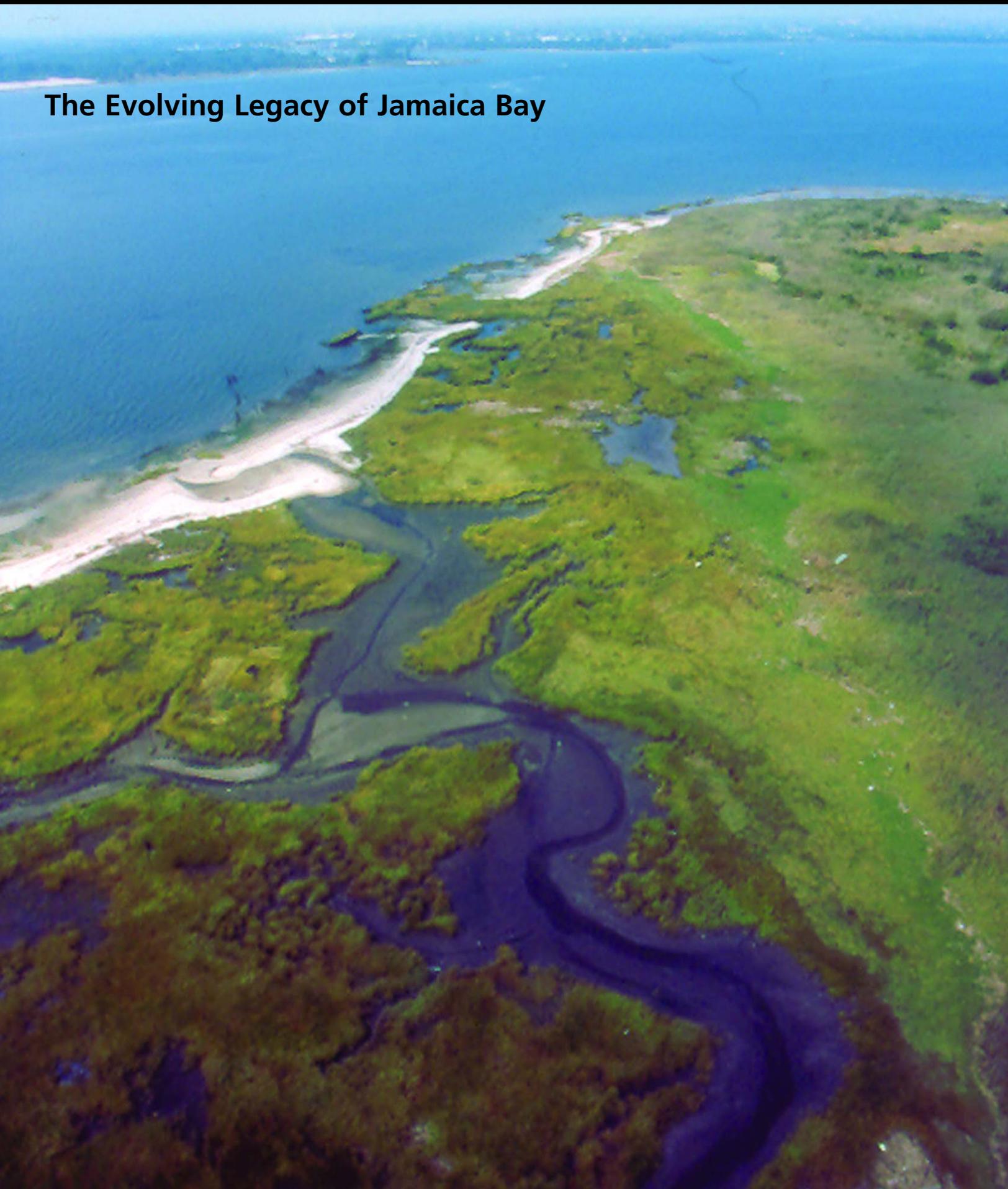




# The Evolving Legacy of Jamaica Bay





# The Evolving Legacy of Jamaica Bay

Gateway National Recreation Area  
Jamaica Bay Unit

U.S. Department of the Interior  
Washington, DC



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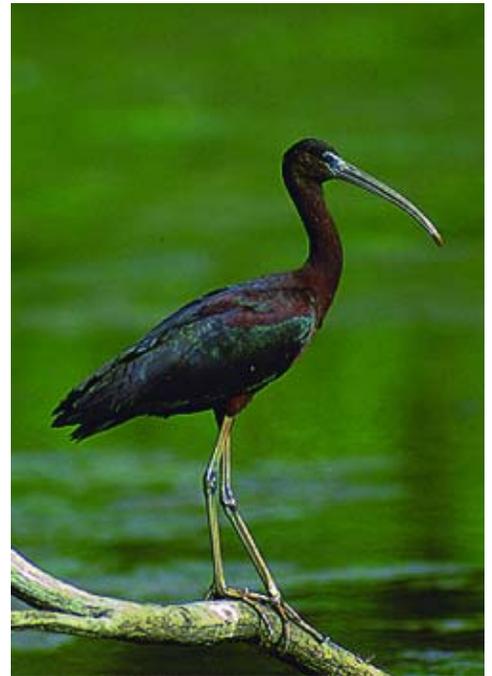


# Executive Summary

The purpose of this document is to summarize the input gathered by Jamaica Bay stakeholders convened to share their roles, concerns, and future visions of Jamaica Bay.

1. Jamaica Bay – one of the largest areas of open space in New York City – is an oasis of nature surrounded by urban development. The bay provides a sanctuary for the protection of wildlife and other natural resources . . . and is much loved by people throughout the region.
2. A diverse range of people value the bay for a variety of reasons.
3. Jamaica Bay is a critical component of a larger watershed and a complex, regional ecosystem.
4. Much of the bay is located within the boundaries of Gateway National Recreation Area, a unit of the national park system.
5. Development within the watershed and use of the bay have compromised many of Jamaica Bay's natural and cultural resources.
6. Today, many of the bay's environmentally significant salt marshes are rapidly eroding. Although the causes of this change are not fully understood, the National Park Service is leading efforts to stabilize the situation through applied research, mitigation, and restoration.
7. Although much of the bay is part of a national park unit, many other federal, state, and local agencies have jurisdiction in the bay. Actions of all of these agencies are not always coordinated, and important information is not being shared as well as it might be.
8. In 2002, the NPS began a process designed to:
  - bring government agencies together to form a working partnership group;
  - support innovative private-public-governmental partnerships operating in Jamaica Bay; and
  - engage the public in order to increase awareness and appreciation of the bay.
9. Through this process, public concerns and views about the bay were heard. People were asked to respond to basic questions about the bay in workshops, one-on-one meetings, public open houses, and other communication venues. The questions asked included:
  - Why is the bay a special place?
  - What are your concerns about the bay?
  - Who is studying the bay?
  - Who else is active in the bay?
  - What should the bay look like in the future?
10. People clearly value the bay because it:
  - is a sanctuary from urban life
  - offers solitude and opportunities to reconnect with nature
  - provides numerous recreational opportunities
  - serves as a classroom
  - possesses historic and cultural resources that connect us to the region's rich past
11. Many of the concerns for the bay include:
  - rapidly disappearing wetlands and salt water marshes
  - negative impacts from development
  - poor water quality
  - increasing visitor-use conflicts
  - limited and poor-quality access to the bay
  - lack of information sharing among bay researchers
  - lack of coordination among agencies having jurisdiction in the bay
  - inadequate enforcement of existing rules and regulations
12. Through comments and feedback, we discovered more than 25 governmental agencies have jurisdictional responsibilities in the bay.
13. More than 30 private, public, and/or non-profit entities currently have projects directed at bay restoration, resource protection, recreation, etc.

