

The COAST GUARD Journal of Safety & Security at Sea PROCEEDINGS

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Marine Protected Areas

Sustaining benefits | Meeting challenges | Seizing opportunities



PROCEEDINGS

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On the Cover: Lori Mazzuca, a Coast Guard PACAREA marine protected species manager and fine art photographer, captured this image of a humpback whale in the waters off the Hawaiian Islands. She also photographed the Hawaiian monk seal on the back cover, who seems to be warning readers not to skip articles. In reality, the seal was rescued from the wild to treat a virus that can cause temporary blindness.

Ms. Mazzuca's photos "Killers in the Mist" and "New Life" also accompany Mr. Brian Corrigan's article in this issue.

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Fathoms Deep in Salt Water

The wealth of ocean parks

by ELIZABETH MOORE
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NOAA Office of National Marine Sanctuaries

In 1911's "Book of Buried Treasure," author Ralph D. Paine sums up the enduring appeal of finding lost treasures:

The language has no more boldly romantic words than pirate and galleon and the dullest imagination is apt to be kindled by any plausible dream of finding their lost treasures hidden on lonely beach or tropic key, or sunk fathoms deep in salt water.

Indeed, pirates and their treasures have fired our imagination for well over a century, from Robert Louis Stevenson's "Treasure Island," to Disney's "Pirates of

the Caribbean" movie franchise, to today's news stories of gold doubloons found on rediscovered Spanish shipwrecks. While we can all relate to the exciting image of tumbled piles of gold coins gleaming underwater, we've also come to understand that the true sunken treasures of our ocean are not precious metals and gems, but what the ocean and its ecosystems and wildlife provide us.

Ocean Capital

Since humans arrived on the North American continent, there has never been a time they didn't survive and prosper from the ocean. From eating fish, crafting currency



California's Bowling Ball Beach overlooks Greater Farallones National Marine Sanctuary. NOAA photo by Matt McIntosh



The National Marine Sanctuary System includes 13 national marine sanctuaries and two marine national monuments. NOAA graphic

from seashells, and using furs as trading goods, our distant forebears weren't all that different from us today—eating fish, extracting energy and minerals, and guarding the resources of our exclusive economic zone.

What's different today is how many more of us there are, the voracious demands we place on our ocean, and the ruthless efficiency with which we fulfill those requirements for food, energy, medicine, minerals, shipping, and recreation. At a June 2017 Capitol Hill briefing on ocean wealth, scientists warned that we are on the brink of an industrial revolution for the ocean, and we need increased protection, better planning, and more knowledge to understand and manage the full picture of our ocean wealth to avoid the problems of the industrial revolution on land in the 18th and 19th centuries.

Ocean parks are one solution to those needs, providing long-term protection and planning for important marine and Great Lakes areas of our nation and serving as a kind of "savings account" for our marine capital. We have 1,200 underwater parks in the U.S. today, an institution we've had longer than most people realize. The first

official ocean park in the country was likely a fur seal reserve declared in 1869 around Alaska's Pribilof Islands.

Our ocean parks protect single species and shipwrecks to entire ecosystems, range from the very small to the immensely large, and are managed by authorities at all levels of government. Together they protect about a quarter of our exclusive economic zone—an area 1.4 times as large as our land mass—but only 3 percent is considered "no-take," meaning all extractive uses are prohibited. The National Marine Protected Areas Center, housed in the National Oceanic and Atmospheric Administration's (NOAA) Office of National Marine Sanctuaries, is responsible for serving as a resource for, and building partnerships among, the many federal, tribal, state, and local agencies involved in managing ocean parks.

One of the oldest and largest ocean park systems in the U.S. is the National Marine Sanctuary System, a network

of important underwater areas that together cover more than 600,000 square miles of the ocean and Great Lakes. The network consists of 13 national marine sanctuaries and Papahānaumokuākea (Hawaii) and Rose Atoll (American Samoa) Marine National Monuments, which protect America's most iconic natural and cultural marine resources. Sanctuaries are managed, studied, and protected with the help of formal and informal partners, including tribes, state agencies, and federal partners such as the U.S. Coast Guard, National Park Service, and other parts of NOAA. The sanctuary system also works with diverse partners and stakeholders to promote responsible, sustainable uses that ensure the health of our most valued ocean places.

