

At Your Service

Rising tide

Jeffrey Cross focuses resources on marine and coastal park issues

By Jeff Selleck and Luke Carrington

THE NATIONAL PARK SYSTEM

conserves 5,100 miles (8,206 km) of coast and 3.1 million acres (1.3 million ha) of submerged lands that include beaches, coral reefs, estuaries, barrier islands, glaciers, historic forts, and shipwrecks across 26 states and territories. Yet most ocean and coastal parks lack basic habitat maps, resource inventories, and monitoring information needed to assess the condition of submerged resources. This knowledge deficit affects the ability of the National Park Service to determine the degree of risk or threat of a wide variety of environmental issues to park resources and whether change in resource condition is natural or human-caused. Recognizing that the condition of submerged resources in ocean and Great Lakes parks is deteriorating, the National Park Service published the *Ocean Park Stewardship 2007–2008 Action Plan*¹ in 2006 as a response to the 2004 U.S. *Ocean Action Plan* that called on federal agencies to increase their emphasis on ocean and coastal resources.

Thus, in 2007 the Natural Resource Program Center, Water Resources Division, established the Ocean and Coastal Resources Branch to identify and serve the needs of 74 national parks with ocean and Great Lakes resource management issues. Jeffrey Cross, the chief of this new branch, has been working diligently to develop an implementation plan to fund the branch and prioritize the work. The branch

“Ocean and coastal parks are diverse, amazing places, with amazing resources. Getting involved in establishing the Ocean and Coastal Resources Branch is a way for me to make a difference, to start developing a national-level program that can serve the interests of the ocean and coastal parks. We can raise the awareness of these parks and make progress on their issues. We’re working across natural and cultural resource management on issues as diverse as coastal processes, coastal development, fisheries, and climate change. There is a real opportunity to work with interdisciplinary teams on significant issues.”

—Jeffrey Cross

currently operates with four staff: Cross as branch chief; Eva DiDonato, marine pollution ecologist; and Jeremy Cantor, student GIS technician, all stationed in Fort Collins, Colorado; and Cliff McCreedy, marine management specialist, in Washington, D.C. The implementation plan calls for the addition of one or two central office staff (in Fort Collins and Washington), and three or four region-based staff (i.e., in regions with ocean and Great Lakes parks to be phased in beginning in fiscal year 2010). Their job will be to coordinate or provide direct technical assistance for island parks like Channel Islands and Virgin Islands, coastal parks like Acadia and Kenai Fjords, and parks on the Great Lakes, such as Apostle Islands.

Following a superintendent’s steering group meeting in 2008, Cross obtained a sample of the types of needed expertise:

physical oceanography (to understand sediment and pollution transport), fisheries biology (to prevent overfishing), invasive marine species (to determine threats to native species and implement control actions), coastal processes (to understand the affects of rising sea level and increasing storm intensity), coastal engineering (to manage shoreline structures), marine ecology (to assess the efficacy of marine reserves), restoration ecology (to restore damaged habitats), and remote sensing (to map submerged habitats and track changing ocean conditions). In the future, he hopes to have the resources to deploy technical specialists to geographic clusters of parks with related coastal and marine resources and management issues, similar to the manner in which the Water Resources Division deployed and manages its field staff of aquatic resource professionals. The benefit to this approach is

¹*Ocean Park Stewardship 2007–2008 Action Plan* is published online at http://www.nature.nps.gov/water/Homepage/Ocean_Park_Stewardship.cfm.

twofold: most individual parks would not have to employ their own experts, and the experience gained in solving a problem at one park would be applicable in the other similar parks. In addition to providing technical support and coordination services, the new branch will increase policy support to parks and regions and provide for more effective public communication and education about stewardship. As Cross outlines in the implementation plan, “Connecting people to ocean parks remains the most important task ahead.”

