AC*, NJDEP* ³ ; USEPA	Years 1-2	TBD
WQ2	Continue assessing eutrophication and estuarine condition through (1) development of agreed-upon biological indicators (e.g., SAV, phytoplankton blooms, harmful algal blooms, others), (2) consistent monitoring and evaluation (including Oyster Creek NGS)	Identify barriers to development of indicators, and develop agreed-upon indicators	BBNEP-STAC*, Rutgers/JCNERR, NJDEP, USEPA, NOAA, ALS, Amergen	Years 1- 2 and beyond; also contingent on NJ & federal reg. schedules	Various; NJDEP (?); additional funding needed (Amergen and others)
WQ3	Identify and reduce pollution sources from land use and other sources with a priority on nitrogen and pathogens (see CCMP 5.2 and 5.14)	List of sources with estimates of their magnitude and scale	NJDEP*, USEPA, BBNEP-STAC*, USGS, Rutgers/JCNERR; MU-UCI	Years 2-3	TBD; funding needed
	WQ3A: Develop capability to conduct source tracking on small drainage area scale to inform retrofits that may be needed	Source tracking capacity exists	OCUA, OCSCD, RCE, BBBEP, NJDEP, MU-UCI	Years 2-3	BBNEP; additional funding for tracking
WQ4	Review and address the impairment status of the Bay and its contributing watersheds to assess the feasibility of/necessity for development of a TMDL for the bay. (see CCMP 5.1)	Determination of whether a TMDL is needed and consensus on relative health of the Bay and its contributing watersheds	NJDEP*, USEPA, BBNEP-STAC*, USGS, JCNERR/Rutgers		NJDEP, other
WQ5	Promote coordination and discussion of the usefulness of stormwater utilities for BB watershed, including consideration of pros/cons, barriers to implementation, public sentiment, usefulness in BB, relevance of NJDEP report on SW utilities, etc.	Discussions are initiated with local, state, and/or legislative representatives and all affected groups, summary of discussions and next steps	BBNEP*, BBNEP-AC*, NJDEP, OCPD, Development Community, Municipalities	Years 2-3	Staff time / base funding
WQ6	Consider ways to participate in, support, and use results of CRSSA/JCNERR project to map and assess public and private stormwater basins in the Toms River watershed (see CCMP 5.3)	Project assesses nutrient-reduction, improves various basins, and is expanded (with additional funding) watershed-wide	Rutgers/JCNERR*, Rutgers/CRSSA*, OCSCD*, OCPD, NJDEP	Years 1-2	CICEET (NOAA), BBNEP, Corporate Business Tax (CBT); other
	WQ6A: Develop indicators and protocol for evaluation	Basins are evaluated	Rutgers/JCNERR*, Rutgers/CRSSA*, OCSCD*, OCPD, NJDEP	Ongoing-continuous	
	WQ6B: Evaluate, coordinate with NJDEP 319 efforts, and prioritize basins for retrofit	Priority list	Rutgers/JCNERR*, Rutgers/CRSSA*, OCSCD*, OCPD, NJDEP	Years 2-3	TBD, based on study findings
	WQ6C: Explore costs of retrofitting	Estimate	Rutgers/JCNERR*, Rutgers/CRSSA*, OCSCD*, OCPD, NJDEP	Years 2-3	TBD, based on study findings
	WQ6D: Develop and maintain a current	Inventory	Rutgers/JCNERR*	Years 1-3	OCPD

²Partners commit to advocating for funding for the strategic planning elements and will undertake their actions to the extent that resources allow.

³ Asterisks denote implementing partners. Other listed partners are supporting partners.

