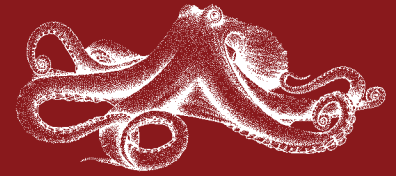
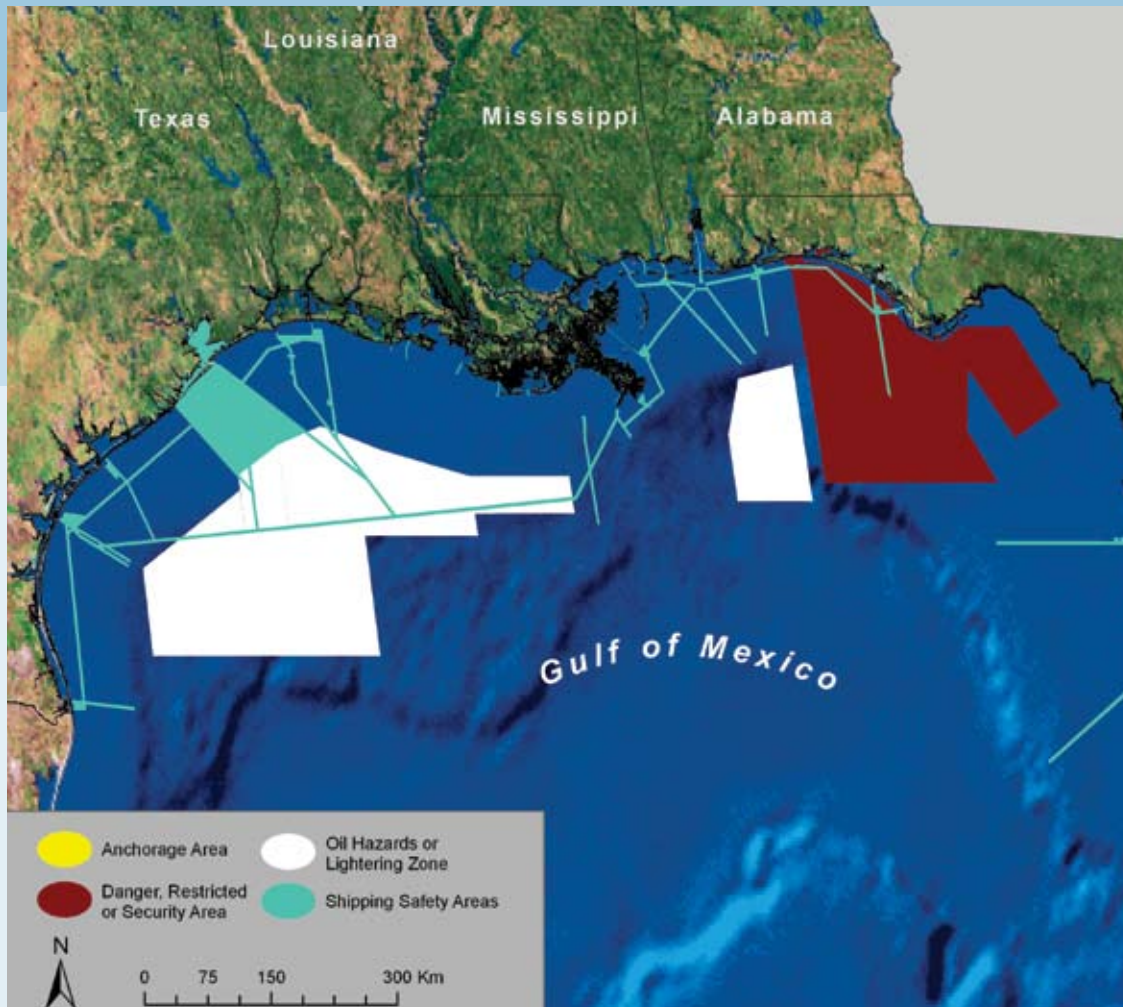