Cross sees the role of the branch as a hub in which ocean and coastal parks can address common park problems. Additionally, the branch will be the major interagency contact for addressing issues at a national level and sharing resources with other governmental agencies. “When it comes to oceans and coastal issues, the main agencies involved are NOAA, U.S. Fish and Wildlife Service, U.S. Geological Survey [USGS], Minerals Management Service, and the U.S. Army Corps of Engineers. For projects that span multiple park areas,” Cross says, “our branch can represent the technical needs of the National Park Service effectively. Whether the need is for partnerships, alliances, or coalitions, we can help parks with interagency coordination.”

A big project that the Ocean and Coastal Resources Branch is undertaking now is the development of benthic habitat maps for eight of the ocean and coastal parks (fig. 1). “We’ve partnered with USGS and NOAA and are taking the best of their technology, science, and understanding, and translating it into products that can be used by parks in planning and management decisions about resources.” Ultimately, these maps could provide information about the status of fish populations, invertebrates, coastal and beach erosion, currents and sediment flow, wetlands restoration, and faults. Unlike at terrestrial parks, managers of ocean and coastal parks cannot readily observe the

resources in their care. Cross explains, “Several times I saw Gary Davis, retired marine biologist and former NPS science advisor at Channel Islands National Park, make presentations at conferences. He would show maps of the parks with a lot of terrestrial details, but the water was simply solid blue. We are focusing on benthic habitat maps because the information is badly needed. The most spectacular topography and geographic features are hidden from casual view and can only be detected by surveys that are technically complex, logistically difficult, and expensive.” If the branch is fully funded, the benthic habitat mapping project would be expanded beyond the eight pilot parks.

Another important focus of the branch is coordination of coastal watershed assessments. Since 2003, 29 assessments have been completed, with another 18 in

progress. These surveys describe water quality, habitat condition, invasive species, extractive uses, physical impacts from resource use and coastal development, and other issues affecting ocean and coastal resource health.

The new branch receives help from the Geologic Resources Division, which also has expertise in ocean and coastal resource management. Coastal Geologist Rebecca Beavers has been coordinating the production of coastal vulnerability maps that show a park’s susceptibility to erosion and other problems related to sea level rise. Julia Brunner, policy and regulatory specialist, helps parks understand NPS legislative authorities and jurisdiction, and is drafting a handbook that will provide basic guidance to improve the consistency and effectiveness of coastal resource management.

