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One Park and the Chesapeake Bay: The Colonial Experience

When I came to Colonial National Historical Park in late 1988 as its first full-time natural resource management specialist, I knew I was at one of the premier historical parks in the nation: the site of the first permanent English settlement at Jamestown Island, and the last major battle of the Revolutionary War, at Yorktown. I asked myself what my role as a natural resource specialist was at Colonial. I soon learned that the park:

- Had significant natural resources, including extensive wetlands, and rare, threatened, and endangered plants and animals.
- Did not have a good understanding of the natural resources and the associated issues, problems, and needs.
- Needed to integrate natural and cultural resource management planning and research.
- Needed to understand that it was part of a larger environment, a larger ecosystem and a larger watershed going beyond the park boundaries, called the Chesapeake Bay.

Park management had a long history of commitment to regional planning—with federal, state, local and non-governmental organizations—to ensure the successful protection of its cultural resources. Now the park saw the need to make the same commit-

ment to meet its obligations as good land stewards of its natural resources and the Chesapeake Bay. Therefore, the park implemented a natural resource program with a network of partners, including government agencies, non-governmental organizations, academia, neighbors, and the general public. This network is the critical ingredient for the success of the natural resource program at Colonial.

The keys to understanding the park's program, and the Chesapeake Bay Program as a whole, are the concepts of stewardship, ecosystem, watershed management, sustainability, and partnership. The park program is a vision, a commitment to these concepts.

The park and Chesapeake Bay programs are an approach to planning and management with the goal of economic vitality combined with environmental protection, enhance-



Figure 20. Archaeological site of New Town on Jamestown Island, Colonial National Historical Park. Photo courtesy National Park Service.

ment and restoration. The Bay Program is a regional watershed approach that emphasizes good science as well as a heightened awareness of what we do and how it affects the larger natural and cultural environment—and, ultimately, the quality of life. It involves active, interdependent collaborating by all levels of government and the public.

Before discussing Colonial's resource management program within the context of the Bay Program, I would like to digress a little and look at the issues of design, sustainability, ecosystem management, partnerships, and good stewardship.

William McDonough, dean of the School of Architecture at the University of Virginia, delivered the cen-

tennial sermon at the Cathedral of St. John the Divine in New York City on February 7, 1993. In his remarks, titled "Design, Ecology, Ethics and the Making of Things," he said that "I am going to speak about the concept of design itself as the first signal of human intention. I would like to reconsider both our design and our intentions."

If we understand that design leads to the manifestation of human intention and if what we make with our hands is to be sacred and honor the earth that gives us life, then the things we make must not only rise from the ground but return to it, soil to soil, water to water, so everything that is received from the earth can be freely given back without causing harm to any living system. This is ecology. This is good design....

Our culture has adopted a design stratagem that essentially says that if brute force or massive amounts of energy don't work, you're not using enough of it.... [D]esigners are now designing for the machine and not for people.... [W]e need to work with living machines, not machines for living in. The focus should be on people's needs, and we need clean water, safe materials, and durability....

Not only does nature operate on 'current income,' it does not mine or extract energy forms the past, it does not use its capital reserves, and it does not borrow from the future. It is an extraordinarily complex and efficient system for creating and cycling nutrients, so economical that modern methods of manufacturing pale in comparison to the elegance of natural systems of production....

Finally, the characteristic that sustains this complex and efficient system of metabolism and creation is biodiversity. What prevents living systems from running down and veering into chaos is a miraculously intricate and symbiotic relationship between millions of organisms, no two of which are alike....

Our present systems of design have created a world that grows far beyond the capacity of the environment to sustain life into the future. The industrial idiom of design, failing to honor the principles of nature, can only violate them, producing waste and harm.... If we destroy more forest, burn more garbage, drift-net more fish, burn more coal, bleach more paper, destroy more topsoil, poison more insects, build over more habitats, dam more rivers, produce more toxics and radioactive waste, we are creating a vast industrial machine, not for living in, but for dying in....

We have to recognize that every event and manifestation of nature is 'design,' that to live within the laws of nature means to express our human intention

as an interdependent species, aware and grateful that we are at the mercy of sacred forces larger than ourselves, and that we obey these laws in order to honor the sacred in each other and in all things. We must come to peace with and accept our place in the natural world.

In the National Park Service (NPS) report titled "Ecosystem Management in the National Park," dated September 1994, it is stated:

Widespread land development, increasing human population, global demand for natural resources, and changing dynamics of communities and economies place enormous stress on natural and cultural resources.... NPS units and programs have an impact on the way of life in communities.... The NPS must adapt its management practices to confront these challenges to resource stewardship. An ecosystem approach to management will require actions to be targeted to root causes of problems whether they exist inside or outside park boundaries. The NPS stewardship mandate cannot be met through introspective actions alone. We should increasingly work in cooperation with partners to help manage resources of larger areas.

Ecosystem management is an awareness [that] living things exist in complex, interconnected systems within a broad landscape.... Ecosystem approaches are driven by collaboratively developed and evolving visions of desired conditions that integrate environmental, economic, social, and, cultural factors affecting a management unit defined primarily by ecological—not political—boundaries. It is a flexible and collaborative approach that encourages innovation and replaces single-issue management. An ecosystem approach recognizes that change is an integral component of ecosystems.