14. Agencies, partners, and the public also shared their personal visions for Jamaica Bay. These can be summarized by the following list of desired future conditions:
  - natural and cultural resources are protected
  - water quality is improved
  - there are more recreational opportunities
  - there is improved and better access to the bay
  - the bay is healthy and sustainable
  - noise, light, and air pollution are reduced
  - waste management practices are improved
  - visitors and bay users are active resource stewards
  - Jamaica Bay is a model for sustainable development
15. After summarizing the comments received through the public process, the work group developed some initial short and long-term strategies for achieving desired future conditions for the bay.
16. Short-term strategies developed by the group included:
  - increasing data sharing
  - celebrating even small victories
  - increasing public awareness about the bay
  - coordinating and adopting best practices for managing the bay
17. In the long term, the agency work group concluded that it is vital to establish a framework that would foster continued dialog and data sharing among government agencies, while promoting improved communication with the public.
18. Implicit in these conclusions is the assumption that the National Park Service should lead efforts to share research data among government agencies and to facilitate coordination of agency activity affecting Jamaica Bay.
19. In addition, the conclusions of the agency work group suggest that the National Park Service and all other stakeholders in Jamaica Bay both public and private should actively support the efforts of groups like the Jamaica Bay Task Force to facilitate information sharing and public dialogue on bay issues.
20. The National Park Service greatly appreciates the contributions made by everyone who participated in this process especially the agency representatives who attended all of the workshops. Gateway NRA hears and understands your message: that through collaboration, information sharing, coordinated management, and continued public dialog, a shared vision for Jamaica Bay can become a reality.



## Introduction

*Jamaica Bay has played an important role in the development of New York City and its surrounding environs.*

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*“Gateway is a remarkable oasis right in the middle of the hurly burly of big city life, and is a place where anyone looking to get away can find something fun, interesting, and educational to do. Gateway in the 21st century is going to be the best it's ever been.”*

- Congressman Anthony D. Weiner

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Once renowned for a robust shellfish industry, Jamaica Bay served as a backdrop for the region's emerging industrial and residential growth during the 20th century. Beginning in the 1950's, the bay adopted the role as a sanctuary from the intensity and alienation of urban life. Today, most visitors and residents value the bay for its diverse recreational opportunities and the chance to reconnect with nature.

But Jamaica Bay continues to change, and the trends are disturbing. Salt marshes—one of the bay's most critical habitats—are rapidly disappearing. Effluent and runoff from industrial and urban development surrounding the bay continue to compromise water quality and have eliminated commercial shellfishing. Other natural and human impacts combine to threaten Jamaica Bay's health and its continued sustainability as part of a viable ecosystem.

Government agencies with jurisdiction over the bay and entities with vested interests have been studying these changes, amassing considerable data in the process. Over the past few years, bay researchers and users have seen a growing need to share this information and coordinate research and management efforts. As the lead agency charged with managing Jamaica Bay, the National Park Service (NPS) invited other federal, state, and local agencies having a legal or jurisdictional responsibility for activities in the bay, as

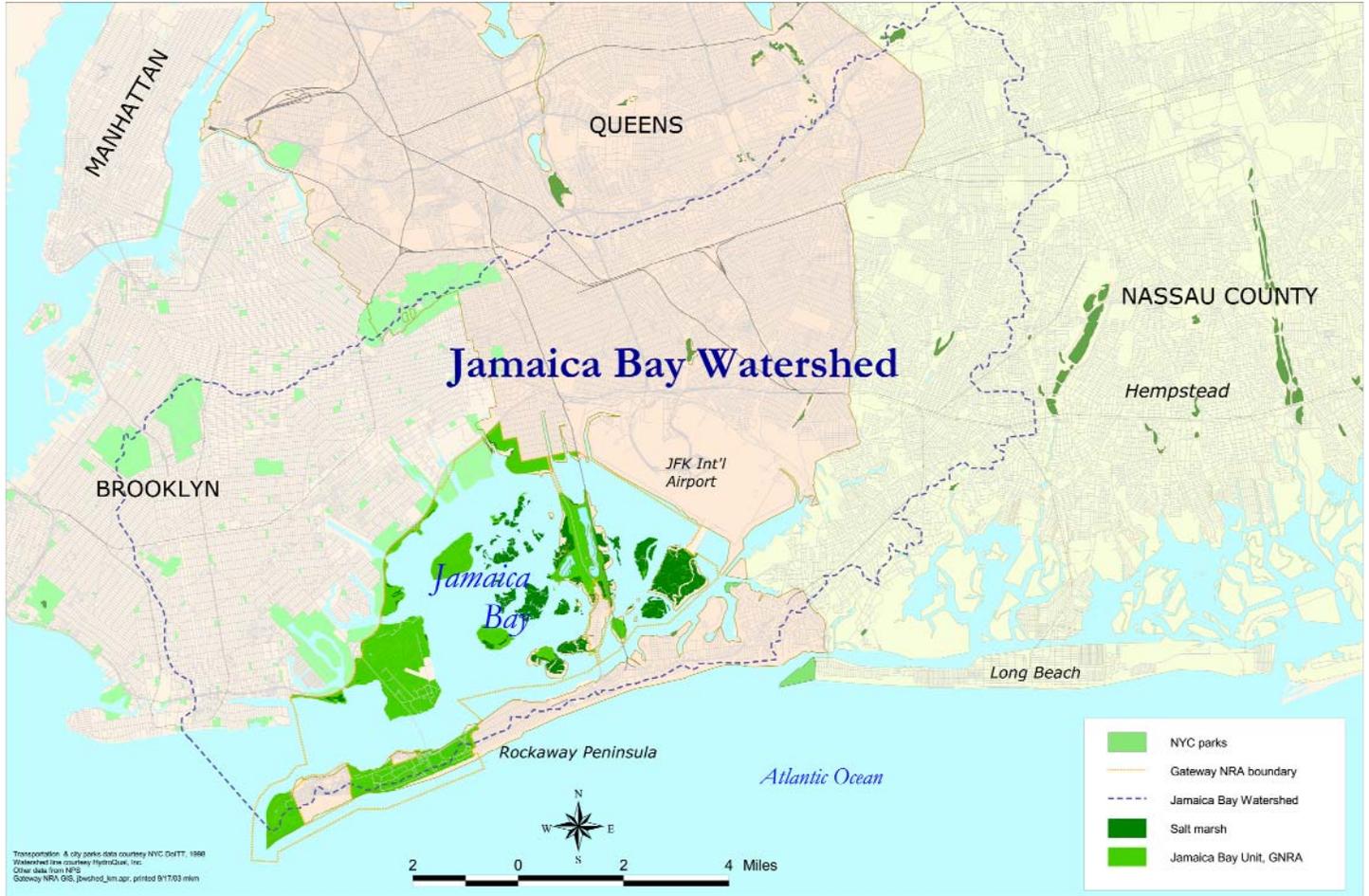
well as local groups and the public, to come together and share their views on issues.

The information shared, and the interaction gained through public involvement, were preliminary but critical steps in building productive working relationships among the various entities. The agency and public meetings also served to identify complementary programs and activities, as well as potential conflicts. This information will allow agencies and stakeholders to fine tune their activities and maximize benefits to the bay and New York City.

The report that follows summarizes the feedback received in agency workshops, public meetings, and through comment forms. It first discusses the nature and origins of the bay and how this report was developed through public involvement. It then examines “what was learned” from the feedback received. Finally, the report offers ways to improve how agencies and stakeholders work together to achieve long-term goals for Jamaica Bay.

The NPS hopes the findings presented here will provide a framework for long-term planning for Jamaica Bay, guide short-term actions, and inform future management decisions relating to the bay. By working together, agencies and stakeholders can begin to build a vision for the future of Jamaica Bay.