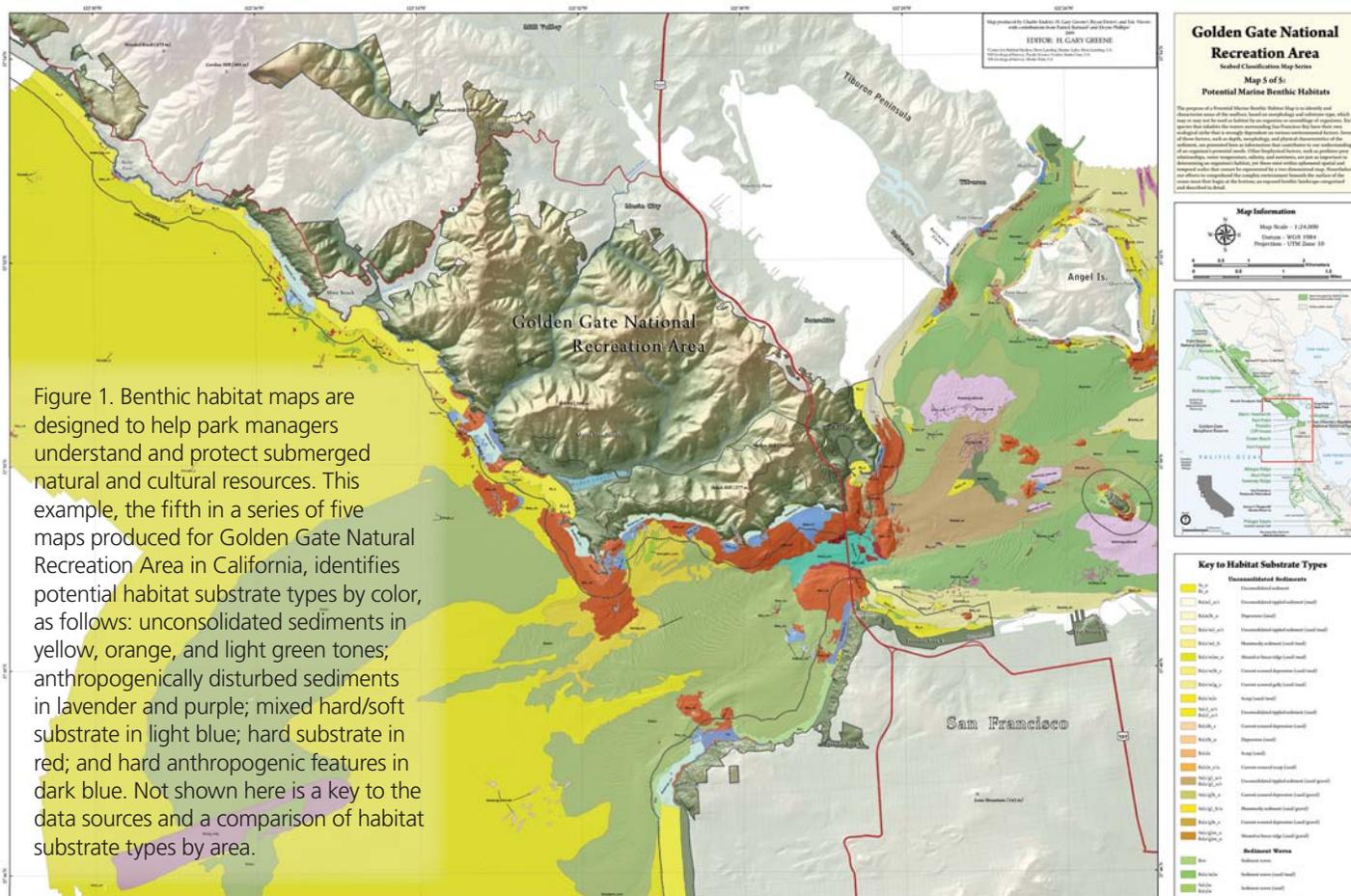


Figure 1. Benthic habitat maps are designed to help park managers understand and protect submerged natural and cultural resources. This example, the fifth in a series of five maps produced for Golden Gate National Recreation Area in California, identifies potential habitat substrate types by color, as follows: unconsolidated sediments in yellow, orange, and light green tones; anthropogenically disturbed sediments in lavender and purple; mixed hard/soft substrate in light blue; hard substrate in red; and hard anthropogenic features in dark blue. Not shown here is a key to the data sources and a comparison of habitat substrate types by area.

Cross and Brunner hosted a three-day workshop in Boulder, Colorado, in August 2009 for 52 NPS resource protection staff from ocean, coastal, and Great Lakes parks. The purpose of the workshop was to provide a forum to discuss ocean and coastal legal, policy, and resource management issues; NPS approaches to resource management problems; and conflicts or unresolved needs. Workshop participants identified climate change, fisheries management, invasive species, water quality, watershed management, sediment management and coastal infrastructure, and habitat and ecosystem restoration as the priority issues. Following up on the workshop, participants will frame an NPS director’s order on ocean and coastal park management, propose regulatory revisions, and develop additional guidance needed by park managers. These products will help park staffs address complex sub-

merged resource issues and will guide the development of an effective NPS ocean and coastal resource program.

Over the last 10–20 years the National Park Service has greatly expanded its capabilities for science-based management of park resources, albeit mainly terrestrial resources. Now with increasing awareness of overfishing, sea level rise, pollution, coastal erosion, and many other issues affecting our coasts, a management perspective that fully incorporates coastal and submerged natural and cultural resources is gaining strength and support. The Ocean and Coastal Resources Branch is a big step in the right direction to professionally managing and protecting these important resources. Its doors are open for business and its staff is at your service.

Contact

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About the authors

Jeff Selleck is the editor of Park Science. **Luke Carrington** volunteered for the Geologic Resources Division in 2009. He is a student studying journalism at the University of Wyoming.