	inventory of stormwater basins at the county level		Rutgers/CRSSA*, OCSCD*, OCPD		
	WQ6E: Plan for retrofitting of remainder of watershed using the Toms River assessment	Expansion plan	Rutgers/JCNERR*, Rutgers/CRSSA*, OCSCD*, OCPD	Year 3 and beyond	Additional funding needed; CBT and other
	WQ6F: Inventory potential stormwater mitigation sites	Inventory	Rutgers/JCNERR*, Rutgers/CRSSA*, OCSCD*, USGS*, OCPD	Year 3 and beyond	Additional funding needed
	WQ6G: Coordinate with ongoing municipal stormwater efforts	Joint projects with municipalities	Rutgers/JCNERR*, Rutgers/CRSSA*, OCPD, OCSCD*, NJDEP*	Ongoing-continuous	Staff time / base funding
WQ7	Continue Stormwater Implementation Grants to municipalities for actions that further Strategic Plan objectives	Estimates of reduced nitrogen from project implementation	BBNEP, Rutgers/JCNERR SSC, OCPD, NJEIT	Years 2-3	BBNEP, subject to funding availability
WQ8	Foster the implementation of more progressive, low-impact development and sustainable site design practices at the local level	Pilot LID project	BBNEP SCW,* Rutgers/JCNERR SSC, OCSCD, municipalities, NJDEP, Shore Builders, OCPD	Ongoing-continuous	Staff time / base funding
	WQ8A: Make recommendations on best management practices (BMPs) for land use and stormwater regulations for the watershed	Recommendations to enhance existing regulatory framework and State BMP Manual	NJDEP*, BBNEP SCW,* Rutgers/JCNERR SSC		Staff time / base funding
	WQ8B: Develop inventories of best management practices (BMPs) sites in use in the watershed and those supported by BBNEP	Inventory from WQ6 and/or map with click on capability available for use in outreach efforts	NJDEP, BBNEP SCW, Rutgers/JCNERR SSC, OCSCD	Year 1	BBNEP & partners
	WQ8C: Identify regulatory challenges and barriers to implementation of BMPs	Description and action plan to address barriers	BBNEP SCW, Shore Builders		Staff time / base funding
	WQ8D: Work with local governments, senior villages, and Ocean County College to promote low impact development (LID), stormwater, and NPS pilot and demonstration projects using sustainable site design practices	Promotion and implementation of various projects in towns, senior villages, and OCC	BBNEP-SCW*, Rutgers/JCNERR SSC, RCE, OCSCD, OCC	Ongoing-continuous	Staff time; BBNEP with funding from other partner(s)
WQ9	Address issues of changing land use, including conversion from natural to developed and anthropogenic changes	Develop a plan to address land-use as a new BBNEP goal; include build-out analyses, master plan revisions, and other activities	NJDEP, OCPD, USFWS, Rutgers/CRSSA, ALS, TPL, Municipalities (invite the New Jersey State Planning Comm.)	Years 1-3	Staff time- base funds; additional funds needed as plans and activities develop
	WQ9A: Update priority list of undeveloped parcels for acquisition; acquire additional lands, especially large blocks (see CCMP 6.5)	Updated list	TPL*; OCPD-OCNLT; USFWS	Ongoing-continuous	TPL, OCPD-OCNLT, USFWS
WQ10	Support outreach and education for non-point source (NPS) pollution, LID, responsible water use, native species to reduce nitrogen and phosphorous	Targeted programs at nurseries, municipalities, landscaping firms, colleges (e.g., certificate programs)	BBNEP SCW,* RCE, Rutgers/JCNERR-SSC, NJDEP	Ongoing-continuous	Staff time
	Q10A: Educate the public about: (1) the proper functions of existing stormwater retention ponds, basins, and other stormwater facilities, and (2) the importance of native species	Expanded outreach programs, including new resident packages, rain-barrel projects, extreme lawn makeovers, and native/introduced species programs	RCE, BBNEP-SCW*, Rutgers/JCNERR-SSC, OCSCD, USFWS, OCPD, ALS, municipalities	Ongoing-continuous	BBNEP/RCE Staff time; additional funds for outreach, other materials
	WQ10B: Continue the Stormwater Steering Committee efforts: promote BMPs, promote education, and support NERR stormwater training program	Sponsor and evaluate events and other efforts	BBNEP*, RCE, OCSCD, Rutgers/JCNERR-SSC*	Ongoing-continuous	Staff time / base funding ; expanded efforts need funding
	WQ10C: Obtain sponsor for and develop a pilot program for professional certification of landscapers, public works officials, and	Professional Development program exists	OCSCD, RCE, Rutgers Office of Continuing Education, BBNEP SCW*	Year 3	4

	government agencies regarding environmentally sensitive landscaping				
	WQ10D: Address barriers to use of ground-moisture sensors for private irrigation systems,	Sensors and water use are improved	OCSD, RCE, OC Mayors Association	Ongoing-continuous	Staff time / base funding

PRIORITY AREA #3: WATER SUPPLY AND INPUT

Strategic Objective: Address water supply and flow issues that affect the bay and watershed.

Desired Environmental Result: *Long-term goals:* Provide natural freshwater flows (both quantity and periodicity) to the bay to: (1) support healthy living resources, (2) support societal uses, and (3) prevent salt water intrusion. *Short-term goals:* Support plans to conserve and reduce water use.