# Background

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## Gateway NRA Mission Statement

The Secretary shall administer and protect the islands and waters within the Jamaica Bay Unit with the primary aim of conserving the natural resources, fish, and wildlife located therein and shall permit no development or use of this area which is incompatible with this purpose.

Gateway encompasses the largest collection of natural systems, wildlife habitats, historic resources, and recreational opportunities in the New York City / New Jersey metropolitan area. We maintain, improve, and make these resources and opportunities available to the public for inspiration, education, and recreation. These areas include numerous sites of critical natural and cultural importance: to the health of local ecosystems; to the life of migratory and native species; and to the military, navigational, and aviation history of the region and the nation, especially in the context of the coastal defenses of New York Harbor. The responsibilities and attendant activities are inescapably shaped by the intense urban culture and value systems of the region. The park in turn endeavors to incorporate the NPS conservation ethic into those values.

Established with the express purpose of bringing the National Park Service experience to the urban population, we are truly the gateway to all national parks for millions of people.

## Defining “the Bay”

Jamaica Bay can be viewed in a variety of contexts. The bay is located in the Jamaica Bay Unit of Gateway National Recreation Area (NRA), a unit of the national park system. When the United States Congress created Gateway in 1972, it marked the culmination of decades of hard work by local governments, citizen groups, the NPS, and members of Congress to create one of the first urban national parks in the United States. The recreation area brings the national park experience to residents of the nation’s most densely populated city. It protects portions of the coastal ecosystem of one of the world’s most highly developed commercial and industrial regions, and it provides a model for how degraded resources can be rehabilitated.

The heart of the bay has been designated Jamaica Bay Wildlife Refuge. The refuge encompasses 9,100 acres within the boroughs of Brooklyn and Queens in New York City.

Characterized by salt marsh and upland islands interspersed with open waters, the refuge provides a variety of habitats for more than 300 species of birds. It’s a critical stop-over area along the Eastern Flyway migration route and is one of the best bird-watching locations in the western hemisphere. A diversity of species – including the glossy ibis, great blue heron, snowy egret, marsh hawk, eastern kingbird, terns, and a variety of gulls – can be found in the bay area. Because of this, the refuge was the first site to be designated by the National Audubon Society as an “Important Bird Area.”

The bay is a critical element of the greater Jamaica Bay watershed. To be responsible and effective stewards, we collectively must understand the relationships that make up this larger system.

Similarly, more than 25 local, state, and federal agencies have some jurisdictional responsibilities in Jamaica Bay, and numerous private and public entities have strong ties to the bay. These responsibilities reflect not only environmental needs, but also social, political, and economic realities at the, city, county, state, and federal level.

Just as management actions in the bay can influence the surrounding urban framework, so too can economic and political decisions within the

Jamaica Bay ecosystem – that is to say, New York City – affect natural conditions within the bay. Because of this inter-relationship, the National Park Service must understand the missions and mandates of other jurisdictional entities and stakeholders – and know where they complement and potentially conflict – in order to effectively manage Jamaica Bay.

*Because Jamaica Bay can be viewed in several dynamic contexts, there needs to be a clear definition of what we mean by “the bay.” For the purpose of this report, the term “bay” will be used to mean the waters and shores of the bay (approximately 12,000 acres) – recognizing that this area can influence and be influenced by larger environmental, social, political, and economic factors. The term “watershed” is applied to those portions of Queens, Brooklyn, and Nassau County (approximately 91,000 acres or 140 square miles) that drain naturally or through storm sewers into the waters of Jamaica Bay. Finally, when we refer to the “ecosystem,” we’re talking about the bay’s role within New York City and the surrounding region.*

## Changes in the Bay

Jamaica Bay is changing. Its salt-marsh islands are disappearing at an alarming rate. If projected trends are correct, the salt-marsh islands may vanish entirely within a few decades. What does marsh disappearance indicate about the health of the ecosystem? What dynamics are causing the change? What actions should be taken?

The natural processes occurring in Jamaica Bay are complicated and not fully understood. Much of the Jamaica Bay shoreline is hardened with infrastructure: Kennedy International Airport flanks the bay’s northeast shore, the Shore (Belt) Parkway follows the northwest shore, and bulkheads line many stretches of coastline. Channel dredging has altered the natural flow of water and sedimentation through the system. Over time, Breezy Point has built up and expanded to the west, constricting flow through the bay’s entrance. In addition, three sewage treatment plants discharge treated waste water into the bay.

The environmental health of Jamaica Bay is not the only concern. The bay means many things to many people. What opportunities does the future hold for fishing, boating, and other recreational uses? What role will Jamaica Bay play in New York City’s future?

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## Loss of Bay's Salt Marsh Area

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**1924 - 74**  
increases to 0.4%/yr

**1974 - 94**  
increases to 1.4%/yr

**1994 - 99**  
increases to 3.0%/yr

(Hartig et al. 2001)

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Understanding the factors driving and influencing the conversion of salt marshes to mudflats and other changes occurring will answer many of these questions. An initial step in comprehending changes in Jamaica Bay is to understand how it developed and evolved through time.

### Origins of the Bay

Over the past 25,000 years Jamaica Bay has taken on numerous configurations that eventually evolved into the waters, marshes, and mudflats known today.

Its earliest beginnings can be traced to glacial moraines deposited along the Long Island's shoreline at the end of the last ice age. For thousands of years, wave action chipped away at this glacial debris, depositing it in a new location through a process known as **longshore transport**.

Incrementally, wave action pushed debris along a shoreline in a more or less oblique angle. Over time, sediments from river discharge and shoreline erosion accreted and eroded, forming beaches in some locations and eroding inlets in others.

Jamaica Bay began to take form when Rockaway Spit grew into a peninsula. Fed by longshore transport from both Long Beach and Jones Beach, the spit grew as much as 200 feet a year. Similarly, longshore transport from the Navasink River supplied materials that built Sandy Hook. Jamaica Bay became more sheltered from the Atlantic Ocean, developing an internal environment of tidal flow and sediment distribution. In this environment, salt water marshes built up through sedimentation only to erode away in response to coastal storms and wave action in the bay. Through the centuries, these natural forces constantly reshaped the size and configuration of Jamaica Bay's marshes and wetlands.

### Historic Human Impacts

The pattern of marsh accretion and erosion continued well into the 17th century. During this period, the Canarsie and Rockawanie Indians inhabited the Jamaica Bay area. The natural accretion and erosion of marsh flats did not interfere with their lifestyle, and the bay offered a lush supply of shellfish and other aquatic resources and wildlife.

During the early 17th century, Dutch farmers and traders began to settle the area. They built farms along freshwater creeks that emptied into Jamaica Bay. They fed their livestock marsh hay (vegetation growing along the bay's shore) and helped themselves to the abundant fish, lobster, and bivalves the bay still offered.

In 1668, the English took over the Dutch colony and gave the Jamaica Bay its present-day name. Gradually, these early settlers began to alter the environment to meet human needs. Jetties were built to prevent shoreline erosion. Many of the freshwater creeks were channeled into storm sewers. Portions of the bay were filled in so structures could be built. Other areas were converted into landfills. Jetties and groins were constructed on Long Island to prevent erosion and flooding. When combined, these changes stopped longshore transport of sediments and disrupted the pattern of sedimentary accretion and erosion of the bay's salt marshes.

### The Past 100 Years — Disturbing Trends

Impacts to natural processes escalated during the 20th century. At the turn-of-the-century, developers tried to turn Jamaica Bay into a commercial port by dredging a channel. The port never met the developers' commercial expectations. Worse yet, the dredged channel was a trap for the little sediment coming into the bay. For decades untreated sewage poured unchecked into the bay. After 1909, portions of the bay were filled in to build Barren Island Naval Station (renamed Floyd Bennett Field). By the late 1930s, the bay's northern shores began to be filled for the construction of what is now JFK Airport. During the 1950s, some marsh flats were landscaped and two freshwater ponds were created to form Jamaica Bay Wildlife Refuge. Other changes to the area included the construction of ball fields, a golf course, and other recreational facilities.