Benefits of Sanctuaries

Like other ocean parks, national marine sanctuaries provide numerous benefits to our communities, nation, and planet. The benefits easiest to quantify are direct economic contributions. Sanctuaries protect the things that make our coasts so important and valuable—amazing

Marine Sanctuaries vs. Marine Monuments

The National Marine Sanctuary System comprises 13 national marine sanctuaries and Papahānaumokuākea and Rose Atoll Marine National Monuments. Though they sound similar, national marine sanctuaries and marine national monuments are actually two different types of protections.

National Marine Sanctuaries

Under the National Marine Sanctuaries Act, the National Oceanic and Atmospheric Administration (NOAA) or Congress can designate a national marine sanctuary. The National Marine Sanctuaries Act is the only federal law written specifically to protect ocean areas ranging from discrete geographies to entire ecosystems. The National Marine Sanctuaries Act provides the authority to issue regulations for each sanctuary and the system as a whole.

These regulations are developed and updated through a public process. NOAA takes nominations for potential new national marine sanctuaries from local communities and, if they meet certain criteria, accepts the nomination for a new national marine sanctuary to the inventory. Once NOAA decides to move forward with the designation process, it consults with Congress, other federal agencies, state

and local government entities, fishery management councils, and the public. This process, based on requirements in the National Environmental Policy Act and the National Marine Sanctuaries Act, provides multiple opportunities for public engagement and official public comment.

Marine National Monuments

Marine national monuments are designated by presidential proclamation under the Antiquities Act of 1906, which authorizes the president to establish national monuments on federal lands that contain “historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest.”

Marine national monuments are typically managed by multiple government agencies, which may include NOAA, the Department of the Interior, and other federal and state partners. The specific management partnerships vary depending on the details of the management arrangement established in the presidential proclamation. Moreover, although no public process is required under the Antiquities Act, designation of Pacific marine national monuments by former President George W. Bush, and the expansion of one of those

monuments by former President Barack Obama, were all preceded by some level of public engagement. Additionally, the development of marine national monument management plans and regulations is carried out through a public review process.

But one thing remains the same: Monuments and sanctuaries protect our nation’s underwater treasures. These special places are sources of national pride, and when we take care of them, we strengthen our nation—now, and for future generations.



A visitor to Florida Keys National Marine Sanctuary fly fishes in bright, shining waters. NOAA photo by David J. Ruck

wildlife and wondrous habitats, beautiful coastal vistas, fascinating indigenous cultures thousands of years old, and maritime traditions that have been with us for centuries. Just in sanctuary gateway communities, about \$8 billion is generated annually and 140,000 jobs supported in fields as diverse as commercial fishing, tourism, hospitality, recreational activities, research and science, and filming and photography.¹

Commercial fishing is an old and lucrative use of the ocean, worth \$5.2 billion in commercial landings in the U.S. in 2015.² Many sanctuaries, including several with no-take areas, support valuable commercial fisheries. Stellwagen Bank National Marine Sanctuary off the coast of Massachusetts is an area of concentrated commercial fishing effort, with about 300 commercial fishing boats landing a total commercial catch annually valued between \$15–23 million. The four California marine sanctuaries—Channel Islands, Monterey Bay, Greater Farallones, and Cordell Bank—together include more than 1,000 commercial fishers who generate more than \$100 million in sales annually.

Recreational fishing—valued at \$60.6 billion in sales in the U.S. in 2014³—is another lucrative use of sanctuary

waters. About 75 party and charter boats operating in Stellwagen Bank National Marine Sanctuary generate a direct annual sales value of about \$2.5 million. Several major sport fishing tournaments occur off the coast of Georgia every year, with Gray’s Reef National Marine Sanctuary being a premier target for participants. An estimated \$700,000 is spent annually by tournament fishermen targeting Gray’s Reef. Recreational fishers spend \$274 million annually in and around Florida Keys National Marine Sanctuary, and about 11,000 recreational fishing trips are taken each year in Olympic Coast National Marine Sanctuary off the coast of Washington.

Wildlife watching is big business in the U.S., as birders and other wildlife watchers buy gear and take tours and trips to get closer to their objects of devotion, to the tune of about \$30 billion annually.⁴ Whale watching in Hawaiian Islands Humpback Whale National Marine Sanctuary, conducted by about 50 operators statewide, has an annual total economic impact of up to \$74 million. Nearly all whale watching off the coast of Massachusetts occurs in Stellwagen Bank National Marine Sanctuary, generating about \$24 million a year. Wildlife viewing and nature study engage over 620,000 visitors and residents in Florida

Keys National Marine Sanctuary, resulting in almost 2.7 million days of such activity each year. Kayaking and sightseeing charters and rentals in Channel Islands National Marine Sanctuary generate about \$1 million in annual spending.

