



---

## CHAPTER 4

---

# Introduction to Action Plans

---

*Racing sloops in Barnegat Bay, circa 1930. PHOTO COURTESY OF OCEAN COUNTY HISTORICAL SOCIETY.*

---

The difficulty lies not so much in developing new ideas  
as in escaping from old ones.

--*Keynes*

---

### 4.1 MANAGEMENT STRATEGIES

The CCMP has been divided into four major Action Plans:

1. Water Quality/Water Supply;
2. Habitat and Living Resources;
3. Human Activities and Competing Uses; and
4. Public Participation and Education.

### 4.2 ACTION PLANS

#### 4.2.1 WATER QUALITY/WATER SUPPLY ACTION PLAN

Water quality in the Barnegat Bay watershed is being degraded by nonpoint and point sources of pollution. Excessive nutrient inputs, coupled with bacterial pollution, upset the natural balance of the Barnegat Bay ecosystem and can directly impair human uses of the bay, including restrictions on shellfish harvesting and swimming. A significant amount of this pollution is attributed to development on land and the activities associated with development (e.g., impervious cover, vehicle use, lawn and garden maintenance, and septic systems) although other sources, such as boats and wildlife populations, also contribute to the problem. The Water Quality/Water Supply Action Plan in Chapter Five presents Action Items designed to effectively remediate the impacts impairing water quality and quantity throughout the watershed.

#### 4.2.2 HABITAT AND LIVING RESOURCES ACTION PLAN

The continued health and biodiversity of marine and estuarine systems depends on the maintenance of high-quality habitat. Threats to habitat in the Barnegat Bay watershed include conversion of open land and forest to residential and commercial development, highway construction, marinas, dredging and filling, and bulkheading. Declines in fish and wildlife

populations have resulted from fragmentation and loss of habitats and ecosystems; pollution and decreased water quality due to increases in the runoff of sediments, nutrients, and chemicals; and overexploitation of resources.

The Habitat and Living Resources Action Plan, presented in Chapter Six, contains a suite of Action Items to combat loss and alteration of habitat. Also discussed is the decline in fisheries stocks.

#### 4.2.3 HUMAN ACTIVITIES AND COMPETING USES ACTION PLAN

A key to effective environmental management is to realize that environmental degradation involves individual actions among stakeholder groups.

Effective management requires careful consideration of the balance between appropriate and necessary uses on the one hand, and protection of natural resources on the other. Given Ocean County's increasing population and popularity as a resort area, the BBNEP recognizes the need to limit constraints on the use of Barnegat Bay and its watershed.

The Human Activities and Competing Uses Action Plan, presented in Chapter Seven, targets two primary areas of competing uses:

- Land use and development activities that threaten environmental quality; and
- Contention over the use of boats and personal watercraft (PWC).

This Action Plan complements the Habitat and Living Resources and Water Quality/Water Supply Action Plans by presenting actions individual citizens can take to positively impact Barnegat Bay and its watershed.

# INTRODUCTION TO ACTION PLANS

## 4.2.4 PUBLIC PARTICIPATION AND EDUCATION ACTION PLAN

The BBNEP recognizes that the public is essential to the protection of Barnegat Bay. The Public Participation and Education Action Plan presented in Chapter Eight was developed to increase the public's understanding of the workings of the bay and its watershed and how individual actions impact the bay and its natural resources. The Action Items presented in this plan address all the priority problems by fostering a stewardship ethic among Ocean County residents and visitors through citizen monitoring programs, increased estuarine awareness, and environmental education.

## 4.3 ACTION PLAN PRIORITIES

The BBNEP priority issues and associated Action Items were refined following public comments received from:

- An extensive series of public meetings throughout the Barnegat Bay Watershed;
- Local government workshops and meetings;
- Postings on the Barnegat Bay Estuary Program website; and
- 130,000 mailings of a 12-page newspaper insert describing the BBNEP and priority issues of concern.