Early in the 20th century, Jamaica Bay was showing signs of stress. The water was increasingly polluted. Slowly, the robust oyster fields that produced the renowned, dinner plate-sized "Gowanus oyster" during the Colonial Period were dying. By the late 1920's the bay's deteriorated condition resulted in a ban in shellfishing.

Between 1924 and 1999, the total area of Jamaica Bay's salt marshes shrank by 51%. Increasingly, these losses have occurred within the interior of marsh islands. As tidal pools increase in size, marsh areas become more and more fragmented. Marsh vegetation (largely *Spartina alterniflora*) becomes inundated, withers, and dies. On some islands, up to 78% of the vegetation has disappeared in the past three decades.

### Encouraging Signs

Since the 1970s, there have been incremental efforts to improve Jamaica Bay's health. Sewage treatment plants have been constructed, and treatment procedures are improving. The enforcement of environmental regulations helps deter further pollution. In 1972, federal legislation incorporated much of the bay within the

boundaries of Gateway National Recreation Area. This action strengthened protection of natural resources in the bay and established that management of the bay would be guided by NPS policies regarding both resources and use of the area.

Also during the late 1970s and early 1980s, community stakeholders mobilized and established venues to participate in agency decision making related to Jamaica Bay. Formalized in 1984, the Jamaica Bay Task Force (JBTF) took a lead in providing a regular forum for public exchange with municipal, state, and federal decision makers. Through the years, and right up to the present, JBTF continues to be a key forum for public participation and an instrumental tool for effective and efficient management of Jamaica Bay.

In the spirit to reinvigorate the National Park Service's leadership in management of Jamaica Bay, in 2002 Gateway NRA established the Jamaica Bay Institute (JBI). JBI's mission is "to promote and improve the ecological health of Jamaica Bay through research, education, and informed decision making." The JBI is positioned to act as a collaborative arm of Gateway NRA coordinating current research in the bay; synthesizing the information gained; highlighting the questions that still remain to be answered; and sharing the newly gained information with agencies and organizations.

In the near future, it will be even easier to share information about Jamaica Bay. The Center for International Earth Science Information

Network (CIESIN), in partnership with JBI, is developing a database that will serve as a clearinghouse for research and activities occurring within Jamaica Bay. When completed, the Jamaica Bay Resource and Management Information Network will be a "one-stop information-shopping website" for bay managers and researchers.

In addition to the JBTF and JBI, there has been a variety of valuable, multi-agency stewardship actions in the bay over the last two decades. From advancement in environmental regulatory compliance, to breakthrough research, to environmental citizen watch groups, to instrumental land acquisition and protection, a myriad of local, city, state, and federal entities have acted as critical stewards of Jamaica Bay. The Audubon Society and Trust for Public Land's *Buffer the Bay* report and the issues maps developed by the New York City Department of City Planning are just two examples of this important work (see "Who Is Studying the Bay" and "Who Else Is Active in the Bay" for additional examples).

These stewardship efforts in the bay are important gains, but there is a long way to go. Jamaica Bay's health remains in jeopardy, and considerable work needs to be done. As we gain a better understanding of the processes needed to ensure its health, the chances of success increase. Restoring the bay's health will be a long-term, iterative process. Developing a shared vision for its future will help guide that process.





# How This Report Was Prepared

## Convening Agency Partners

While NPS has management authority for much of the land area of Jamaica Bay, 25 public agencies have jurisdiction or some regulatory responsibility for activities within Jamaica Bay. To better understand the activities of each agency, the NPS invited representatives to three workshops in the fall of 2002 and spring of 2003. City, regional, state, and federal agencies were asked to explain their mission as it relates to Jamaica Bay and to discuss ongoing projects in Jamaica Bay.

Table 1 lists these agencies and identifies each agency's role and/or responsibility in managing resources related to Jamaica Bay. Map 1 depicts the locations where these management activities currently are taking place.

Collectively, the agency workshops served to identify:

- all or most entities having an interest in Jamaica Bay and its ecosystem,

- the missions of the agencies and organizations that are active in the bay and find commonalities of purpose, and
- complementary programs and activities taking place within the bay, as well as potential conflicts among them.

At the workshops, agencies responded to some basic questions regarding Jamaica Bay. These included:

- Why is the bay a special place?
- What are your concerns about the bay?
- Who is studying the bay?
- Who else is active in the bay?
- What should the bay look like in the future?

Convening the agencies also laid down the foundation for an interagency partnership that, as it strengthens though time, will allow the agencies to work more effectively together and leverage resources and funds.

**Table 1. Federal, state, and local agencies having a legal or jurisdictional responsibility for activities in the bay**

Public Agency Management Matrix Gateway National Recreation Area Report on Jamaica Bay	RESOURCE MANAGEMENT AND PROTECTION										VISITOR USE					RESOURCE AND PUBLIC SAFETY				COEXISTING USES				
	Air Quality	Water Quality	Wetlands Mgmt / Restoration	Coastal Zone Management	Land Uses	T&E / sensitive Species	Fish / Wildlife	Research - Natural Resource	Cultural and Historic Preservation	Research - Cultural Resources	Education / Interpretation	Hunting and Fishing	Water Based Recreation	Land Based Recreation	Concessions	Fire Management	Public Safety / Search and Rescue	Law Enforcement	Sanitation / Debris Cleanup	Dredging	Waste Management / Spills	Utilities	Transportation / Access	Military Operations
Army Corps of Engineers (USCOE)																								
Environmental Protection Agency (EPA)																								
Federal Aviation Administration (FAA)																								
Fish and Wildlife Service (USFWS)																								
National Oceanic & Atmospheric Admin (NOAA)																								
National Park Service (NPS)																								
Natural Resources Conservation Service (NRCS)																								
U.S. Coast Guard																								
Department of Environmental Conservation (DEC)																								
Department of State																								
Office of Parks, Recreation and Historic Preservation (OPRHP)																								
Empire State Development Corp																								
NY/NJ Port Authority (NYNJPA)																								
Interstate Environmental Comm																								
NYC Department of City Planning																								
NYC Department of Environmental Protection (DEP)																								
NYC Department Parks & Recreation (DPR)																								
NYC Department of Transportation (DOT)																								
NYC Department of Health (DOH)																								
NYC Department of Sanitation																								
NYC Economic Development Corp.																								
NYC Office of the Mayor																								
Borough of Brooklyn																								
Borough of Queens																								
Town of Hempstead																								
Nassau County																								

*This chart is a representative list rather than an exhaustive one. It is based on input received at public and agency workshops, not all agencies involved in the bay have indicated which activities they are responsible for.*



### **Engaging the Public**

After soliciting feedback from government agencies and partners, the NPS hosted a series of public open houses. These public meetings were informal events where the public could circulate among different information stations to gain and exchange information about Jamaica Bay. The public was asked to respond to the same questions about Jamaica Bay's importance and its future. Attendees were able to give their input in a variety of venues, such as recorded flip chart notes, a "graffiti wall," and on written comment forms.

To reach a broader range of the general public, a newsletter was distributed explaining the planning process and where we were in that process. The newsletter also included a comment form that could be mailed back at no expense to the respondent. A planning website was also available where the public, agencies, and partners could download the newsletter, comment form, and other project updates.

Finally, the original comment period was extended so that as many people as possible had an opportunity to respond. Sufficient time was needed to reflect upon what was heard and ensure important sentiments were not missed.