	Action	Success measures	Partners	Timeline	Funding
WS1	Review the proposed State Water Supply Plan and provide comments to NJDEP about its impacts on BB watershed. (see CCMP 5.20)	Comments	BBNEP-STAC*	Years 1-2	Staff time / base funding
WS2	Develop BB watershed-specific implementation plan for State Water Supply Plan, including feasibility of conservation, reuse, and other demand management tools (see CCMP 5.21)	Development of white paper re: implementation issues in Barnegat Bay	BBNEP-STAC*	Years 2-3	Staff time / base funding
WS3	Support development of programs to characterize and assess shallow water aquifer withdrawals, especially for irrigation (see CCMP 5.22)	Programs are initiated	NJDEP*, USGS	Year 1	Staff time / base funding
WS4	Review existing data and consider the need for a new study to determine the freshwater input is needed to ensure a healthy ecosystem (see CCMP 5.20)	Report/white paper on issues needing study and feasibility of study	NJDEP*, BBNEP-STAC, Rutgers/JCNERR, USGS, USFWS	Year 2	Staff time / base funding
WS5	Support public education about the status of the water supply, and promote water conservation and re-use projects (see CCMP 5.24)	Increased conservation and reuse of water via increases in projects that reuse water (e.g., golf courses), in numbers of households using BMPs.	BBNEP* (to coordinate), RCE, USGS, JCAA, OCUA, water purveyors	Ongoing-continuous	Staff time / base funding ; funding needed for projects

PRIORITY AREA #4: HABITAT LOSS AND HABITAT RESTORATION

Strategic Objective: Prevent habitat loss, especially of submerged aquatic vegetation, and support habitat restoration.

Desired Environmental Result: *Long-term goals:* Unimpaired, quality habitats, vegetated with appropriate native species, that support self-sustaining populations of federally and state-listed species (e.g., endangered and threatened species such as pine barren tree frog, swamp pink) and other native species. *Short-term goals:* (1) Support existing efforts and mechanisms to acquire/protect wetlands, adjoining uplands, and other uplands (~1000 acres/year); (2) coordinate efforts to assess previous restoration projects, support existing restoration projects, and prioritize new restoration projects; and (3) address and incorporate sea-level rise and other climate-change concerns (e.g., wetland migration and submergence) into acquisition and restoration planning.

	Action	Success measures	Partners	Timeline	Funding
H1	Maintain, restore and improve shoreline buffers adjacent to coastal wetlands and freshwater tributaries to prevent habitat loss and maintain continuous corridors for habitat protection and low-impact recreational pursuits (see CCMP 6.1 and 6.3)	Buffer evaluations completed; collaborative efforts to address regulatory issues within the region; successful shoreline restoration projects	ALS*, NJDEP, RCE, USACE, USEPA, USFWS, NRCS, NOAA/NMFS/RC, OCSCD, other restoration groups (e.g., Coastal America)	Ongoing-continuous; extends beyond 3-year time frame	Fish Habitat Conservation Plan, NFWF, Corporate Wetland Restoration partners, NOAA; funding needed
	H1A: Evaluate buffers to establish baseline and periodic reviews to show improvements	Baseline study completed in 2007.	BBNEP-STAC*, NJDEP, Rutgers/JCNERR, Rutgers/CRSSA, RCE, USEPA, USFWS, NRCS, NOAA/NMFS/RC, OCSCD	Years 1-3	BBNEP; other partners
	H1B: Evaluate and address stronger protection measures (e.g., C1 designation and implementation) for riparian/estuarine buffers; identify and address regulatory impediments	Workshops and other targeted meetings	NJDEP, BBNEP, ALS*, JCAA, USFWS, other partners	Years 2-3; longer to address rulemaking	Staff time / base funding
	H1C: Explore municipal beaches as potential pilot sites for living shorelines	Pilot Site	OCPD, municipal officials	Years 2-3	Staff time / base funding
H2	Review reports on sea level rise, conservation and restoration targets, and identify potential habitats threatened by climate change and explore opportunity for funding to address adaptation to climate change impacts	Adaptation projects are initiated; 2008 JCNERR workshop	USEPA*, BBNEP-STAC, USGS, USFWS, NOAA/NMFS, Rutgers/JCNERR, Rutgers/CRSSA, NRCS, NJDEP	Ongoing-continuous	Staff time, broader scale efforts depend on additional funds
H3	Research, summarize, promote, and implement alternative restoration approaches (e.g., "living" shorelines, reuse of dredged material)	Summary review document	BBNEP-STAC*, NJDEP, NOAA/NMFS, USFWS, Rutgers/ JCNERR, ALS, USACE	Years 2-3	External funds to increase project number and scales
H4	Work with partners to support erosion control efforts and create opportunities for non-structural stabilization (see CCMP 6.3)	Non-structural stabilization is in use in towns	BBNEP-STAC*, NJDEP, USACE, USEPA, USFWS, NOAA/NMFS/RC, NRCS, ALS, NGOs	Years 2-3	Funding needed for large-scale efforts
H5	Convene regional workshops to identify regulatory and other impediments to non-structural solutions, including cumulative impacts, and develop steps to address them	Workshops, with summary of impediments and strategies	NJSG*, USACE, NJDEP, USFWS, NOAA/NMFS, developers and builders, others	Years 2-3; longer if rulemaking required	Funding needed; work with other NEPs
H6	Review and evaluate implementation of current	Public report	NJDEP*, USFWS, ALS, NOAA/NMFS,	Year 1; longer	Staff time /

