

CHAPTER 7

Human Activities and

Competing Uses

Action Plan

Catboat and houseboat off Barnegat Lighthouse at Island Beach. PHOTO COURTESY OF THE OCEAN COUNTY HISTORICAL SOCIETY.

Estimated Housing and Boat Counts Bay Front and Lagoon Communities Ocean County, New Jersey

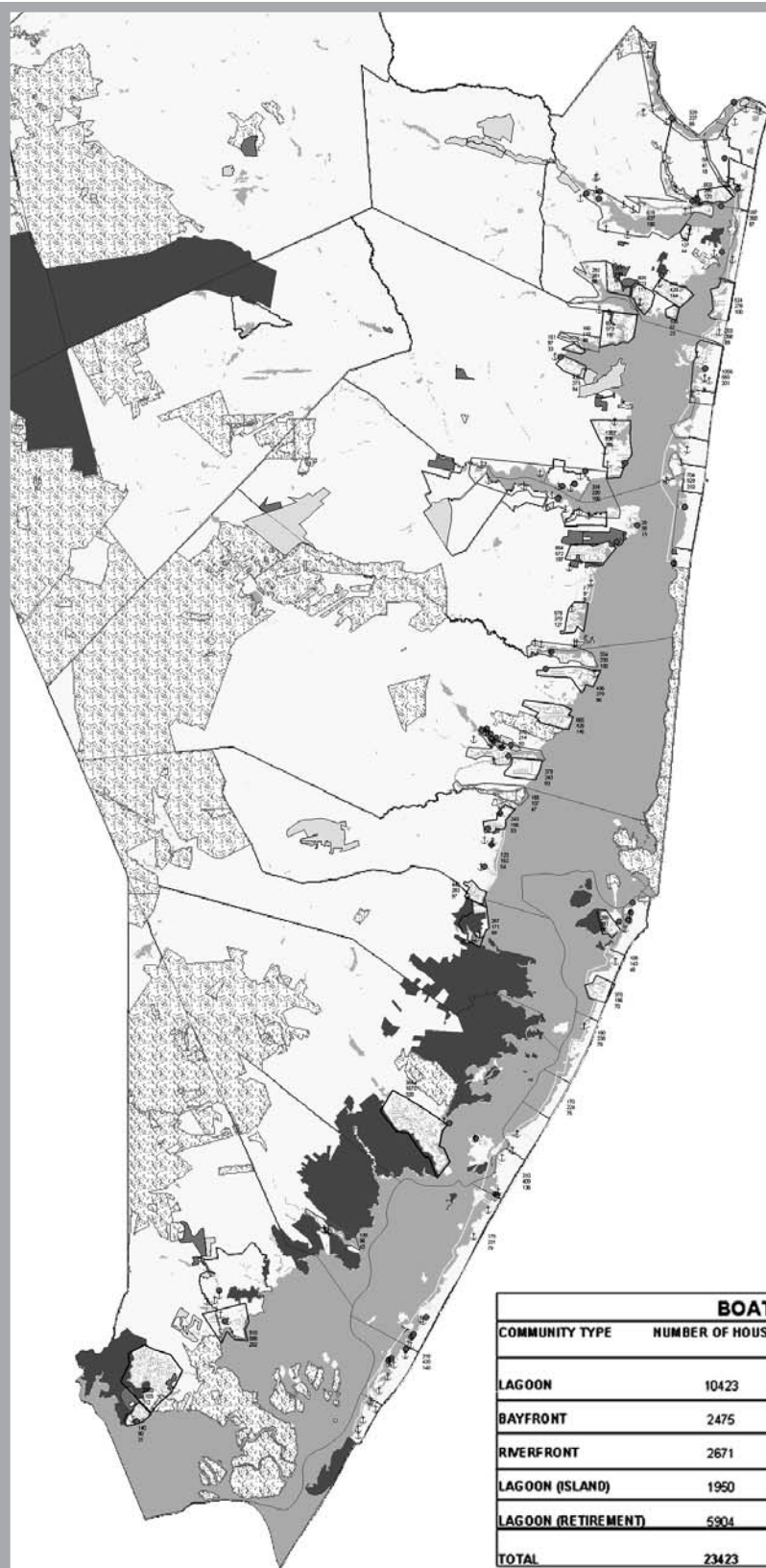
Prepared by
Ocean County Planning Department
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Legend

- ⚓ Marinas
- Pumpout Stations
- Lagoon
- Bay Front
- River Front
- Lagoon Island
- Lagoon - Retirement
- OC County Parks
- wetlands/woods
- water
- wetlands

Label Key
(Numbers Estimated)
Number of houses
Number of boats
Number of boats >25ft.



BOAT COUNT ESTIMATES					
COMMUNITY TYPE	NUMBER OF HOUSES	NUMBER OF BOATS	% OF TOTAL BOATS	NUMBER OF BOATS > OR = 25 FT.	% OF BOATS > OR = 25 FT.
LAGOON	10423	6670	64	2290	22
BAYFRONT	2475	3266	132	1113	44
RIVERFRONT	2671	1842	69	803	30
LAGOON (ISLAND)	1950	1034	53	371	19
LAGOON (RETIREMENT)	5904	2775	47	532	9
TOTAL	23423	15587	67	5109	22

BBNEP GOALS THAT ARE SUPPORTED THROUGH THIS ACTION PLAN

PRIMARY: Municipalities in the watershed will provide public access to waterways or shorelines to support multi-use recreation where appropriate.

All citizens and visitors will understand how they influence the natural resources of the estuary, its watershed, and the water cycle within it, and their role in its conservation and improvement.