# What Was Learned

*This report highlights the significance of Jamaica Bay and outlines how to best manage bay resources for the future.*

*“It is my national park!”*



*“The biggest problem is the dwindling of the wetlands.”*

The feedback obtained through public input and working with the agencies and partners provided a wide range of perspectives. The following presents the issues and feedback “heard” from the agencies, partners, and public.

## Why Is Jamaica Bay a Special Place?

The public and agencies involved in Jamaica Bay feel an attachment to the area for a variety of reasons. The responses and discussions from open houses gave a wonderful picture of why people use the bay, how governments and non-profits are involved in the bay, and why all these groups value Jamaica Bay. Interestingly, the response cited most often is that people find the bay to be a sanctuary or haven from the stress of the city. This has become especially important since September 11, 2001.

People also feel an enormous sense of pride about Jamaica Bay. They feel that it is an important part of the community and a resource for the region. It provides a valuable “oasis” for humans in nature, and provides a variety of recreational opportunities and uses. For these reasons, people emphasized that it is very important that we all work together to protect the bay for future generations.

There were some distinct themes that stood out in the comments, which are reflected in the synthesized statements below. From these statements, it is clear people have a passion for the bay, want to see it protected, and are willing to help as partners in caring for the bay. Some of the themes articulated were:

- Jamaica Bay is a sanctuary that allows people to experience solitude, relaxation, and natural landscapes in the midst of one of the most populated urban areas in the country.
- The bay and its salt marshes serve as a refuge for wildlife, provide valuable habitat for many species, and contribute to and impact the environmental health of the larger regional ecosystem.
- Jamaica Bay is a beloved recreational resource that offers the public opportunities to boat, fish, walk, observe wildlife, and experience nature.
- Jamaica Bay is a natural, cultural, and recreational asset for this extremely urbanized

region that provides residents with a sense of pride and community.

- The bay serves as a classroom for both adults and children. It is a place to experience and learn from nature and history.

## What Are Your Concerns about the Bay?

People and groups in and around Jamaica Bay feel a strong connection to the bay and would like to see it protected but from what?

Again, there was some variability in the responses, but some definite themes rose to the surface. The following synthesized statements reflect the “themes” heard from the public, agencies, non-profits, and others who care about Jamaica Bay.

- The marsh islands of Jamaica Bay are shrinking at an alarming rate, impairing critical habitat for migratory birds and other wildlife, damaging valuable cultural resources, and causing economic and social impacts.

This is a concern from a number of perspectives, because wetland loss has many more issues associated with it than just habitat loss. Valuable cultural and historic resources are damaged as well when the wetlands vanish. In addition, the potential to attract visitors may decrease as wetland loss increases, which leads to revenue loss and other associated economic impacts.

- Jamaica Bay is influenced and impacted by rapid development and some adjacent land uses.

Keeping the system’s ecological integrity as intact as possible is both a priority and a challenge as the hardened shoreline and other impacts continue to affect the bay. Moreover, Jamaica Bay is situated within the greater New York area and must coexist with a variety of land uses, many of which are equally important to the health of New York City and the quality of life of its residents.

Unfortunately, land-use decisions and individual actions are often far removed from the impacts of those decisions and actions. As a result, decision makers and area residents do not make the connection between their decisions and the resulting impacts to Jamaica Bay and the ecosystem.

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*“There are three landfills surrounding the bay and impacting environmental quality.”*



*“There is a lack of communication between agencies responsible for the bay and with the public; there is a need to coordinate all the various research projects going on.”*



*“Public access to the bay - where is it appropriate?”*



*“Human impact ranging from toxins in the bay, to waste disposal issues and visitor use/resource conflicts.”*

- Many public agencies each with different mandates, policies, and responsibilities have jurisdiction or accountability for activities in Jamaica Bay.

These differing missions and mandates have in the past, and continue to, make it difficult to reach agreement on how to address issues in Jamaica Bay. There is a consensus that agencies and others working in the bay are not acting cooperatively to look at their impacts on the bay, and that they aren't thinking as a system, but as parts of a system.

There is also consensus that we need to work together as a group focusing on the bay as a whole, rather than working independently on specific issues.

- Many agencies, researchers, nonprofit organizations, and citizen groups are active in Jamaica Bay, but their projects are not effectively coordinated and the information they gather is not always shared.

There is a consensus that we need to make better use of available resources and research. Better coordination would allow us to avoid duplication, and be aware of existing information or resources that could be used to further work in the bay. This would also allow us to work together more effectively when resources are scarce.

- Water and sediment quality in Jamaica Bay is impaired by combined sewer outfalls and treatment plant overflows, adjacent landfills, and residential, commercial, and industrial land-use practices in the watershed.

There is concern that water and sediment in Jamaica Bay is contaminated, which has implications for both humans and animal habitats. Contamination causes health concerns, which makes Jamaica Bay a less attractive place to recreate and visit. To date, the specific level of impairment has not been fully documented. This may be an area requiring future research and study.

- Increased user conflicts are occurring as traditional and historical uses confront new recreational uses and demands on Jamaica Bay.

New technology in recent years, combined with changing demographics of bay users, has

created new demands on bay resources. For example, the increased use of personal watercraft has added to the bay's noise pollution, which can negatively affect the visitor experience of others. In addition, traditional uses may not always continue to be appropriate given current resource conditions. We need to address these use issues in a manner that allows for enjoyment, while not compromising the future of bay resources.

- There continues to be limited public access to the waterfront and to visitor services.

There is a feeling that public access is not what people would like it to be, in fact, the park staff hears this complaint from time to time. There are actually two issues here. Not only is the amount of access limited, but there is also a desire for improved managed access (e.g., more parking).

Transportation is also an issue that limits public access to Jamaica Bay. There is no direct public transportation, and it is hard for people outside the area to get to the park via transit or to park their cars once they get to the refuge.

In addition, security since September 11, 2001, has become an issue. The public, as well as some agencies, do not have the same access to Jamaica Bay. This is a barrier to access that we need to adjust to.

- Inadequate education about and enforcement of rules and regulations is contributing to environmental degradation and creating tension between user groups.

The National Park Service is working to address this issue; however, it remains a challenge. Some specific problems include people using areas that are closed for rehabilitation or habitat protection, and confusion over permissible uses. In addition, there are changing user demographics, and newer cultural uses taking place within the park. All of these complexities and impacts need to be better understood by park staff and users. Increased understanding and clear enforcement will hopefully generate more support for different uses and for rules and regulations.

### Who Is Studying the Bay?

Workshop and open house attendees identified a long list of entities active in the bay. The following presents an initial inventory. However, the list could grow as we identify additional players.

### Who Else Is Active in the Bay?

When asked what other entities were operating in Jamaica Bay, workshop participants were able to list several groups involved in bay-related restoration and management projects. Many of these groups are carrying out research and projects that complement each other. Examples of these activities include:

**Table 2. Recent Projects Occurring in and Around Jamaica Bay (5 years)**

<b>Project Title</b>	<b>Institution</b>
1. Sedimentation History and Ocean Mixing in Jamaica Bay	Columbia U.
2. Effects of Estrogen-Mimicking Compounds in Treated Effluent on Winter Flounder	Gateway NRA
3. Intertidal-Zone Macro-Invertebrates: Species Richness and Densities	Gateway NRA
4. Toxicity of Heavy Metals in Saltmarsh Sediments (a new multi-generational amphipod bioassay)	Gateway NRA
5. Archeological Surveys	Gateway NRA
6. Sediment Budget and Trends	TBA
7. Bird Impacts to Saltmarsh Vegetation	Gateway NRA
8. Surface Elevation Tables (monitoring of saltmarsh sediment accretion and subsidence)	Gateway NRA
9. Effects of Straw and Sea Lettuce Mats on Vitality of Saltmarsh Vegetation	Gateway NRA
10. GIS Study of Saltmarsh Changes Parkwide	Gateway NRA
11. Chemical Contaminant Analysis (organics and heavy metals)	Dowling Col.
12. Pore Water Chemistry Preliminary Study	Dowling Col.
13. Peat Core Dating Preliminary Study	Columbia U.
14. Experimental Marsh Restoration by Thin-Layer Sediment Spray	Gateway NRA
15. Epibenthic Recruitment Field Sampling and Analysis Plan	NYCDEP
16. Sediment Sampling for Use and Standards Attainment Project (total organics, sediment size, percent solids)	NYCDEP
17. Soil Survey	NRCS
18. Killifish Genetics and Gene Expression	USEPA
19. Black-Crowned Night Heron population ecology in Gateway Staten Is. Col.	Staten Is. Col.
20. Diamond-back Terrapin distribution and predation rates	Hofstra U.
21. Striped Bass habitat use	NYSDEC
22. Endocrine Disruption in Winter Flounder	Stony Brook
23. Harbor Herons Project	NYC Audubon
24. Raccoon Population Size and Movements	Hofstra U.
25. Metal Contamination in Marine Invertebrates	Staten Is. Col.
26. West Nile Virus Adult Mosquito Surveillance	USGS
27. Bergen Beach Biological and Physical Characteristics	NYSDEC
28. MAPS (bird-banding and observation station at Fort Tilden)	Staten Is. Col.
29. Coastal 2000 (assess quality of coastal environment (water, sediment, and fishes)	Stony Brook
30. JABBERT SITES	
Reconnaissance of the Physical and Biogeochemical Characteristics of Jamaica Bay	
Biological and Physical Characteristics of Norton Basin	
Vegetation Inventory	
Water Quality Analysis	
Soil Chemical Analysis	
Bird Surveys	
Finfish Surveys	
Benthic Macro Invertebrates of Intertidal Zones of Jamaica Bay	
Horseshoe Crab Habitat Suitability	
Inventory of Mammals, Reptiles and Amphibians	
Butterfly and Diurnal Moth Survey	

### **Habitat Restoration Projects /Research**

- **Friends of Marine Park** — *Marsh/Beach Habitat Restoration: Geritson Creek (NFWF 2002 Grant)*
- **NY/NJ Baykeeper** — *Critical Habitat Restoration*. The group is:
  - constructing oyster reefs and an oyster gardening project;
  - engaging in successful advocacy and litigation on issues ranging from combined sewer overflows to contaminated site remediation
- **Eastern Queens Alliance: Idlewild Park** — *Wetlands Restoration*. The Eastern Queens Alliance has been working with elected officials, the Parks Department, and the Army Corps of Engineers to restore the lost wetlands. The civic group is trying to tie restoration projects in Jamaica Bay to work in Idlewild Park, which feeds into the bay.
- **Corporate Wetland Restoration Project (Coastal America)** — *Aquatic Habitat Restoration*. The National Corporate Wetlands Restoration Partnership is a voluntary public-private partnership to restore degraded

freshwater and saltwater wetlands and other aquatic habitats in the U.S. The Aquarium for Wildlife Conservation (New York) is a Coastal Ecosystem Learning Center in the mid-Atlantic region. Restoration projects are being planned in conjunction with these institutions.

### **Research on Jamaica Bay Wildlife / Biodiversity**

- **Federation of New York State Bird Clubs** — *Waterfowl Count and Breeding Bird Survey*.
- **Natural Resources Defense Council** — *Harbor Light Project*. The group is working to preserve regional biodiversity and enhance public awareness of biological hotspots in urban environments, such as Jamaica Bay.
- **Brooklyn Bird Club** — *Birding Field Trips*. The group leads many seasonal field trips in Jamaica Bay, holds evening programs, and publishes a quarterly newsletter.
- **NYC Audubon** — *Natural Area Initiative, Buffer the Bay, and Buffer the Bay Revisited Initiatives*. The group works on these initiatives and reports with the Trust for Public Land, bird watching guides and habitat atlases, and bird counts and breeding bird survey.



### **Research on Wetlands / Salt Marshes / Aquatics**

- **Goddard Institute Space Studies** — *Millennial Climate and Land Use History from Jamaica Bay Marshes, New York.*
- **Ecological & Oceanographic Consultants** — *Jamaica Bay Bottom Mapping and Remote Benthic Habitat Characterization Little Bay, Norton Basin, Grass Haddock Channel and Raunt Channel, Jamaica Bay, New York.*
- **Hudson River Research at Columbia University** — *Jamaica Bay JamBay Project, Integrated Reconnaissance of the Physical and Biogeochemical.*
- **Jamaica Bay Eco Watchers** — *Ecological Advocacy and Compliance.* The Eco Watchers work to ensure a safe and healthy environment for generations to come by:
  - researching and identifying issues affecting water quality;
  - researching and identifying issues affecting the salt water marshes in the bay;
  - ensuring compliance of environmental laws;
  - investigating and reporting hazardous or potentially hazardous conditions to proper authorities;
  - enlisting concerned citizens, raising public awareness, and conducting educational outreach; and
  - coordinating efforts of various agencies.

### **Environmental Education / Youth Outreach / Advocacy**

- **United Community Centers** — *Youth Groups.* The group takes youth groups camping and sailing in Jamaica Bay.
- **Council on the Environment of New York City** — *Habitat Exhibits.* The group helps create school “habitat” exhibits.
- **NY Aquarium** — *Local Beach Ecology Program.* The group hosts a program on local beach ecology, which does some specimen collection on the beaches in the harbor.
- **Jamaica Bay Guardian: DEC Stewardship, American Littoral Society (ALS)** — *Wetlands Advocacy and Awareness.* An American Littoral Society Program funded by a Jamaica Bay wetlands violation settlement imposed by the New York State Department of Environmental Conservation. ALS seeks to encourage a better scientific and public

understanding of the marine environment and provide a unified voice advocating protection of the delicate fabric of life along the shore.

- **Metropolitan Waterfront Alliance** — *Aquatic Habitats Advocacy.* The alliance is a growing network of organizations and concerned individuals dedicated to helping this region reclaim and reconnect one of the greatest natural resource – the harbor, rivers, and estuaries of the New York and New Jersey waterfront. The alliance works through education, grassroots organizing, and media advocacy to include the public’s voice and values in the decision making that will determine the future of the region’s waterfront and waterways. They have conducted research and published articles on Jamaica Bay.
- **Marine Educators Association** — *Ecological Publications and Conferences.* The association runs an annual conference, periodic meetings, and field and boat trips including Jamaica Bay. The association produces a monthly news page, Newlinks, (a periodic list serve), and a quarterly journal, *Ripples*. Members also assist teachers interested in developing laboratory, lecture, and field work.
- **Friends of Gateway** — *Urban Outdoors Program.* Friends of Gateway (FoG) is dedicated to protecting, improving, and enhancing public awareness of, and access to, the New York metropolitan area’s unique national recreation area. FoG works to ensure the preservation of Gateway NRA’s significant natural and historic areas, while encouraging the addition of appropriate recreational, educational, and cultural programs and facilities to serve an urban population that is woefully under-served in terms of open space opportunities..

### **Aviation**

- **Federal Aviation Administration (FAA) Technical Center and Process Technologies Incorporation: John F. Kennedy International Airport** — *Deicing Procedures.* The escalating economical and environmental costs associated with chemicals used to de-ice aircraft has come under intense scrutiny. In January 1993, the FAA Technical Center and Process Technologies Inc. of Buffalo, NY, entered into a cooperative research and development agreement to investigate an innovative technology for aircraft deicing using infrared energy. The demonstration area was installed at Greater Buffalo International Airport, and the tests were conducted with a FAA owned Convair 580. This demonstration established the feasibility of installing a remote deicing facility that uses infrared energy to remove ice from the surface of an aircraft.