The Barnegat Bay Estuary Program, represented by the Policy Committee, the Management Committee, Science and Technical Advisory Committee, and the Citizens Advisory Committee, developed a set of criteria that were used to prioritize the Action Items in each of the Action Plan chapters of the CCMP. This included Chapter 5. Water Quality/Water Supply; Chapter 6. Habitat and Living Resources; Chapter 7. Human Activities and Competing Uses; Chapter 8. Public Participation and Education; and Chapter 9. Monitoring.

**The seven criteria of equal weight that were developed are as follows:**

1. Importance of achieving a program objective;
2. Future actions depend on getting the action done;
3. There is an existing commitment by a viable entity to do this action;

4. There is vigorous public support for this action;
5. This action supports more than one program objective;
6. There is a regulatory mandate to do this action; and
7. There is great interest on the part of one or more of the agencies involved in the BBNEP in this action.

Each Action Item in the CCMP was then rated as either "High", "Medium", or "Low" priority, based on these seven criteria. In general, the Action Items in each Action Plan chapter were grouped in order of priority, from highest to lowest. Action Items were rated as a "High" priority for implementation if more than four of the seven criteria were satisfied. Action Items were rated as a "Medium" priority if three or four criteria were satisfied. Action Items were rated as a "Low" priority for implementation if one or two criteria were satisfied.

Tables 4-1 through 4-4 include the assessment of priority for each of the Action Items in Chapters 5 through 8. In addition, the summary tables of Action Items in each of those chapters include a column designating the relative priority of each action.

## 4.4 OBJECTIVES

A critical step in the development of the Action Plan chapters (i.e., Chapter 5. Water Quality/Water Supply; Chapter 6. Habitat and Living Resources; Chapter 7. Human Activity and Competing Uses, and Chapter 8. Public Participation and Education) was the identification of quantifiable objectives, environmental indicators for the measurement of success in achieving those objectives, and agencies responsible for facilitating and monitoring progress. Measuring environmental indicators will be achieved through existing or future monitoring programs which will, in turn, help document the progress in attaining the quantifiable objectives. Trends identified through continued monitoring will serve the program by noting the achievement of milestones or helping to redirect future remedial action.

A timeline for start-up and completion of Action Items has also been included as an adjunct for tracking mile-

Table 4-1. Water Quality and Water Supply Action Plan Criteria for Priority Setting.

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
5.1	Development of Total Maximum Daily Loads (TMDLs) for areas listed on the 303(d) list of impaired waterbodies.	✓	✓	✓			✓	✓	H
5.2	Complete a high-intensity Natural Resources Inventory (NRI) to identify pollution sources from land use information and site conditions.	✓	✓		✓	✓	✓		H
5.3	Retrofit retention or detention basins and retrofit stormwater basins to increase infiltration and recharge of rainfall runoff.	✓				✓	✓		M
5.4	Implement Phase II Municipal Stormwater Rules in the Barnegat Bay Watershed.	✓		✓		✓	✓	✓	H
5.5	Encourage native species landscaping to minimize water use and fertilizer and pesticide application.	✓				✓	✓		M
5.6	Develop a financial incentives mechanism, "Water Quality Rebate", for implementing Best Management Practices on non-federal, non-agricultural lands.	✓				✓	✓		M
5.7	Institute the Nonpoint Education for Municipal Officials (NEMO) program within the Barnegat Bay Watershed.	✓			✓	✓	✓		M
5.8	Promote existing technical and financial assistance programs to implement soil management practices on agricultural lands.	✓			✓	✓	✓		M

# INTRODUCTION TO ACTION PLANS

Table 4-1. (continued)

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
5.9	Identify the extent of water quality problems emanating from livestock farms and work with livestock producers to reduce runoff from manure stockpiles.	✓					✓		L
5.10	Develop a management strategy to reduce the congregation of Canada Geese populations in urban areas.	✓			✓	✓	✓		M
5.11	Sample and analyze water to evaluate fertilizer and pesticide residues introduced into surface water systems.	✓	✓		✓		✓		M
5.12	Continue publication of "Pesticides for New Jersey" to include site-specific recommendations for the use of pesticides on golf courses and public lands.			✓	✓		✓		M
5.13	Promote <i>Home*A*Syst for the Barnegat Bay Watershed</i> (RCE, 1998) through widespread distribution.	✓			✓	✓	✓		M
5.14	Periodically examine technical and permit data on small point source discharge permit holders in order to promote and maintain an understanding of their relationship to the overall ecological health of the bay.	✓			✓		✓		M