The diverse users of the estuary and watershed will cooperate in the stewardship of the resources.

SECONDARY: Water quality in the estuary and watershed will support recreational bathing, direct shellfish harvesting, and the integrity of the freshwater and tidal benthic communities.

7.1 INTRODUCTION

The Barnegat Bay region is very popular for many different reasons and has many different uses. In fact, there are so many users and different interest groups, all of whom want to use this finite space, that they experience real and perceived conflict with each other. Commercial and recreational fishing, power boating and sailboating, use of personal watercraft (PWC), beachgoing, passive pursuits such as bird-watching and natural study, all compete as preferred activities within the Barnegat Bay estuary.

At the same time, human activities within the watershed contribute to the estuary's water quality impairment and habitat loss and alteration. Human activities such as development, dredging, illegal dumping, and erosion due to shoreline structures or boat wakes all contribute to the loss and degradation of natural habitat and the decline in the bay's water quality.

Despite the increased pressure on the watershed, efforts must be made to sustain the long-term viability of the coastal ecosystem. Without these efforts, continued degradation will result in the loss of natural resources, aesthetics, and ultimately, economic value and quality of life. Through proper stewardship, that is, by protecting the bay and its watershed now, concerned citizens will protect the bay's resources not only for themselves, but also for their children and subsequent generations.

Previous chapters detail regulatory and other government agency actions that are targeted at protecting water quality and maintaining natural resource values. This chapter focuses more specifically on the human uses of the estuary and how they compete for a finite resource. In doing so, this chapter fulfills the intent of the BBNEP to develop a comprehensive plan for the bay and its watershed. In a similar manner, the next chapter details public education and outreach efforts to improve public awareness of the very real environmental impacts people impose on the watershed merely by their style of living. The Human Activities and Competing Uses Action Plan proposes actions that take the next step beyond education to citizen empowerment and mobilization to rectify unintended environmental consequences and to diminish the effects of the growing human population. It is an objective of the BBNEP to describe competing uses, determine the compensatory limits of the estuary's natural systems, and develop an effective management plan to sustain and enhance overall ecosystem health and use. The BBNEP has assessed the linkage between human activities and impacts on the estuary and is proposing politically feasible management solutions to mitigate those impacts.

This Action Plan works in tandem with the plans described in the previous two chapters to ensure the protection of water quality and water supply and to maintain the area's wealth of natural resources.

HUMAN ACTIVITIES and COMPETING USES ACTION PLAN

Actions with an emphasis on what the average citizen can do are organized by their impacts on the watershed (residential development and day-to-day living activities) and impacts on the estuary (boating and boating infrastructure, use of PWC, fishing and shell-fishing). A summary of Action Items within this Action Plan can be found in Table 7-1.

Table 7-2 and Figure 7-1 give the measures by which the above objectives will be achieved, the means of taking the measure of achievement, and the expected timeline for completion of action implementation.

BBNEP HUMAN ACTIVITIES and COMPETING USES.

Action Plan Objectives

- Support water-related recreation while preserving the economic viability of commercial endeavors.
- Encourage sustainable methods of living within the watershed, whereby human uses are balanced with ecosystem protection.
- Empower citizens to protect Barnegat Bay and its watershed.
- Establish a workable agreement to restrict uses of PWCs in sensitive, shallow, near-shore waters. Encourage local initiatives to zone and enforce uses of PWCs.
- Manage recreationally and commercially important fish and shellfish species for sustainable and safe

7.2 HUMAN ACTIVITIES AND COMPETING USES ACTION ITEMS

ACTION 7.1

Draft a Barnegat Bay personal watercraft (PWC) management strategy, thereby setting an example for statewide policy.

SIGNIFICANCE OF ACTION: Barnegat Bay is a popular vacation destination due to its valuable fishing, crabbing, and clamming opportunities; but other activities also contribute to the popularity of this area as a beach resort destination. Boating, specifically jet-powered vessels such as PWC and jet boats, is a fairly new

phenomenon that threatens the health of Barnegat Bay's shallow-water habitat and its inhabitants. An action item to address this particular use is essential for the long-term health of the bay. Inappropriate PWC use is a local, state, national, and international issue, and extensive educational resources, information, and research data have been compiled on PWC use and impacts. This action describes how the Barnegat Bay PWC Task Force, which represents federal, state, county, and local agencies, will address this issue locally, statewide, and federally. This action includes development of a conservation-zoning model for Barnegat Bay for incorporation into statewide legislation, which will help other regions of New Jersey. This action will also help promote consistency between state and federal initiatives.

STATUS AND PRIORITY: Commitment, High Priority.

WHO: A volunteer-based PWC Task Force (BBPWCTF) has been assembled for the Barnegat Bay watershed (Lead). This task force includes interested parties from environmental, dealer, user, rental operations, state police, legislative, and marine trades groups. This group is co-chaired by the Barnegat Bay Watershed Association (BBWA) and Clean Ocean Action. Participants currently include: N.J. State Police, Marine Trades Association, N.J. Boating Regulatory Commission, Jersey Coast Anglers Association, Alliance for a Living Ocean (ALO), Isaac Walton League of Ocean County, Jacques Cousteau National Estuarine Research Reserve (JCNERR), American Littoral Society, BBNEP, RCE, Congressman James J. Saxton's office, a PWC user, and Island Beach State Park.

HOW: The BBPWCTF has been developing goals and objectives to create an action plan for PWC uses in Barnegat Bay and throughout the state. This group will draft a PWC management plan for Barnegat Bay based on scientific studies that have been done on the effects of PWC on shallow-water habitats and coastal nesting grounds for birds. The studies and models that have been compiled are local, national, and international.