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*“Well preserved for the myriads of wildlife, the migratory and the local fauna, the vegetation, the flora in all their varieties that live in the Jamaica Bay – continue to flourish and prosper and survive.”*



*“[I would like to see] an environmental functioning unit supporting wildlife habitat, reducing storm energy, creating saturated oxygen balances, . . . and passive and active human recreation.”*



*“To create the habitat that would encourage my families and neighborhood friends and others visit the Bay, take part in its fishing, recreation opportunities and to add to the environment, life, and vigor for others.”*

## What Should the Bay Look Like in the Future?

During the public open houses and agency workshops people were asked to describe what Jamaica Bay should “look” like in 20 years. They were asked to think about (a) the types of activities that would be appropriate, (b) the condition of natural and cultural resources, and (c) the types of visitor experience people using the bay should expect. Again, the responses were varied but tended to fall into four identifiable categories:

- natural and cultural resources;
- use and enjoyment;
- urban environment; and
- education, understanding, and appreciation

All input regarding the future of the bay was summarized and organized in terms of these four categories. The results were displayed in draft form at the public open house and were presented at agency workshops. Comments, ideas, and suggestions were requested from anyone who wanted to contribute. With continued dialog, these desired conditions may evolve into a shared vision of what Jamaica Bay should be, what opportunities it could offer, and how it should be managed in the future.

The following section of the report presents this initial effort to define a “desired future” for Jamaica Bay.

### Natural and Cultural Resources

- Jamaica Bay supports a “diverse natural and cultural resource legacy” through the identification, protection, restoration, and management of valuable open space.

Protecting the diversity of habitat within Jamaica Bay is a critically important goal that was heard again and again from citizens and agencies. The loss of wetlands is of grave concern to everyone. It is clear that habitat loss has implications beyond just aesthetics – it leads to loss of species diversity and contributes to an unhealthy ecosystem. Most respondents who provided input insisted that protecting habitat in Jamaica Bay is one of the most important goals for the future.

- Jamaica Bay is managed to maintain and sustain internationally significant resources, including migratory and resident bird populations, as well as species that are important locally and regionally.

Jamaica Bay claims a very important international distinction – it is a critical stopover on the Eastern Flyway migration route. In addition, the refuge is home to a number of locally, regionally, and nationally significant species.

There is much attention and discussion given to bird populations, because they are of interest to a number of groups — for example the bird hazard task force exists to allow NPS, FAA, NY Port Authority, and other agencies to discuss issues of aircraft safety at JFK International Airport. However, there are also a number of important aquatic and terrestrial species in the refuge, including the diamond-back terrapin.

- Improved water quality in Jamaica Bay enhances ecological functioning of the bay.

Water quality in Jamaica Bay is another issue of concern for many citizens and agencies within the bay watershed. Poor water quality impacts wildlife, often impairing and destroying habitat and species. It also has implications for humans. People in the bay area would like to see sport fishing, boating, swimming, and other recreational uses. Improved water quality is another critical component in improving and sustaining the health of the Jamaica Bay ecosystem.

- Important cultural resources, such as submerged and archeological assets, in Jamaica Bay are identified and protected.

While there is much discussion of the natural resources within Jamaica Bay, it is important to remember that the bay is home to many important cultural and historic resources, such as Floyd Bennett Field and Jacob Riis Park. We need to make sure that these resources are identified and protected so that future generations may understand the bay’s history and culture.

### Use and Enjoyment

- More opportunities exist for the public to safely experience, enjoy, and understand Jamaica Bay’s natural, cultural, and recreational resources without adversely impacting the ecosystem.

It is important for bay users not only to have access to recreational opportunities, but to also understand how those uses and activities can impact the bay. Our goal is to provide the public with opportunities for uses where appropriate, where resources will not be irrevocably damaged, and where it is safe to do so. We also need to balance competing uses so that all interests have an opportunity to enjoy the bay. Jamaica Bay is a huge recreational asset for the region. That is something residents and agencies share a desire to protect and enhance.

*“[The area is important] because of its association with so many landmarks in aviation history, including the first transatlantic crossing by air by the NC-4, May 1919.”*



*“[I would like to see] more access to the bay for people not associated with groups. It should be promoted to families in NYSC who could benefit from viewing and experiencing all the bay has to offer close to home. It's a shame that I didn't know about the bay until I was an adult.”*



*“The actions taken here and the programs initiated also have a great potential to teach and inform, as well as illuminate and enlarge the perspectives and horizons of fellow citizens and generations to follow.”*



*“To make the Jamaica Bay more attractive (not less), and be a visiting place for schools, for girl and boy scout group and for nature lovers.”*

- Visitors have improved access to visitor services and additional opportunities to access the shore.

There is a distinction between improved access to visitor services and greater access. Comments suggest that people would like to see better or improved access (e.g., more parking, trails, signs, and the like) to visitor services, to the shore, and to visitor facilities.

- Management of resources within Jamaica Bay is flexible to allow for adaptation to the public's needs and desires that may arise, without degrading the natural resources or the tranquil experience of the bay.

Issues facing Jamaica Bay include the appropriateness of activities that have taken place in the bay historically and the appropriateness of new activities. It is important to remember that our mission is to allow for recreation while protecting resources. We must constantly re-examine allowable uses and activities to determine where they may be appropriate. Management policies should allow for this re-examination and provide the flexibility to “change course” if we determine that park resources are being compromised.

#### **Urban Environment**

- Jamaica Bay ecosystem's vitality and aesthetics are recognized as an integral part of the planning for regional growth and development in Jamaica Bay.

Future growth and re-development in the bay is inevitable, so it is important that the growth is managed, which implies flexibility and input by all stakeholders. We need to ensure that new development and infill in the watershed is designed and engineered to add to the quality of life and create benefits for humans and the ecosystem, rather than adversely impacting resources and aesthetics.

- Waste management system improvements contribute positively to the bay's economic and environmental health.

Waste contamination in Jamaica Bay is a concern that we heard from both the public and agency and park staff. The consensus among these groups is that managing waste systems to dispose of wastewater in a sustainable manner, to recycle materials, and to ensure that the bay is free from floatables is a critical part of improving and maintaining ecosystem health.

- Jamaica Bay is managed for and supports sustainable, efficient transportation that benefits the local economy, the ecosystem, and the environment.

There are currently limited public transportation options for visiting the bay, which reinforces the point that Jamaica Bay is part of a larger regional system. We need to recognize that in working to provide better transportation options for getting to the refuge, we will be attracting more visitors, and we must be ready to address the accompanying increases.

By managing the bay and its transportation links proactively, we can better address park access, carrying capacity, and other issues related to increased visitor use.

- The adverse impacts of noise, air, and light pollution within the Jamaica Bay ecosystem are reduced.

While there are many factors that we cannot control – including the causes of different types of pollution in the ecosystem – we recognize the need to address the impacts of pollution within Jamaica Bay. The adverse impacts harm habitat and make the bay a less desirable place to recreate and visit.

Mitigating the undesirable consequences of pollution is another important part of creating a healthy, functioning ecosystem.



### ***Education, Understanding, and Appreciation***

- Local communities and the public are an integral part of the ongoing dialogue about Jamaica Bay, its resources, and its future.

It is important that people using the bay – both those living in and around the bay and visitors – are a part of the ongoing dialogue about how to manage Jamaica Bay. It is essential for us as managers and stewards to know how people feel before problems arise, so that we are better able to craft solutions when issues do come up. It is central to us that we hear what people want, that we have an accurate picture of how the public feels about issues, and that they have a hand in crafting management decisions and policies for the bay's future.

- Jamaica Bay visitors are active stewards of ecosystem resources as volunteers, educators, students, land managers, and interested citizens.