TABLE 4-1. (continued)

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
5.15	Periodically examine technical and permit data on the Oyster Creek Nuclear Generating Station in order to promote and maintain an understanding of its relationship to the overall ecological health of the bay.	✓			✓		✓		M
5.16	Eliminate the discharge of boat sewage into the bay by promoting the use of sewage pumpout facilities.	✓		✓	✓	✓	✓		H
5.17	Acquire an additional sewage pumpout boat for Barnegat Bay and its major tributaries.	✓		✓	✓	✓	✓		H
5.18	Apply to the USEPA for federal designation of Barnegat Bay as a No Discharge Zone.	✓		✓	✓	✓	✓		H
5.19	Develop a "Clean Marinas" program to help marina owners and managers use their facilities in a manner that employs BMPs to the maximum extent.	✓		✓	✓	✓	✓		H
5.20	Establish a comprehensive water supply plan for the Barnegat Bay watershed that will guide water supply development, use and reuse through the year 2040 and, to the maximum extent possible, maintain the natural hydrology of the watershed.	✓	✓		✓	✓	✓	✓	H

# INTRODUCTION TO ACTION PLANS

TABLE 4-1. (continued)

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
5.21	Develop a workplan and institute controls for management of water demand/water conservation.	✓	✓			✓	✓	✓	H
5.22	Integrate existing shallow groundwater protection programs.	✓	✓		✓	✓	✓		H
5.23	Establish a network of three weather stations in the watershed tied to the South Jersey Resource Conservation & Development RISE network.							✓	L
5.24	Establish a demonstration project for wastewater reuse, which will be discharged back to the watershed, and which alleviates the need for potable water for irrigation of lawns, golf courses, or other public areas.	✓			✓	✓	✓		M
5.25	Assist municipalities in their involvement in the NJDEP Shellfish Waters and Bathing Beaches protection strategies for the Barnegat Bay watershed.	✓		✓	✓	✓	✓		H



TABLE 4-2. Habitat and Living Resources Action Plan Criteria for Priority Setting.

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
6.1	Protect & improve vegetated buffer zones adjacent to coastal wetlands & freshwater tributaries to maintain continuous riparian corridors, for habitat protection and low-impact recreational pursuits.	✓		✓		✓	✓	✓	H
6.2	Conduct a Bamegat Bay ecosystem restoration feasibility study.	✓	✓	✓		✓		✓	H
6.3	Control erosion in threatened shoreline areas.				✓	✓			L
6.4	Manage tidal wetlands to preserve unditched wetlands & rehabilitate wetlands that have been ditched or otherwise altered.	✓	✓						L
6.5	Maintain intact large blocks of Pinelands habitat within state parks & forests & other publicly owned lands.	✓	✓		✓	✓			M

# INTRODUCTION TO ACTION PLANS

TABLE 4-2. (continued)

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
6.6	Implement more effective enforcement of current regulations regarding sensitive coastal habitats.	✓	✓		✓	✓			M
6.7	Coordinate and integrate management of federal lands for natural habitat values.	✓	✓			✓		✓	M
6.8	Facilitate partnerships for habitat protection and restoration projects.	✓	✓	✓	✓	✓			H
6.9	Revise municipal master plans to encourage subwatershed planning to minimize impervious coverage & maintain natural habitat and landscape values.	✓	✓	✓	✓	✓			H

TABLE 4-2. (continued)

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
6.10	Assess the effectiveness of CAFRA II regulations within the Barnegat Bay Coastal Zone Boundary.	✓	✓	✓	✓	✓	✓		H
6.11	Identify and manage impaired sub-watershed through local government cooperation to address water resource issues that cross municipal boundaries.	✓	✓			✓			M
6.12	Develop a cooperative approach among the Pinelands Commission, state parks, state wildlife management areas, state forests, and other state agencies to coordinate watershed protection on state lands.	✓	✓		✓	✓			M

