

# Integrating Ecosystem-based Management (EBM) in NYS Parks: Balancing Ecosystem Sustainability with Human Needs

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## Abstract

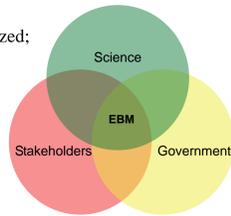
New York State Parks, a member of the Ocean and Great Lakes Ecosystem Conservation Council, created in 2006 through Article 14 of Environmental Conservation Law, has been working to integrate Ecosystem-based Management (EBM) into programs, policies, and activities. EBM is an adaptive approach to management, ensuring the coexistence of healthy, functioning ecosystems with human communities and activities. This management structure differs from others in that it uses a holistic approach to management, incorporating an ecosystem perspective, of which people are an integrated part. Additionally, it incorporates six guiding principles. The goals of EBM integration within State Parks are to conserve, maintain, and restore coastal ecosystem and their watersheds so that they are healthy, productive, and resilient while being able to deliver the resources people want and need. While the focus of the Ocean and Great Lakes Ecosystem Conservation program is on ecosystems in and around marine and Great Lake systems, the program also calls for application of EBM principles to upstream watersheds. This program is still in its early stages, yet NYS Parks has incorporated EBM principles statewide into at least 3 on-the-ground projects, 5 park master plans, and new Agency policies. Additionally, through an EBM public literacy program, educational panels have been developed to introduce EBM to visitors in Long Island and New York City State Parks. Examples are explained in detail. EBM provides an excellent framework for collaborative, science-based, management that is adaptive and driven by measurable objectives. This initiative has bolstered interagency collaboration, improved State Park management and facilitated public stakeholder involvement.

## Introduction

To address the threats to our coastal ecosystems, the state legislature passed the New York State Ocean and Great Lakes Ecosystem Conservation Act (Act) in 2006 to protect New York's coastal ecosystems. This act created the Ocean and Great Lakes Ecosystem Conservation Council (Council). Consisting of nine state agencies, the Council works to improve coastal ecological health and provide economic security through Ecosystem-based Management (EBM). EBM is an integrated approach to management that considers the entire ecosystem, including humans. It is the policy of the state to conserve, maintain, and restore coastal ecosystems so that they are healthy, productive, resilient, and able to deliver the resources people want and need (NYS Environmental Conservation Law Article 14).

The governance of coastal ecosystems shall be guided by the following principles:

- Activities in and uses of coastal ecosystems are sustainable;
- Ecological health and integrity is maintained;
- Ecosystems' interconnections among land, air and water are recognized;
- Understanding of coastal ecosystems is enhanced;
- Decisions are informed by good science;
- When risks are uncertain, caution is applied; and
- Broad public participation occurs in planning and decision making.



EBM integrates 6 principles:

1. Place-based focus
2. Scientific foundation for decision-making
3. Measurable objectives to direct and evaluate performance
4. Adaptive management to respond to new knowledge
5. Recognition of interconnections within and among ecosystems
6. Involvement of stakeholders

New York State Parks owns and operates 176 State Parks and 35 Historic Sites encompassing over 313,000 acres of land and water. These properties contain over 359 rare species and natural communities (Evans & VanLuvan 2007) and a multitude of ecosystems and species of flora and fauna in many watersheds. Nearly 60 million people visit State Parks annually for its scenic, recreational, and natural resources and partake in activities such as hiking, bird watching, swimming, golfing, and camping. Balancing ecosystem sustainability with the wants and needs of the public is a challenge that provides an excellent opportunity for State Parks to implement EBM.

State Parks has implemented the coastal EBM approach state-wide, applying an ecosystem perspective throughout all watersheds in an effort to best manage New York's natural heritage in conjunction with human activities.

## Methods

To incorporate EBM into State Parks we created both educational and applied programs. EBM education is necessary for both Park employees and the public to maintain healthy ecosystems and economies within and outside Park boundaries. The applied program incorporates EBM into Parks' existing programs and initiatives including environmental projects, policies, and official documents.

- Staff trainings were created based on the 6 EBM principles, tailored for specific programs to facilitate EBM understanding and how it relates job duties. This enables Park staff to implement EBM into everyday actions.
- Employees apply EBM into their specific work elements and projects by considering EBM principles for each project and applying them where appropriate.
- Educational panels on Long Island and New York City were created for large numbers people to learn about the Atlantic Ocean's ecosystems. Similar educational panels are being created for Parks along the Great Lakes.
- EBM principles have been applied to natural resource stewardship, environmental interpretation, daily operations, master planning, the Statewide Comprehensive Outdoor Recreation Plan (SCORP), invasive species management, water quality, land acquisition, and sustainability.
- EBM language has been specifically developed for, and incorporated into master plans and official policies, providing a template used to facilitate an ecosystem perspective.
- We continue to evaluate Park programs and activities to create methods focused on how EBM can be further integrated.



Major watersheds and NY State Parks and Sites (dark green). Note most of NY State is in either the Great Lakes or Atlantic Ocean watershed.