Not only is it important that people share their views and engage in dialogue about the bay, but it is also critical that they become actively involved in its protection. We need help. We need volunteers to fill in gaps where resources are short. We need input and guidance from those who are intimately familiar with the bay and its resources. We need people to help us educate others and spread the word about this wonderful resource and how it can be protected. It is our hope that this report will show visitors and other interested parties how valuable they can be as partners in protecting the bay.

- Existing commercial, industrial, and residential landowners and users see an expanded mission for themselves as stewards of Jamaica Bay.

Involvement by landowners in and around the bay – so that they recognize their contributions to and impacts upon the bay ecosystem – is also equally important. While each of these interests may have a different philosophy of how they relate to the bay, it is essential for them to realize that they all have a role to play in helping protect bay resources.

Development and management decisions related to industry, commercial, and residential use in the watershed should take into consideration the affect of those actions on the bay.

- Jamaica Bay is a model for sustainable development, rehabilitation of degraded resources, and urban ecosystem management within a major metropolitan area.

There are so many partners involved in managing, protecting, and preserving Jamaica Bay that it is a great model for what can be accomplished with a shared goal and collaboration. Conditions within the bay have been improving. With more cooperation in sharing resources and information, all of the agencies and stakeholders with an interest in Jamaica Bay can contribute to rehabilitation of these important resources, and the bay will evolve as a model for partnerships in ecosystem management.



# Achieving Collective Goals — Laying the Foundations of a Common Vision for Jamaica Bay

*The public engagement process not only identified desired future conditions for Jamaica Bay, but also a framework for future collaboration.*

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## Agency Partners Guiding Principle

*Our collective actions ensure that Jamaica Bay is recognized and managed as an integral part of the regional ecosystem.*

This report demonstrates why Jamaica Bay is important to the people of New York in many different ways. This final section explores how agencies and stakeholders can best care for this valuable resource by working through differences and developing a framework for working together in addressing challenges and celebrating successes.

This framework will strengthen existing relationships, as well as provide opportunities to build more partnerships. The next step is to build upon the framework. This has to be done on two parallel time schedules. First, we must think about what short-term incremental progress we can make in protecting the resources of Jamaica Bay. Second, we must come up with some long-term strategies for working together to achieve our goals.

Toward that end, the agency partners sat down to discuss short-term steps needed to address our relationships and our vision for the future. During this exercise we developed a guiding principle that summarizes how the group feels entities working in Jamaica Bay should interact. In addition, we came up with some initial ideas on how to achieve both short and long-term goals.

### Moving Forward: Initial Steps

#### ■ Start sharing data.

Many researchers are currently working in the bay. Everyone should have access to their results. One possible tool to facilitate this effect is the web-based database being developed by Center for International Earth Science Information Network. The Jamaica Bay Research and Information Network will allow people to see what's going on, use that information, and share resources to avoid duplication.

#### ■ Highlight even small victories.

There are numerous projects – small and large – going on in Jamaica Bay. These range from creating bird nesting boxes, to habitat restoration, to beach cleanups, and more. These accomplishments should be publicized to let people know that the bay is important and that every action to care for the bay is valuable. Most importantly, these victories should be celebrated to inspire others, encourage appropriate use of the bay, and expand resource protection efforts.

#### ■ Elevate visibility.

One theme that came up again and again during preparation of this report is that Jamaica Bay suffers from a lack of recognition. People don't realize that the bay is part of a larger system, that they impact the bay, and that the health of the bay, in turn, influences the region. More education is needed to reach more people, groups, and agencies.

Attention should be drawn to not only the negative things about the bay (e.g., wetland loss), but also the positive things going on in the bay – like groups working together to create a common vision and goals for the future

#### ■ Coordinate on things such as best management practices.

While the agencies working in and around Jamaica Bay may not all have the same mission, there are some areas where they can collaborate better. One area is agreeing on standards such as best management practices for addressing bay issues. Examples include developing ways to address floatable waste, dealing with runoff, and other management issues. Through better coordination, all of the agencies with an interest in the bay can start speaking the same language about bay management and be better able to measure our progress.

### Next Steps: The Larger Picture

Over a period of about 15 months, a good number of people took the time to meet and share their thoughts about the future of Jamaica Bay. The results of this public process are recorded and summarized in this report. Overall, the future that they painted for this important natural and social asset is full of potential. However, all the agencies, partners, and public with an interest in or responsibility for Jamaica Bay must combine their talents and resources if the conditions aspired to in this report are to be achieved.

The National Park Service clearly has a major role in this effort. Most of the bay – including its waters, islands, and submerged lands – lies within the boundaries of Gateway National Recreation Area. The park, as a federal steward, is by Congressional mandate responsible for protecting and enhancing the bay's natural resources and for providing opportunities for public use and enjoyment of the area. The park

is also charged to work with other agencies and jurisdictions to accomplish these objectives within the framework of their own respective missions.

In order to continue the process started with this report and, more importantly, to move toward realizing the future envisioned for Jamaica Bay, the National Park Service has agreed to the following course of action:

1. To distribute copies of this report to the public at large as well as to agencies, organizations, and stakeholders with an interest in the future of Jamaica Bay.
2. To seek concurrence with the overall findings of this report with specific emphasis on desired future conditions and a process based on collaboration, sharing of scientific information, and public dialog about the value and use of the bay.
3. To actively pursue multi-agency collaboration on projects that advance resource protection and appropriate use in Jamaica Bay.
4. To pursue scientific research that would help illuminate areas of potential conflict in managing the bay or that would help in evaluating alternative approaches to specific issues.

It is the National Park Service's hope that all fellow stewards embrace the desired future conditions for Jamaica Bay described in this report and that they adopt the associated goals and processes.

More specifically, the NPS:

- Encourages our agency partners to coordinate their projects and initiatives to help us achieve those conditions and goals that relate to their agency.
- Asks that researchers and nonprofit groups to continue to pursue a scientific basis for management of the bay and that they actively participate in its restoration.
- Invites elected officials to help us improve the quality of life of all New Yorkers by preserving this national treasure, supporting appropriate use of its resources, and using informed decisions to manage its watershed.
- Urges the residents and users of Jamaica Bay to continue as advocates for the bay and to use their knowledge and passion to help achieve a rich and vibrant future for Jamaica Bay.

Gateway NRA is committed to continuing the dialogue with stakeholders to further refine the future vision of Jamaica Bay. Through the Jamaica Bay Institute, Gateway will engage in routine communication with fellow public agencies. Through public venues such as those offered by the Jamaica Bay Task Force, Gateway will ensure community participation in the decision-making process. By working together, Jamaica Bay can be made whole and sustainable once again.



# Bibliography & List of Preparers



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## List of Preparers

### *National Park Service*

- Billy G. Garrett – Acting General Superintendent, Gateway NRA
- K. Christopher Soller – Acting Superintendent, Jamaica Bay Unit, Gateway NRA
- Dave Avrin – Asst. Superintendent, Jamaica Bay Unit
- John Hnedak – Director, Resource Management, Gateway NRA
- Kim Tripp – Research Director
- Kathleen Williams – Education Coordinator
- Dave Taft – District Manager, Wildlife Refuge District
- Kathy Mellander – GIS Specialist, Gateway NRA
- Jeff Reinbold – Project Manager, Denver Service Center
- Linda Dahl – Gateway Planning Branch Chief, Denver Service Center
- Dawn Godwin – Planner, Rivers, Trails & Conservation Assistance Program
- Leslie Peterson – Program Analyst, Denver Service Center
- Joan Huff – IT Specialist, Denver Service Center

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- New York State Department of State
- New York New Jersey Port Authority
- New York City Department of Environmental Protection
- New York City Department of Parks and Recreation
- Queens Borough President's Office
- Town of Hempstead



**Gateway National Recreation Area**  
**Jamaica Bay Unit**  
Floyd Bennett Field, Building # 69  
Brooklyn, New York 11234