STATE OF THE NATION'S DE FACTO MARINE PROTECTED AREAS



RIKKI GROBER-DUNSMORE, DAVE CANNY, MIMI D'IORIO,
CHARLES WAHLE, LAUREN WENZEL, LISA WOONINCK



MAY 2008

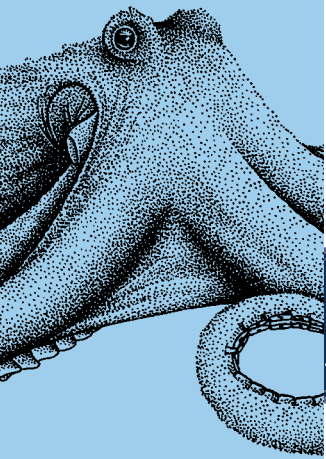


TABLE OF CONTENTS

Executive Summary	1
Introduction	3
National Perspective	6
Regional Perspective	16
Glossary	78
Appendices	
I. Methods and Classification Scheme	79
II. Acronyms	81

This report is the first synthesis of information on the location, purpose, and restrictions for all federal de facto marine protected areas (DFMPAs) in the United States. This report reveals important trends in how areas that are established for purposes other than conservation are used, and describes whether and how these areas limit access or restrict human activities (such as fishing and recreation). This is viewed as a first step towards assessing how these areas contribute to conservation of marine resources nationwide.

National Marine Protected Areas Center Project Team: Rikki Grober-Dunsmore, Dave Canny, Mimi D'Iorio, Charles Wahle, Lauren Wenzel, Lisa Wooninck

Contributing Staff and Partners: This report is made possible through the dedicated efforts of many people who helped build the de facto Marine Protected Areas inventory, particularly federal marine resource programs and agencies. We are especially indebted to Bob Allen, Annie Berlin, Robin Brake, Kelly Chapin, Camille Destaffney, Monica Diaz, Charles Dooling, Bill Dougherty, Greg Fondran, Judson Gatch, Chris German, Nicholas Jarboe, Claudia Makeyev, Mark Matzsu, Sheila Murray, Kelly Stirling, Lisa Tinker, and Gloria Wilson. Graphic design by Courtney Perry.

Citation: *National Marine Protected Areas Center 2008. State of the Nation's De Facto Marine Protected Areas, (R. Grober-Dunsmore and L. Wooninck, editors). Silver Spring, Maryland.*

Photos: *All photos are from U.S. government collections and illustrate DFMPAs around the nation.*

For more information contact mpainfo@noaa.gov
To download this report, please visit: www.mpa.gov

For more information about the National Marine Protected Areas Center, please visit www.mpa.gov



EXECUTIVE SUMMARY

Marine ecosystems nationwide are experiencing the loss of key habitats, declines in recreationally and commercially important fish and shellfish populations, and undesirable changes in the composition of marine communities. Consequently, scientists and managers are increasingly interested in comprehensive ecosystem-based approaches to marine conservation, including the use of place-based management tools such as marine protected areas (MPAs). However, some stakeholders have raised concerns about the use of MPAs as a conservation tool since they, by definition, restrict human activities. The degree to which human activities are affected by MPAs is largely unknown because there has been no comprehensive national assessment of the use of this conservation tool. Furthermore, there is a perception among some stakeholders that large areas of the ocean are already “off limits” for reasons other than conservation (e.g., as military training areas, shipping lanes, etc.). Such areas are commonly referred to as de facto Marine Protected Areas (DFMPAs). To provide more information about these areas, and contribute to a better understanding of their contribution to marine spatial management in the United States, the National Marine Protected Areas Center (MPA Center) undertook the first-ever nationwide inventory and analysis of de facto MPAs.

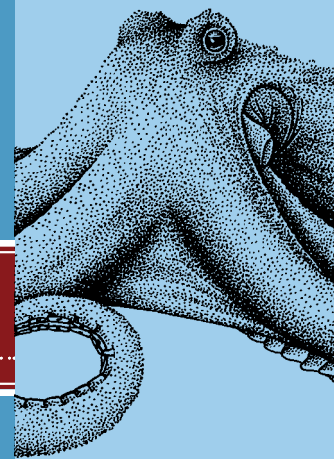
DFMPAs are areas of the ocean where access and/or use are restricted for reasons other than conservation, although they may provide conservation benefits. This report gives the first nationwide view of the number, size, type, and purpose of DFMPAs in the U.S. It answers the

question, “How many DFMPAs exist and how are they currently being used?” This work complements work by the MPA Center to assess the status of Marine Managed Areas (MMAs), places in the marine environment set aside for conservation purposes. Together, these analyses provide the first national perspective on the use of various types of place-based marine management.