Members of the BBPWCTF have assessed international and national research on what other regions have done to establish conservation zoning and other PWC-related initiatives. These findings are incorporated into the draft statewide legislation which the group is developing.

TABLE 7-1. Human Activities and Competing Uses Action Table.

Action Item No.	Action Item Title and Status	Priority	Lead	Tentative Schedule	Approx. Cost	Other Action Plan Supported	Funding Source
7.1	Draft a Barnegat Bay personal watercraft (PWC) management strategy, thereby setting an example for statewide policy. - C	H	PWC Task Force	Ongoing	\$10,000	Habitat Loss & Alteration	Coastal Management Plan
7.2	Promote the use of the "Boater's Guide to Barnegat Bay and Little Egg Harbor" to protect sensitive areas by mitigating boater impacts to water quality and natural resources. - PC	M	RCE or Marine Trades Association of New Jersey	Annually	\$20,000 for 21,000 copies	Public Participation & Education Water Quality/ Water Supply Habitat & Living Resources	See Chapter 12
7.3	Follow up the Municipal Outreach Project with continued production of "Community Connection" newsletter and with a community awards program. - R	M	BBWEF	Quarterly newsletter Annual recognition awards ceremony	\$10,000 per year		BBEP Program Funding
7.4	Use environmental commissions to foster the watershed approach. - R	M	BBEP, Ocean County Environmental Agency	Commence upon availability of funds.	None available beyond existing program funding		See Chapter 12
7.5	Support the Barnegat Bay Watershed and Estuary Foundation (BBWEF) to protect Barnegat Bay and its watershed resources. - C	H	Municipal & county governments	Ongoing	\$10,000	Public Participation & Education	BBEP Program Funding

Status: Recommendation H = High
 Commitment M = Medium
 Partial Commitment L = Low

Priority:

HUMAN ACTIVITIES and COMPETING USES ACTION PLAN

TABLE 7-1. (continued)

Action Item No.	Action Item Title and Status	Priority	Lead	Tentative Schedule	Approx. Cost	Other Action Plan Supported	Funding Source
7.6	Establish a Barnegat Bay Blue Card certification program on soil health, low-input landscapes, and balancing the water cycle. - R	L	OCSCD	Initiate training upon availability of funds.	\$75,000 to establish program & core training	Water Quality/ Water Supply	Non-government Funding Sources. See Chapter 12
7.7	Use data & information from the Natural Resource Inventory (NRI) to promote the use of Best Management Practices (BMPs). - R	L	OCSCD	Upon availability of funds	\$75,000	Water Quality/ Water Supply Habitat & Living Resources Public Participation & Education	See Chapter 12
7.8	Design & construct environmentally sensitive demonstration gardens in all municipalities. - R	L	RCE	Initiate within one year of receipt of funding.	\$35,000 per year	Water Quality/ Water Supply Public Participation & Education	See Chapter 12
7.9	Construct an environmentally sensitive demonstration lawn for homeowners to use as a model for landscaping plans. - PC	M	RCE	2003	\$5,000 - \$8,000 per year	Water Quality/ Water Supply Public Participation & Education	BBEP Program Funding

Status: Priority:

R = Recommendation H = High
 C = Commitment M = Medium
 PC = Partial Commitment L = Low

TABLE 7-1. (continued)

Action Item No.	Action Item Title and Status	Priority	Lead	Tentative Schedule	Approx. Cost	Other Action Plan Supported	Funding Source
7.10	Conduct shellfish resource survey of the bay to examine potential causes of stock decline and meat discoloration in hard shell clams and explore resource enhancement strategies so that an adequate supply of shellfish exists to reap the benefits of improved water quality resulting from Action Item 5.25 in the Water Quality/ Water Supply Action Plan. - PC	M	NJDEP, Division of Fish & Wildlife	2002	\$190,000		See Chapter 12