## Examples

### On-The-Ground Projects

Many on-the-ground projects have utilized EBM principles to guide their development. One example is the East River Wetland Enhancement Project at Beaver Island State Park near Buffalo, NY.



To preserve and enhance eroding wetland habitat and promote plants and wildlife, as well as improve aesthetics, boat and fishing access, nature trails, environmental education, and recreation in this formerly degraded marina, state and federal agencies and local stakeholders implemented a wetland restoration project. Annual bird, amphibian, and vegetation monitoring occurs. Many target plant and animal species now inhabit the wetland and people enjoy fishing, kayaking, and bird watching.

### State Park Master Plans

Five Master Plans have incorporated EBM. These include: Caumsett, Hallock, Wehle, Green Lakes, and Sunken Meadow State Parks. EBM has been incorporated into the master planning template and has provided a structure for considering ecosystems and watersheds.

An example of EBM implementation is at Hallock State Park on Long Island. Staff from different Bureaus worked together to balance patron needs such as a nature center and trails while maintaining the sustainability of a pond, wetland, and forest.



The location of nature center and maintenance facilities, which minimize impacts to significant natural areas while still allowing access to the pond for education and viewing.



Hallock Pond, a kettle hole pond. This significant community, now a designated a Natural Heritage Area, will be protected from human impacts.



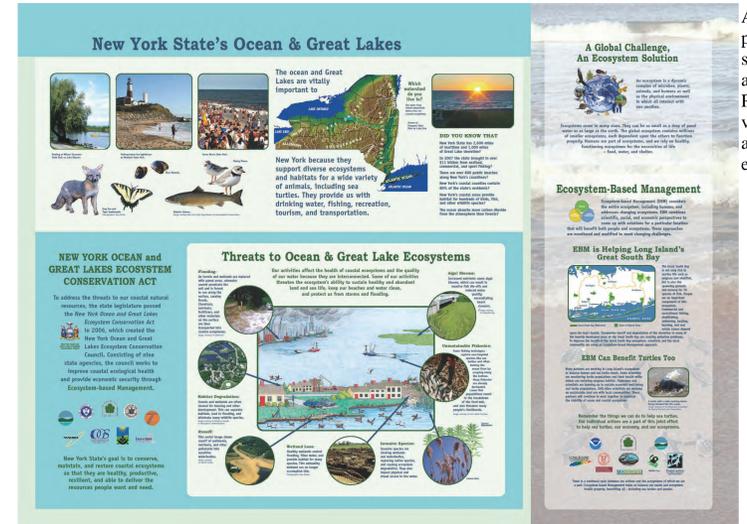
Some targeted species for population enhancement.

## State Park Policy

The most recent environmental policy, Policy on Fish and Wildlife Management in State Parks and Historic Sites has stated that the principles of EBM will be incorporated into wildlife management in State Parks. Other policies currently under development will also incorporate EBM.

## Education

To expand knowledge of ecosystems and EBM through our education program we created public educational panels and have had several staff-specific training and poster sessions.



An educational panel placed in several Long Island and New York City Parks to teach visitors about EBM and coastal ecosystems.

## State Park Programs and Activities

In order to integrate EBM into existing programs in State Parks, many were assessed and found to be appropriate as they have the potential to address both human needs and activities with ecosystem sustainability.

There are several programs in State Parks where EBM will be incorporated, these include:

- Park Law
- Agency Mission
- Agency Policy
- State Council of Parks
- Partnerships
- Sustainability Plan
- Environmental Education and Interpretation
- Communications Bureau
- Counsels Office
- Training Bureau
- Park Operations
- Invasive Species Management
- Information Management
- Grant Activity
- Grants-in Aid, LWCF Grants
- Real Property Services
- Acquisitions
- Planning
- SCORP
- Master Planning
- Other Planning Guides (Natural Resources, IMG)
- Environmental Management Bureau
- Water Quality Monitoring

## Conclusion

- The application of EBM improves project quality and environmental sustainability.
- State Parks' EBM program provides a framework for assuring environmental sustainability through incorporation of the 6 principles.
- Incorporating EBM into an agency must be conducted on a program-by-program basis as each has unique purposes and structure.
- Balancing ecosystem sustainability and human activities takes the collaboration of people from different programs, each providing unique expertise.
- Incorporating EBM into programs, policies, and projects is in an on-going process that will continue in an effort to conserve ecosystems and support human needs.
- EBM is an adaptive process: different approaches are constantly being evaluated.
- The Act has provided a mechanism for state agencies and stakeholders to collaborate.
- There are challenges in implementing EBM including:
  - explaining and relating EBM to employee work and job duties;
  - differing interpretations;
  - the impression that EBM is already being applied;
  - limited resources to reach stakeholders; and
  - continued monitoring and coordination are required.

## Acknowledgements

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## Literature Cited

Evan, DJ and DE VanLuvan. 2007. Biodiversity in New York's State Park System: Summary of Findings. A report prepared by the New York Natural Heritage Program. Environmental Conservation Law Article 14 - New York Ocean and Great Lakes Ecosystem Conservation Act § 14-0103.