# INTRODUCTION TO ACTION PLANS

**TABLE 4-3. Human Activities and Competing Uses Action Plan Criteria for Priority Setting.**

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
7.1	Draft a Barnegat Bay personal watercraft (PWC) management strategy, thereby setting an example for statewide policy.	✓	✓	✓	✓				H
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.	✓		✓		✓			M
7.3	Follow up the Municipal Outreach Project with continued production of "Community Connection" newsletter and with a community awards programs.	✓				✓	✓		M
7.4	Use environmental commissions to foster the watershed approach.	✓				✓	✓		M
7.5	Support the Barnegat Bay Watershed and Estuary Foundation (BBWEEF) to protect Barnegat Bay and its watershed resources.	✓	✓		✓	✓			H

TABLE 4-3. (continued)

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
7.6	Establish a Barnegat Bay Blue Card Certification program on soil health, low-input landscapes, and balancing the water cycle.	✓				✓			L
7.7	Use data & information from the Natural Resource Inventory (NRI) to promote the use of Best Management Practices (BMPs).	✓	✓						L
7.8	Design and construct environmentally sensitive demonstration gardens in all municipalities.	✓				✓			L
7.9	Construct an environmentally sensitive demonstration lawn for homeowners to use as a model for landscaping plans.	✓		✓		✓			M
7.10	Conduct shellfish resource survey.	✓	✓		✓				M

# INTRODUCTION TO ACTION PLANS

**TABLE 4-4. Public Participation and Education Action Plan Criteria for Priority Setting.**

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
8.1	Post the Pinelands Curriculum Guide Lessons for Grades 4-6 and 7-8 on the World Wide Web.	✓					✓		L
8.2	Conduct two, two-day summer teacher workshops through the Ocean County Vocational-Technical School (OCVTS) that focus on the Barnegat Bay Estuary and watershed.	✓		✓		✓	✓		M
8.3	Revise & reprint the Barnegat Bay Watershed Educational Resource Guide.	✓			✓	✓	✓		M
8.4	Conduct an annual Environmental Educators Roundtable.	✓			✓	✓	✓		M
8.5	Support the <i>Sea Grasses for Classes</i> Project - Institute of Marine & Coastal Sciences (IMCS), Rutgers University.	✓		✓	✓	✓	✓		H
8.6	Develop the Forest Resource Education Center (FREC) as a resource and interpretive center that promotes an understanding of the human & resource connections & a stewardship ethic among students, scouts, & the general public.	✓		✓		✓	✓		M

TABLE 4-4. (continued)

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
8.7	Develop a Barnegat Bay Watershed Education Campaign, to be implemented in elementary schools via a mascot, Barnie the Crab	✓			✓	✓	✓		M
8.8	Develop a Barnegat Bay watershed-specific activity guide.	✓		✓	✓	✓	✓		H
8.9	Continue the Alliance for a Living Ocean (ALO) Ecotour of a Barrier Island for schoolchildren and the general public.	✓			✓	✓	✓		M
8.10	Promote the development & use of outdoor classrooms.	✓				✓	✓		M
8.11	Establish a Bay Keeper Program as a public watchdog for the protection of Barnegat Bay.					✓	✓		L
8.12	Create a Barnegat Bay-specific Educational Guide outlining the natural and cultural ecotourism opportunities in Central New Jersey, with an emphasis on the Barnegat Bay watershed region.			✓			✓		L
8.13	Establish one waterway cleanup per year within the Barnegat Bay watershed.	✓				✓	✓		M

# INTRODUCTION TO ACTION PLANS

TABLE 4-4. (continued)