Status: Recommendation
 C = Commitment
 PC = Partial Commitment

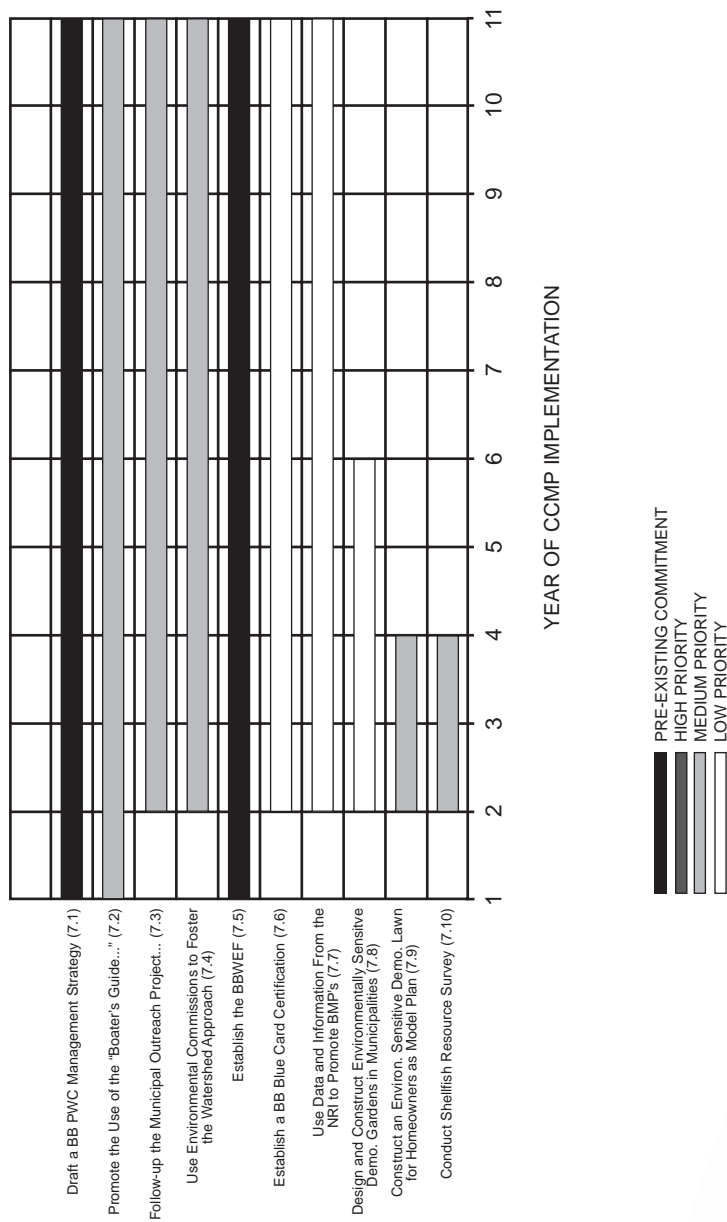
Priority: H = High
 M = Medium
 L = Low

HUMAN ACTIVITIES and COMPETING USES ACTION PLAN

TABLE 7-2. Indicators and Monitoring Programs for Measuring Progress Toward Human Activities and Competing Uses Action Plan Objectives.

Human Activities and Competing Use Objectives of the Barnegat Bay Estuary Program	Environmental Indicators of the BBEP	Monitoring Programs for Indicators
Support water-related recreation while preserving the economic viability of commercial endeavors.	The measure of success in this objective will be an increase in: (a) economic vitality associated with Ocean County tourism (dollars spent, jobs maintained); (b) the number of municipal beach badges sold (bay-side only); (c) the number of recreation and commercial shellfish harvesting licenses sold.	(a) The status and trends in economic vitality will be compiled by the Ocean County Office of Tourism and monitored by the BBEP; (b) the number of beach badges sold will be compiled by the municipalities of Ocean County and monitored by the BBEP; (c) the number of recreational and commercial shellfish licenses sold will be monitored by the NJDEP Division of Fish and Wildlife (Bureau of Marine Fisheries).
Encourage sustainable methods of living within the watershed, whereby human uses are balanced with ecosystem protection.	The measure of success in this objective will be improvements in the quality of surface water and groundwater used by the citizens of Ocean County, as well as the maintenance of baseflow in the major tributaries in the watershed. Specifically, targeted base flow levels in watershed tributaries could be monitored and cataloged to demonstrate that adequate flows are being provided to in-stream aquatic life.	(a) Surface Water Quality Data - NJDEP and USGS cooperative Ambient Surface Water Monitoring Network and the Toms River Nonpoint Source Study; (b) Groundwater Quality Data - NJDEP and USGS Cooperative Groundwater Monitoring Network; (c) Ocean County Health Department's water quality data; (d) Results of the Toms River/Metedeconk River Watershed Study (i.e., Ciesla Study).
Empower citizens in the protection and stewardship of the Barnegat Bay and its watershed.	This objective will be measured by the number of forums, workshops, meetings and public events, and activities in the watershed directed at user conflicts and promoting dialogue between competing users of the Bay and its watershed.	The BBEP will arrange and coordinate the user conflict forums, meetings, workshops, and other associated activities. Monitoring to be conducted by the BBEP.
Establish a consensus-based agreement to restrict uses of PWCs in sensitive shallow nearshore waters.	The measure of success in this objective is the number of forums, workshops, meetings and activities undertaken to develop a Management Plan for PWCs.	The Barnegat Bay PWC Task Force, together with Rutgers Institute of Marine and Coastal Sciences and the Jacques Cousteau National Estuarine Reserve, will continue to work toward facilitating and monitoring progress toward development of a PWC Management Plan for the Barnegat Bay area.
Manage recreationally and commercially important fish and shellfish species for sustainable and safe harvest.	A measure of success for this objective will be an annual inventory of outstanding licenses for recreational and commercial clamming and crabbing. NJDEP issues licenses for recreational and commercial harvest of hard clams and blue crabs within the state's in-shore waters, and an annual count of outstanding permits will provide a measure of current fishing pressure, registering a qualitative measure of the status of the fisheries. A periodic stock assessment of the hard clam fishery will add a quantitative measure for the success of actions to meet this Program objective. A stock assessment of the hard clam fishery was most recently conducted by NJDEP Division of Fish and Wildlife (Bureau of Shellfisheries) in 1985-1987.	A program committee to maintain an annual inventory of crab and clam licenses will be required to implement this indicator. A source of funds will be needed to enable the NJ Bureau of Shellfisheries to conduct an updated stock assessment for hard clams in Barnegat Bay.

FIGURE 7-1. Human Activities and Competing Uses Action Plan.



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Additionally, JCNERR and the Institute of Marine and Coastal Sciences (IMCS) of Rutgers University will host two seminars to bring together national experts who have worked on the science and policy issues related to PWC use. The information from these workshops will be used to identify research data gaps and future areas of study. JCNERR will utilize the information to develop management recommendations for consideration by the N.J. Department of Environmental Protection (NJDEP).

The BBPWCTF will also use this information to bolster existing efforts that the group has been working on to establish and institute a management plan and guiding legislation for PWC use in Barnegat Bay.

The draft management plan will outline:

- Education;
- Enforcement;
- Community involvement;
- National scientific study research; and
- Legislation (federal, state and local), including conservation zoning.