More than 1,200 DFMPAs are located in and cover 3 percent of U.S. waters, which extend from the coastline to 200 nautical miles offshore. DFMPAs range in size from less than one acre to more than 40,000 km², with the vast majority at the smaller end of this spectrum. Most of the small sites were created to provide places for vessels to anchor safely. There are several extremely large DFMPAs in the country; most of these provide dedicated training and operation areas for various branches of the U.S. military, or facilitate the transfer of oil and gas to moored tanker vessels (also known as lightering).

DFMPAs occur in every region of the country. While the Mid-Atlantic has the greatest number, the Gulf of Mexico has, by far, the largest area of the nation’s DFMPAs, most established to ensure the safe transfer of oil and gas. Alaska ranks second nationally with 13% of its regional waters in a few large DFMPAs. These are primarily international security and military training stations, situated between Alaska and Russia.

Human activities can occur in nearly all of U.S. waters, including areas within MPAs and DFMPAs. The total area that is closed to public access in DFMPAs (about 1,500 km²) is roughly equivalent to the marine area closed for conservation purposes (about 1,700 km²). For the entire U.S.,



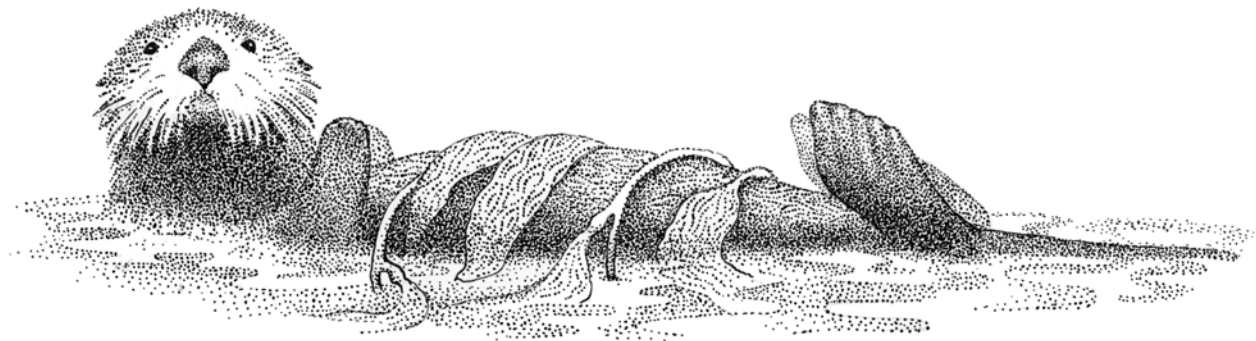
an area roughly equivalent to the Great Salt Lake is off-limits to public use in DFMPAs and MPAs combined.

No analysis of the contribution of DFMPAs to conserving specific habitats and important marine resources has yet been conducted. The contribution of individual sites will vary depending on their location and resources. For example, some DFMPAs are located in highly productive fisheries in Alaska, or isolated Pacific Island coral reef ecosystems, while others are located in heavily industrialized and polluted coastal waters. Further analysis and research will be required to ascertain the conservation potential of individual DFMPA sites to marine conservation in the U.S.

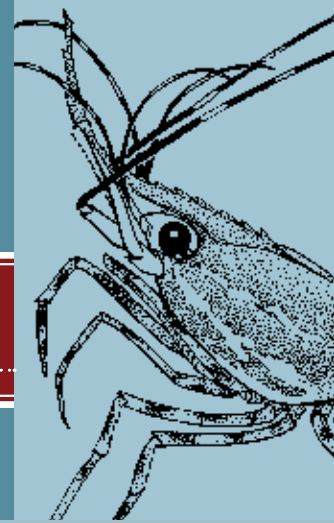
While the U.S. Coast Guard, U.S. Air Force, U.S. Navy and U.S. Army all manage DFMPAs in the U.S., the U.S. Coast Guard manages more DFMPAs than any other agency. Coast Guard DFMPAs typically help regulate shipping and anchoring and separate traffic to provide safe navigation in our nation's waters. The U.S. Air Force and Army control much of the remaining DFMPA area in danger zones, restricted areas and security areas. Here, activities can be limited to protect the public

from military exercises, including target ranges and mine-laying and detonation practice. The U.S. Marine Corps, Environmental Protection Agency, National Aeronautical & Space Administration (NASA), U.S. Navy, Army Corps of Engineers and National Oceanic & Atmospheric Administration (NOAA) each administer a small number of DFMPAs.