Action Item No.	Action Item Title	Importance of Achieving Goals	Future Actions Depend on Getting This Action Done	Existing Commitment	Public Interest in Support of Recommended Action Item	This Action Supports More than Use of the Program's Objectives	High Agency Interest in the Recommendation	There is a Mandatory Mandate for this Action	Rating: High Medium Low
8.14	Provide interpretive exhibits, programs, and activities focusing on the historical human uses of the environmental resources within the Barnegat Bay watershed.	✓		✓	✓	✓	✓		H
8.15	Provide education and technical training to local government officials & other coastal decision makers in the Barnegat Bay watershed guide.	✓		✓	✓	✓	✓		H
8.16	Revise and reprint the "Low-Maintenance Landscaping Homeowners' Guide."	✓			✓	✓	✓		M
8.17	Educate professional landscapers, municipal grounds personnel, and facility managers on more efficient and environmentally sensitive use of pesticides.	✓			✓	✓	✓		M
8.18	Promote the use of IPM methods.	✓			✓	✓	✓		M
8.19	Incorporate BBEP outreach and education displays and programs at the Environmental Learning Center of Ocean County.			✓			✓		L
8.20	Experience Barnegat Bay, a project of YES.	✓		✓		✓	✓		M



Action Items were refined following public comments received from several sources such as, an extensive series of public meetings throughout the Barnegat Bay Watershed, local government workshops and meetings, postings on the Barnegat Bay National Estuary Program website, and 130,000 mailings of a 12-page newspaper insert describing the BBNEP and priority issues of concern. Each of the Action Plan chapters cited above includes a table of quantifiable objectives as well as a timeline chart for action item implementation.

## 4.5 ACTION ITEMS

The individual Action Items that comprise the four actions plans were developed in an effort to achieve program goals and objectives. During the course of one year, four draft versions of the CCMP have been reviewed and revised in accordance with the recommendations of the Policy Committee, the Management Committee, the Science and Technical Advisory Committee, and various agencies. These reviews and revisions were done prior to release to the public for review and comment. A summary of BBNEP's response to comments received is located in Appendix B.

Each Action Plan contains an Action Item Summary Table listing the Action Items, their status, lead responsible agencies or organizations, tentative schedule, and estimated cost. It is recognized that many Action Items overlap priority issues and, therefore, will provide multiple benefits. Where Action Items are cross cutting (e.g., are applicable to more than one Action Plan), a notation is made in the "Other Action Plan Supported" column of the Summary Tables.

The following template was used to present individual Action Items.

### **ACTION**

In one or two sentences, describe a specific one-time task or a continuing activity.

**SIGNIFICANCE OF ACTION:** Explain how this action contributes to the overall objectives of the Barnegat Bay watershed program. This should be no more than a short paragraph.

**STATUS:** Note the programmatic status of the action (recommendation, commitment, or partial commitment). "Recommendation" indicates organizational willingness and capability to carry out the prescribed action item, but funding has not yet been secured. "Commitment" indicates that funding is available to carry out the Action Item.

**WHO:** Identify the agency, authority, citizens group, governmental body, trade association, corporate body, or private individual who is responsible or who has agreed to assume responsibility to complete or lead implementation of the action.

**HOW:** Give a description of the means and methods used to accomplish the specific action.

**WHEN:** Note a schedule of milestones, including start and finish dates of subtasks where possible.

**WHERE:** Describe the location and boundary of where the action is to take place.

**MEASUREMENT OF EFFECTIVENESS:** Give a qualitative or quantitative measurement to evaluate the effectiveness of the Action Item. The effectiveness of Action Items will also be assessed through the Monitoring Program Plan (Chapter Nine). The linkages between Action Items and the Monitoring Program Plan are indicated in Table 9-1.

**COST ESTIMATE:** State the total cost of the action, and include unit costs (per acre, per year) as appropriate. The cost of some Action Items can only be determined on a case-by-case basis. Therefore, in some cases, specific unit costs cannot be determined.

**FUNDING SOURCES:** Sources of funding for action items are listed wherever they are currently committed. For action items that are recommendations, often a funding source has not yet been determined. See the general discussion of financial strategy in Chapter 12 for a listing of funding sources that the Program expects to be available for the purposes of implementation. Rather than presuppose an individual funding source for a recommended action, the Program prefers to leave that designation to the continuing negotiation process among the Program stakeholders.

## INTRODUCTION TO ACTION PLANS

---

**REQUIRED REGULATORY, ORDINANCE, OR POLICY CHANGES:** State if the proposed action requires new regulation, ordinance, or policy.