Education: A demonstration day is planned to look at the PWC and how it operates, potential problems associated with misuse of the craft, and how to use the craft in a manner that protects human safety and the ecosystem.

Legislation: The BBPWCTF is working with federal and state legislators to draft legislation to establish conservation zoning in sensitive areas, possibly using Island Beach State Park to introduce this concept in New Jersey.

Other Recommendations:

- Increased funding for enforcement of the current N.J. State Police regulations for PWC use. Funding needs to be provided to bolster state and local law enforcement agents during the peak-use season from May through September. The BBPWCTF has begun to identify gaps in current enforcement initiatives and will seek funding sources to help the different levels of enforcement (Marine Police, Coast Guard, municipal, etc.). Law Enforcement Grants that could be used to enforce current regulations are identified in H.R. 3141.
- Strengthen the State Police Educational program to include PWC-specific items. The BBPWCTF has

submitted comments on the educational standards for the enforcement agents and will continue to work with the N.J. State Police on this initiative.

WHEN: The BBPWCTF activities have been ongoing since May 1999. Scientific and management workshops were held at the end of 1999 and a final outcome, in the form of a management policy, is targeted for 2001.

WHERE: The statewide model will be developed in the Barnegat Bay estuary and watershed.

MEASUREMENT OF EFFECTIVENESS: Effectiveness will be measured by the reduction in disruption of sensitive areas through the implementation of a management strategy.

COST ESTIMATE: \$10,000.

FUNDING SOURCES: NERRS/IMCS are receiving funding for the PWC workshops from the Coastal Zone Management Program. Other recommended funding sources are:

- Federal Coastal Zone Management Act reauthorization; BBPWCTF was identified in the proposal for \$500,000 a year for at least five years as itemized in the CZMA reauthorization bill, introduced by Congressman James J. Saxton;
- Task Force Development Grants outlined in H.R. 3141 – “Personal Watercraft Responsible Use Act of 1999,” introduced by Congressman Saxton. Each state may receive “no more than 25 percent of the total amount appropriated for a fiscal year.” The initial request for allocation nationally is \$2.5 million;
- Public Outreach Funding for Citizens Advisory Committee (CAC) of BBNEP; and
- Private funding sources.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: Portions of the project would require federal, state, and local legislation or ordinances.

ACTION 7.2

Promote the use of the “Boater’s Guide to Barnegat Bay and Little Egg Harbor” to protect sensitive areas by mitigating boater impacts to water quality and natural resources.

SIGNIFICANCE OF ACTION: One goal of the BBNEP is to provide for the human enjoyment of the bay while maintaining ecosystem integrity. The BBNEP recognizes that the bay is an important boating and PWC destination. Approximately 25 percent of the 196,000 licensed pleasure boats in New Jersey (including PWC) operate in the Barnegat Bay watershed during the summer. In recent years, PWC have been the fastest growing segment of the boating industry, with Internet listings for PWC operators featuring Barnegat Bay as a prime destination. Since PWC can operate in much shallower water than other boats, they have a greater propensity for damaging sensitive near-shore habitats. Sea grass meadows are found in shallow waters of the bay. Their functions include: serving as important nursery grounds for commercially and recreationally important finfish and shellfish; reducing shoreline erosion; taking up nutrients in summer that would otherwise be available to harmful phytoplankton; and serving as an important food source. These meadows extend from Dover Township south, primarily on the eastern shore of the bay.

Both small boat and PWC users operate their vessels in shallow waters. Boat wakes impact marshes by eroding the banks and disrupting birds that nest on the salt-marsh wrack. Vessel operation in narrow tidal creeks can disturb feeding birds, especially long-legged wading birds. Propellers, wakes, and prop wash from boats and PWC operating in shallow sea grass regions can destroy the plants that provide shelter for many small fishes and invertebrates.

STATUS AND PRIORITY: Partial Commitment, Medium Priority.

WHO: Reprinting of the *Boater’s Guide* and a survey of changing boating habitats can be done by either RCE or the Marine Trades Association of New Jersey.

HOW: Under the auspices of RCE/N.J. Sea Grant

Extension Program, the Marine Trades Association of New Jersey Foundation has developed a “Boater’s Guide to Barnegat Bay and Little Egg Harbor” modeled after a successful NEP project in Tampa Bay, Florida. This user’s guide is a two-sided waterproof map that is similar in size and design to a road map or marine chart. Funding from BBNEP, NJDEP, and Ocean County has supported the production and a minimal printing of the map.

Free dissemination of the map will be made to marinas and boaters as well as to organizations such as Barnegat Bay Power Squadron, Coast Guard Auxiliary, boating courses, fishing and yacht clubs, boat shows, PWC classes, PWC dealers, pumpout boats, parks, and recreation departments. The project seeks to promote positive actions and behaviors that safeguard the living resources of the bay through boater outreach and education with a users’ guide map designating special areas such as sea grass meadows, bird nesting sites, and other sensitive near-shore habitats that boaters and PWC operators should avoid. The map also delineates such things as public boat ramps and sewage pumpout stations, and it provides educational information about Barnegat Bay habitats and safe boating practices. With additional funding, a survey can be conducted to determine changing boating behavior in response to the BBNEP’s outreach and education about the bay’s environmental sensitivity. The survey will then be printed and distributed to the public, specifically to boaters, marina owners, and others that use the Bay area.

WHEN: Reprinting, which will require six months following the availability of funds, is necessary to ensure an adequate supply of the “Boater’s Guide to Barnegat Bay and Little Egg Harbor” for each boating season. The target date is spring 2002. The survey would be conducted two to three years after that.