Like these other activities, recreational diving and snorkeling rely on healthy, attractive habitats and wildlife. This diving/snorkeling business is a profitable one in the U.S., worth about \$11 billion to the American economy.⁵ Each year there are approximately 2.8 million days of diving in Florida Keys National Marine Sanctuary, with participants spending about \$54 million on diving and snorkeling operations. Despite its distance offshore—about 115 miles—Flower Garden Banks National Marine Sanctuary gets up to 2,000 divers a year.

Sanctuaries as Members of Communities

Sanctuaries are invested in the prosperity of their gateway communities, and work both with and as part of those communities to support diverse, healthy economies. Small business owners and operators, including those of charter boats and dive shops; representatives of local civic and use associations; and local elected officials sit on sanctuary advisory councils to offer their expertise and opinions to sanctuary superintendents.

Sanctuaries are members of and/or work with nearly 20 chambers of commerce or visitor bureaus across the country, and engage with national use associations to work with recreational fishers, divers, and other recreators. Sanctuaries support small businesses in some sites by developing recognition programs, like the Blue Star program in Florida Keys National Marine Sanctuary, or in others by placing volunteer naturalists on charter boats and wildlife viewing tours, like Channel Islands National Marine Sanctuary's Naturalist Corps.

Sanctuaries are sometimes even able to work with local officials to recruit new businesses and expand existing ones. For example, the Great Lakes Maritime Heritage Center, the visitor center for Thunder Bay National Marine Sanctuary, is a major tourist destination for the region, hosting eight times more visitors annually than the entire population of its host city of Alpena, Michigan.

Protected status helps raise the profile of an area to a national audience. Stellwagen Bank has been voted as a favorite recreational fishing spot in the northeast, and the sanctuary has been named the best place to see ocean wildlife in the United States.


More than 33,000 jobs in the Florida Keys, an area surrounded by a sanctuary, are supported by ocean recreation and tourism, accounting for 58 percent of the local economy and \$2.3 billion in annual sales. Finally, the coral reefs of American Samoa provide for subsistence fishing, traditional nearshore commercial fishing, recreation, and

non-use values, for a value that might reach \$10 million a year.

Because sanctuaries and other ocean parks are permanent, managed institutions, they serve as a safe investment for agencies, universities, NGOs, and other organizations to invest in science and education. For example, dozens of partners contribute to the SIMoN (Sanctuary Integrated Monitoring Network) project to help assess resource conditions in the four California sanctuaries. Every dollar the sanctuary system spends on education activities is matched by partners, doubling the reach of education and interpretive efforts.

Besides purely economic value, there are other benefits to national marine sanctuaries and other ocean parks. They help preserve the places we love to play, so that the generations who beachcomb and surf cast and swim today will give way to generations who can enjoy the same pleasures tomorrow. Sanctuaries spread the word about ocean conservation by engaging all types of audiences and working with partners to teach communities, the nation, and the world. They provide opportunities for citizen scientists and other volunteers who help us study and protect everything from seals to shipwrecks. They are democracy in action, engaging citizens through public hearings, public comment periods, and advisory councils, and encouraging communities to nominate their waters for consideration as a future sanctuary. Sanctuaries preserve the history of lives spent working the ocean and defending the nation.

While we might daydream about finding buried treasure—or winning that mega lottery—chances are we never will. But real wealth is available to us every day in our ocean parks and beyond in the beaches we walk, the waves we surf, the coral reefs and kelp forests we dive, the fish we eat, the air we breathe, and the energy we need.

And we don't even have to be pirates to enjoy it! 

About the author:

Elizabeth Moore is a senior policy advisor at the National Marine Sanctuary System. Her current role includes developing strategic projects and partnerships on behalf of the system, including support of its 50th anniversary in 2022.

Endnotes:

- ¹ All socioeconomic information and supporting references regarding national marine sanctuaries can be found at: <http://sanctuaries.noaa.gov/science/socio-economic/>.
- ² Fisheries of the United States 2015, NOAA National Marine Fisheries Service, September 2016. www.st.nmfs.noaa.gov/Assets/commercial/fus/fus15/documents/FUS2015.pdf
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