Natural processes and cultural themes transcend park boundaries and do not conform to political borders.... Human influences also transcend park boundaries, including air and water pollution and habitat and cultural landscape fragmentation. Communication improves coordination and reduces conflict among stakeholders. Administrative savings can occur with agency coordination of common activities such as inventory, monitoring, and sharing of scientific data and methods. Cooperation will help to ensure that agencies are not working at cross-purposes. Multiple long-term problems can be addressed simultaneously through ecosystem management, rather than piecemeal approaches to problems.

So, what is Colonial doing to integrate these principles of ecosystem, watershed, sustainability, and partnerships?

First, a little background. Colonial National Historical Park lies within the boundaries of the counties of York, James City, Gloucester, and Surry, and the cities of Virginia Beach and Williamsburg. The park is located in the coastal plain of Tidewater Virginia with all of the parklands having a direct hydrological link to the Chesapeake Bay. Over 30 of the park's 105 miles of boundary extends along either the York or James rivers, two of the largest rivers on the western shore of the Chesapeake Bay. In addition, over 50 miles of perennial and intermittent streams flow through the park and feed directly into these two rivers. Over 25% of the park is classified as wet-



Figure 21. King's Creek, Colonial National Historical Park. Photo courtesy Charles D. Raffkind.

THE CHESAPEAKE BAY PROGRAM: SCIENCE, POLITICS, AND POLICY

Table 1. Partnerships in natural resource management at Colonial National Historical Park

Partners	Representative Activities
<ul style="list-style-type: none"> • College of William and Mary: Departments of Biology and Geology, Center for Archaeological Research, Center for Conservation Biology • Virginia Institute of Marine Science: Department of Natural Resource, Center for Coastal Management and Policy and Departments of Physical and Environmental Science • Colonial Soil and Water Conservation District • Colonial Williamsburg Foundation • Friends of the NPS, Green Springs, Inc. • Hampton Roads Planning Commission District, Virginia • James City County, VA • North Carolina State University, College of Forest Resources • U.S. Army Corp of Engineers • U.S. Coast Guard • U.S. Department of Agriculture, Natural Resource Conservation Service and US Forest Service • U.S. Department of the Interior, Geological Survey and Fish and Wildlife Service • U.S. EPA Chesapeake Bay Program and EPA Region III • Virginia Extension Service • Virginia Department of Conservation and Recreation, Division of Soil and Water; and Division of Natural Heritage • Virginia Department of Environmental Quality • Virginia Department of Geology • York County, VA 	<ul style="list-style-type: none"> • Benthos studies • Endangered species inventory and planning • Environmental reconstruction of Jamestown Island • Flora and fauna inventory • Geographic Information System data sharing • Ground and surface water planning and investigations • Hazardous materials investigations • Neotropical migratory bird survey • Shoreline conservation planning • Wetlands investigations, inventory, and management • Agricultural planning and permitting • Erosion and sedimentation control • Open fields planning • Oil and sewer spill response and planning • Regional planning for water quality and quantity • Adjacent land-use planning • GIS data-sharing • Cartographic design • GIS data development: cultural, natural, infrastructure • Vegetation (forest, fields, wetlands) inventory • Wildfire planning and GIS applications • Coastal area planning for oil and chemical spills • Forest pest management • Fisheries inventory • Geohydrological framework investigation • Springs and seeps studies • Surface water quality inventory • Chesapeake Bay Program-related activities • Integrated pest management • Revegetation techniques • Trail management

lands, both tidal and non-tidal, forested and non-forested. Mixed pine and hardwood forests cover over 60% of the park; fields and lawns, about 12%. Colonial has the second highest number of state- and federally-listed rare and threatened flora and fauna species of any NPS site in Virginia (after Shenandoah National Park). There are an additional 25 such species on adjacent private and public lands. So far, 975 species of plants, 40 of mammals, 244 of birds, 33 of reptiles, 32 of amphibians, and 79 of fish have been identified as occurring within the park.

In developing its natural resource management program over the past nine years, Colonial has nurtured many successful cooperative partnerships (Table 1).

The Chesapeake Bay Program is not just another layer of rules, regulations, and laws, but a great opportunity, a vision, a model of good land stewardship and sustainability. It provides innovative ideas, input, and

support for integrating good management into the larger context of the Chesapeake Bay ecosystem. It provides exciting opportunities to work with a variety of professional, dedicated agencies and organizations, and with politicians, businesses, and citizens in doing creative projects to understand, protect, and enhance the multi-state Chesapeake Bay watershed.

Partnerships are the backbone of NPS management at Colonial and the cooperation and dedication of all involved have led to these and other successful efforts in integrated ecosystem management. The challenge for managers is how to be stewards of one's park in the context of the larger watershed and ecosystem—how to work beyond park boundaries with neighbors, partners, and visitors, not just to meet goals and objectives, but to realize the *vision* to be good stewards of the land and to ensure a sustainable future.

Ed. note: the extended quotation from William McDonough is used with the author's permission.

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