WHERE: The “Boater’s Guide to Barnegat Bay and Little Egg Harbor” will include the 75-plus square miles (195 km²) of bay waters and the navigable tributaries.

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MEASUREMENT OF EFFECTIVENESS: There will be fewer complaints about vessels causing environmental degradation because operators will know how to better protect critical habitats. Other environmental measures that may be useful would include increases in shallow sea grass beds and increases in beach-nesting colonial bird populations.

COST ESTIMATE: Printing of 21,000 copies will cost approximately \$20,000. The boater survey development and printing costs may amount to \$30,000.

FUNDING SOURCES: Potential funding sources will be among those identified in Chapter 12, Section 12.8.1.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: None.

ACTION 7.3

Follow up the Municipal Outreach Project with continued production of "Community Connection" newsletter and with a community awards program. [This outreach project was started with a grant received by the BBWA through BBNEP Action Plan/Demonstration Project (APDP) funding in 1999.]

SIGNIFICANCE OF ACTION: Serving as a catalyst for the 33 municipalities in the watershed to plan and educate with a watershed perspective, rather than strictly within their municipal boundaries, will benefit all the watershed's communities and ecosystems.

STATUS AND PRIORITY: Recommendation, Medium Priority.

WHO: The Barnegat Bay Estuary and Watershed Foundation (BBWEF) (Lead) would be the primary organizer for this activity. JCNERR will partner for the production of "Community Connections."

HOW:

Education: Continue production of "Community Connection" newsletter in coordination with JCNERR for use as an outreach and information-sharing tool among the municipalities of the watershed.

Community involvement: Modify and continue community recognition program for watershed-related projects administered by municipalities. This would become an annual awards program. The annual recognition program would select and recognize one watershed-related project from one community per year within the Barnegat Bay watershed as part of an annual watershed event held in conjunction with the watershed river cleanup.

WHEN: The newsletter will be produced quarterly upon the availability of funds, with a target start-up date of 2002. The recognition awards ceremony will coincide with the river cleanup day.

WHERE: Outreach will occur throughout the Barnegat Bay watershed.

MEASUREMENT OF EFFECTIVENESS: The activities in the communities within the watershed will be identified and monitored to determine how many new projects develop as a result of the recognition program.

COST ESTIMATE: The program cost totals \$10,000 per year, including press releases and press coverage and a watershed event to award a community with a Barnie watershed plaque.

PLAQUE	\$100.00
ORGANIZER	\$20.00 / HOUR, UP TO 20 HOURS PER WEEK
MAILINGS	\$150.00
TELEPHONE AND FAX BILL	\$50.00
PAPER	\$200.00
TRAVEL	\$100.00

FUNDING SOURCES: BBNEP Public Outreach funding or other available sources, preferably community generated.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: None.

ACTION 7.4

Use environmental commissions to foster the watershed approach.

SIGNIFICANCE OF ACTION: Local environmental commissions, each representing one of the state's municipalities, have been created and are served by the Association of N.J. Environmental Commissions (ANJEC). Most Ocean County municipalities have environmental commissions and are members of ANJEC. The environmental commissions serve a local planning function within the municipalities as well as an advisory role. Highlighting the role of the environmental commissions within Ocean County will improve the ability of local governments to implement sustainable development practices with strong linkages to the CCMP goals and objectives.

STATUS AND PRIORITY: Recommendation, Medium Priority.

WHO: BBNEP and the Ocean County Environmental Agency (leads) and the individual environmental commissions.

HOW: Environmental commissions are currently included in the local government planning process. By creating a strong linkage to CCMP goals and objectives, environmental commissions will help local governments better pursue sustainable development policies.

WHEN: Initiation in 2002.

WHERE: Every municipality with an active environmental commission would be included in this action.

MEASUREMENT OF EFFECTIVENESS: Success will be measured with the enhanced implementation of sustainable development practices at the local government level. This could be measured through the increased activity of the environmental commissions in advising their local municipalities.

COST ESTIMATE: None available beyond existing Program funding.

FUNDING SOURCES: No firm commitment. See discussion of potential funding sources in Chapter 12, Section 12.8.1.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: Municipalities would need to increase the role of environmental commissions within the local planning process, either through new or revised municipal ordinances or policy initiatives.

ACTION 7.5

Support the Barnegat Bay Watershed and Estuary Foundation (BBWEF) to protect Barnegat Bay and the watershed resources.

SIGNIFICANCE OF ACTION: The BBWA (now known as BBWEF), which was active during the BBNEP planning phase, is a non-profit citizen's action organization made up of watershed residents. The BBWA (a.k.a. BBWEF) has recently constituted itself for the post-CCMP implementation phase as a multi-stakeholder, non-profit organization to educate the public about protecting resources, promoting better land-use practices, and supporting the Program through funding and concerted action.

STATUS AND PRIORITY: Commitment, High Priority.

WHO: BBWEF (lead), Ocean County and BBNEP.

HOW: Grants available through the BBNEP public outreach program would fund qualified activities of the BBWEF that inform and empower the public to participate in the environmental protection of Barnegat Bay and its watershed. This action would require annual support for the BBWEF.

The BBWEF will serve as the non-profit arm of the Program, focusing on carrying out public outreach and education activities and other low-cost action items. The roles and responsibilities of the BBWEF and its linkage to the Program office are currently being worked out by the BBWEF, a private consultant, and the Ocean County government.

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WHEN: Ongoing — BBWEF will raise funds to implement specific action items that do not yet have funding commitments.

WHERE: The BBWEF would be active throughout the watershed.