	regulations (including CAFRA, Flood Hazard Area Rules, <i>etc.</i>) regarding important habitats (see CCMP 6.10)		USEPA, MU-UCI, developers and builders, others	to address rulemaking	base funding
H7	Facilitate partnerships and funding for natural lands acquisition and management (see CCMP 6.5 and 6.12).	Increased funding/ acquisition	TPL*, USACE, USFWS, NJDEP (Green Acres), OCPD-OCNLT, BBNEP, others	Ongoing-continuous	Staff time / base funding
H8	Promote USACE restoration plan for projects and implementation strategies (see CCMP 6.2)	Funding for federal restoration projects	USACE*, BBNEP, USFWS, NJDEP, NMFS, OCPD-OCNLT, others	Ongoing-continuous	Requires local partner/funding
H9	Support NJ/local land use & growth management plans that encourage sub-watershed planning to minimize impervious coverage and maintain habitat and ecosystem functions	Planning consistency	NJDEP*, OCPD, towns, BBNEP-SCW, Brick Twp. Utilities, ALS (invite NJ Dept. of Community Affairs, Sustainable Growth Program,)	Ongoing-continuous	Staff time / base funding; funds needed to expand efforts
	H9A: Provide model ordinances to promote habitat preservation	Model ordinances in place	NJDEP*, OCPD, towns, BBNEP-SCW (invite NJ Dept. of Community Affairs, Sustainable Growth Program)	Ongoing-continuous	Staff time / base funding
	H9B: Work with municipalities during revision of their master plans to align them with CCMP and BBNEP priorities for habitat and water quality protection (see CCMP 6.9)	Consistency among the Strategic Plan and Municipal Master Plans	BBNEP-SCW, NJDEP, NJ Dept. of Community Affairs, Sustainable Growth Program, OCPD, towns	Ongoing-continuous	Staff time / base funding

PRIORITY AREA #5: FISHERIES DECLINES

Strategic Objective: Improve understanding of, and address, fisheries declines.

Desired Environmental Result: *Long-term goals:* (1) Stable populations of healthy freshwater, estuarine-dependent, and marine fishes and shellfishes; (2) consumable fishes and shellfishes (*i.e.*, reduction in fish and shellfish contamination), and (3) consistent management of commercially valued species such as river herring, blue crabs, hard clams, and bait species. *Three-year goals:* (1) Identify priority data gaps regarding exploited species and their management; (2) promote and support monitoring and assessment of freshwater and exploited estuarine species; and (3) promote comprehensive monitoring and assessment of power plant impacts on biotic resources.

	Action	Success measures	Partners	Timeline	Funding
F1	Fill data gaps to support decision making regarding economically-important fisheries and fish habitats	Detailed population assessments of clams, sea grasses, and other species that are exploited or are of management concern	NJDEP-DFW*, BBNEP-STAC, NOAA/NMFS, USFWS, Rutgers/JCNERR, JCAA	Years 1- 2	Funding needed
F2	Improve assessment of Oyster Creek power plant impacts (see CCMP 5.15).	License/permit requirements; monitoring program established	BBNEP-AC*, Amergen, Rutgers/JCNERR, ALS, others	Ongoing-continuous; set in part by regulatory schedules	Funding needed (Amergen <i>et al.</i> ?)
F3	Include freshwater fishes and exploited estuarine species in bioindicator assessments; implement monitoring of those species.	Review information and develop agreed-upon indicators	BBNEP-STAC, NJDEP, NOAA/NMFS, USFWS, USEPA, JCAA (invite Pinelands Commission)	Years 2-3	Funding needed (Pinelands Commission <i>et al.</i> ?)
F4	Educate the public about the functional role of the bay in early life stages of important estuarine-dependent species, <i>e.g.</i> , flounder, bluefish, <i>etc.</i>	Public outreach materials	JCAA, NOAA/NMFS, USEPA, USFWS, Rutgers/JCNERR, BBNEP, RCE	Ongoing-continuous	Staff time / base funding