MEASUREMENT OF EFFECTIVENESS: An annually increasing amount of funds generated by the BBWEF and dispensed to implement CCMP actions. The first funding target would be \$10,000 for start-up costs.

COST ESTIMATE: \$10,000 start-up cost.

FUNDING SOURCES: Section 320 of the CWA.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: None.

ACTION 7.6

Establish a Barnegat Bay Blue Card certification program on soil health, low-input landscapes, and balancing the water cycle.

SIGNIFICANCE OF ACTION: The Blue Card certification program would train and certify construction inspectors, landscapers, builders, contractors, and others to recognize the problems that may come with development, and to take steps to retain and incorporate natural features into the site development process for the purposes of runoff reduction, groundwater recharge, and water quality.

Implementation of a watershed-wide training and certification program will prevent water quality problems from becoming worse and help prevent impacts from future development. By engaging those most involved in activities that disturb the land, the program will enhance participants' understanding of the link between soil quality and watershed health, and move the BBNEP closer to its water quality goals.

STATUS AND PRIORITY: Recommendation, Low Priority.

WHO: OCSCD (Lead), NRCS, RCE, NJDEP, OCPD, Ocean County Vocational-Technical School (OCVTS), and Ocean County College.

HOW: Representatives of NRCS, OCSCD, RCE, and OCPD will identify training needs and develop a core-training program. Following identification of training needs and in cooperation with OCVTS and the Ocean County College, staff from these entities would conduct Blue Card training seminars offering continuing education credits for landscapers, builders, land-grading contractors, and personnel from public schools and parks departments.

This will be a volunteer training program for those professionals who want to learn more about the significance of soil quality management and would like to receive certification.

WHEN: Initial core training will be targeted for 2003. Specialized training will begin early in 2004. Beginning in the summer of 2004, landscapers, builders, and grading contractors can complete the core training, obtain at least three credits, and receive a Blue Card certification. The certification will be valid for a period of three years, and re-certification will require the applicant to obtain an additional six credits over the next three years to maintain certification.

WHERE: The Blue Card certification program will be available throughout the watershed.

MEASUREMENT OF EFFECTIVENESS: The success of this action will be measured first by the number of professionals who complete the specialized training.

COST ESTIMATE: It will cost \$75,000 to establish the program and core training.

FUNDING SOURCES: Registration fees will help provide some support for continuing education and training. Other potential funding sources are identified in Chapter 12, Section 12.8.1.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: None.

ACTION 7.7

Use data and information from the Natural Resource Inventory (NRI) to promote the use of Best Management Practices (BMPs).

SIGNIFICANCE OF ACTION: Through the implementation of this action, Barnegat Bay watershed residents will understand the connection between properly managing the soil and natural resources on their property and the overall watershed. Residents will have the opportunity to participate in a voluntary program in which they use soil health practices that will reduce stormwater runoff and potential nonpoint pollution sources. Implementation of this action will also support the objectives of the Habitat and Living Resources Action Plan (Chapter 6).

STATUS AND PRIORITY: Recommendation, Low Priority.

WHO: OCSCD (Lead), NRCS, RCE.

HOW: Local homeowners will receive assistance in establishing an environmentally friendly yard by meeting with the OCSCD at their home sites where they will review their current practices and resources. The OCSCD would then prepare a conservation plan for the property, recommending various soil and water conservation practices, emphasizing low-input lawn and garden care and reducing the footprint of impervious surfaces. Once the residents have implemented the conservation plan, OCSCD will re-visit the property to certify compliance with the plan's recommendations. When homeowners become certified they will be eligible to receive cost-sharing assistance for having implemented the conservation plan and a certificate from the OCSCD for participating in the program.

WHEN: Target date is 2002.

WHERE: Based on the information provided through the NRI, a small sub-watershed will be selected as the pilot area for implementation. Other sub-watersheds will be included in the program following the completion of the pilot project. They will be selected on the

basis of information from the NRI, with the sub-watersheds most at risk from runoff and nonpoint pollution designated as priorities.

MEASUREMENT OF EFFECTIVENESS: Effectiveness will be measured by the annual increase in the number of homeowners assisted.

COST ESTIMATE: \$75,000.

FUNDING SOURCES: No firm commitments. See discussion on potential funding sources in Chapter 12, Section 12.8.1.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: Vegetative practices must be preserved and should not be removed by homeowners.

ACTION 7.8

Design and construct environmentally sensitive demonstration gardens in all municipalities.

SIGNIFICANCE OF ACTION: Many residential landscapes declined during drought years, in part due to poor plant/grass selection and poor irrigation practices, including excess irrigation used to improve landscapes, but which resulted in increased leaching potential of pesticides and fertilizers. Environmentally sensitive and low water use landscaping (xeriscaping) techniques can be implemented to reduce such impacts. Gardens designed using xeriscaping will be located in highly visible public places such as parks and grounds surrounding municipal buildings, libraries and post offices. Public land managers will be informed about the design and construction of environmentally sensitive gardens.

STATUS AND PRIORITY: Recommendation, Low Priority.

WHO: RCE (Lead), in conjunction with OCSCD and NRCS. Rutgers staff, volunteers from RCE's Master Gardener program, and/or a professional horticulture consultant will develop the landscape designs and coordinate planting. United Water, Toms River will also

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support this effort. Municipal employees will assist during planting and will be responsible for the future maintenance of the demonstration garden.

HOW: A xeriscape demonstration garden was established in 1999 by the RCE in partnership with United Water at their Toms River headquarters on Wall Street. A native plant demonstration garden was established by OCSCD at Hebrew Park in Lacey Township.

Two municipalities will be selected annually for participation, either through a lottery or a competitive grant. A demonstration garden of low-input grasses and native/xeriscape/pest resistant plants will be designed by a horticulturist consultant, RCE staff, or trained Master Gardener designers.

The gardens will be announced and promoted through municipal mailings. RCE staff, OCSCD staff, consultants and/or Master Gardener volunteers will conduct instructional sessions at each garden site in conjunction with other municipal events to reach as many residents as possible and promote low-input landscapes.

WHEN: The program can be initiated within one year after receipt of funding. The target date is 2002.

WHERE: Demonstration gardens will be constructed at various selected locations throughout the watershed.

MEASUREMENT OF EFFECTIVENESS: To measure the effectiveness of this action BBNEP will track the number of gardens installed in Ocean County and the attendance at outdoor educational events. The BBNEP will also conduct event surveys to assess the increase in public awareness about actions to control and reduce nonpoint source pollution.

COST ESTIMATE: The program will cost \$35,000 annually per garden including costs for part-time horticulture consultant (\$10,000–\$15,000), plant material, irrigation systems, weed control blankets, mulch, soil testing, supplies, and travel.

FUNDING SOURCES: No firm commitments. See discussion on potential funding sources in Chapter 12, Section 12.8.1.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: None.

ACTION 7.9

Construct an environmentally sensitive demonstration lawn for homeowners to use as a model for landscaping plans.

SIGNIFICANCE OF ACTION: Homeowners often improperly irrigate established turfgrass stands. Excess irrigation increases the leaching potential of pesticides and increases disease pathogens (particularly when irrigation is timed improperly). Some varieties of turfgrasses used by homeowners often require more irrigation than other, lower maintenance varieties. The lower maintenance varieties also require less fertilizer and pesticides because they are hardier and pest resistant. Planting environmentally sensitive lawns will reduce nonpoint source pollutants associated with pesticides and fertilizers and will promote conservation of water supply sources.

STATUS AND PRIORITY: Partial Commitment, Medium Priority.

WHO: RCE (Lead) will determine the site(s) utilized in cooperation with N.J. State Forest Tree Nursery, OCSCD, and senior villages. Master Gardener volunteers and/or county/state grounds employees will be utilized to establish plots.

Extension staff and Master Gardener volunteers will hold field days in conjunction with other county/agency events for optimal attendance.

HOW: A demonstration lawn site will be planted to encourage replacement of Kentucky bluegrass lawns with low-input lawns. The demonstration site will include a variety of recommended turfgrass seed types/blends adapted to Barnegat Bay watershed soil conditions to withstand drought and low water use. Turfgrass will be planted according to existing research protocol. They will be sown side-by-side and maintained to serve as visual comparisons.

The demonstration will be located in a highly visible site accessible to the public in one or more locations in the county. Educational information to accompany the demonstration site will include information on turf-grass selection, proper watering, proper fertilization, and Integrated Pest Management (IPM) methods for pest control. The site will be chosen to foster both guided and unguided tours.

An annual field tour of the site will be held to promote these varieties with low-maintenance characteristics. Proper lawn care maintenance in general will also be discussed.

WHEN: Late 2001.

MEASUREMENT OF EFFECTIVENESS: Number of lawns installed will determine the effectiveness of this action.

COST ESTIMATE: \$5,000–\$8,000 (personnel, travel, equipment, seed, maintenance costs, signs, educational brochure, supplies) annually.

FUNDING SOURCES: Funding for one year of the program (2000–2001) has been provided by the BBNEP. Additional funding for future years will be sought by the BBWEF or provided by other potential funding sources identified in Chapter 12, Section 12.8.1.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: None.



ACTION 7.10

Conduct shellfish resource survey of the bay to examine potential causes of stock decline and meat discoloration in hard shell clams. Explore resource enhancement strategies so that an adequate supply of shellfish exists to reap the benefits of improved water quality resulting from Action Item 5.25 in the Water Quality/Water Supply Action Plan.

SIGNIFICANCE OF ACTION: The last comprehensive shellfish stock assessment of Barnegat and Little Egg Harbor bays was conducted by the NJ Division of Fish and Wildlife (Bureau of Shellfisheries) in 1985–1987. Since that time, aside from sporadic site inspections associated with coastal development permits, the only information the Division has regarding the status of the shellfish resource is from shellfishermen. Without exception, the shellfishermen report declining catches. In addition, hard clams in vast areas of Barnegat and Little Egg Harbor bays have discolored meat that ranges from olive drab to nearly black. While the discoloration has been determined to be due to an ingested plant pigment, the ecological cause has not been investigated.

STATUS AND PRIORITY: Recommendation, Medium Priority.

WHO: NJDEP, Division of Fish and Wildlife, Bureau of Shellfisheries.

HOW: Hire additional staff in the Bureau of Shellfisheries to undertake this survey. Four positions would be needed: senior biologist, principal environmental technician, boat operator, and technician. The survey will be carried out using Standard Operating Procedures previously established by NJDEP (Nacote Creek Research Lab).

WHEN: Target date for initiation is spring 2002.

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WHERE: This action will be carried out for shellfish beds throughout the estuary.

MEASUREMENT OF EFFECTIVENESS: Effectiveness will be measured at first by the number of shellfish beds surveyed. Further measures will include the number of actions taken to enhance shellfish resources, followed by a trend in improving shellfish stocks.

COST ESTIMATE: \$190,000 for all activities.

FUNDING SOURCES: No firm commitments. See discussion of potential funding sources in Chapter 12, Section 12.8.1.

REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES: None currently identified.