This survey of DFMPAs reveals important insights into the nature and magnitude of access and use restrictions in areas established for reasons other than conservation. Thus far, we know little about the contribution of DFMPAs to conserving important marine resources and habitats or the effects of these areas on human activities. However, results from this analysis suggest that restrictions on human uses are generally minor and/or intermittent. The vast majority of this area is open access and restrictions are primarily geared toward reducing potential accidents or conflicts of use in congested areas. The contribution of DFMPAs to conservation goals could be greatly enhanced by including them in broader networks of MPAs, and working across agencies to manage areas to achieve shared conservation objectives.



INTRODUCTION



Marine protected areas (MPAs) are increasingly used to conserve biodiversity, replenish important fish stocks, protect exploited species and improve ecosystem function in the United States (U.S.). At the same time, various stakeholder groups have raised concerns that large portions of the ocean will be “off limits” to human use. One way to determine how much of the ocean is effectively closed to human uses (e.g., fishing and recreation) is to evaluate the full range of marine areas that restrict human activities. This requires examining de facto MPAs (see Box 1) and areas set aside for conservation purposes (see Box 2). This will provide a national perspective of how much U.S. marine habitat is protected and assess how much of the ocean is off limits to important economic and recreational activities.

Areas that are set aside for reasons other than conservation, such as economic, human health or safety, and protection of government or private property are called de facto MPAs (DFMPAs). These are places where activities are restricted by law for reasons other than conservation or natural resource management. Familiar examples include: safety, security, and danger zones, restricted areas, prohibited lightering areas¹, some anchorage grounds, and traffic separation schemes. Such areas may function similarly to traditional conservation-based MPAs by limiting activities that may damage marine populations or habitats or reducing access to ecologically-sensitive areas. Other DFMPAs do not affect people’s day to day activities, and place few or no limits on fishing or

recreational boating.

Presidential Executive Order 13158, signed on May 26, 2000, directs the National Oceanic and Atmospheric Administration (NOAA) and the Department of the Interior to work with other federal agencies and states, territories, tribes, and the public to develop a scientifically-based, comprehensive national system of MPAs in the U.S. As a first step towards creating a national system, the National Marine Protected Areas Center (MPA Center) is synthesizing information on all existing place-based marine spatial management efforts in the country, including those that were not implemented specifically for conservation purposes. This report gives the first nation-wide view of the number, size, type, and purpose of DFMPAs in the United States. It answers the question, “How many DFMPAs exist in the United States, and how are they currently being used?” This work complements an analysis of areas established for conservation purposes, called MMAs. Together, these reports give a national perspective of various forms of place-based marine management in U.S. waters.

Methods

An inventory of the location, purpose, jurisdiction, level and types of restrictions within federal DFMPAs was created using the publicly available Code of Federal Regulations (CFR). The CFR is the codification of the rules published in the Federal Register by the executive departments and agencies of the Federal Government. Data are current as of September 2005. Supplementary documentation and information was gathered from Department of Defense websites and information on specific

1. Lightering is the transfer of oil or other hazardous materials at sea



Box 1 What is a De Facto MPA?

De facto MPA An area of the ocean where access or activities are restricted by law for reasons other than conservation or natural resource management. Various types of areas are considered de facto MPAs (see Box 2) and these areas are often established to protect public health and safety, provide training areas for the military or protect public and private infrastructure. Examples of DFMPAs include military installations, anchoring sites, navigational channels, oil and gas transfer areas, safety, security and restricted areas

(e.g., power plants). To be considered a de facto MPA a site must meet the following criteria:

- **Area** Must have legally defined boundaries
- **Reserved** Established by or currently subject to law or regulation
- **Marine** An area of ocean or coastal waters or the Great Lakes
- **Restrictions** Access and activities are more highly regulated or restricted within the area than surrounding waters
- **Duration** Restrictions enacted for a minimum of ten years duration. Within a calendar year, a minimum of three days restriction (does not need to be continuous)

Box 2 What is a Marine Managed Area (MMA)?

MMA The term MMA is used to describe the full range of areas that are set aside for conservation purposes, and is more inclusive than the term marine protected areas (MPAs). MMAs can include fisheries management areas, marine parks, no-take reserves, and recreation areas. The MPA Center defines an MMA as any area that has the following characteristics:

- **Area** Must have legally defined boundaries
- **Marine** An area of ocean or coastal waters or the Great Lakes
- **Reserved** Established by or currently subject to law or regulation
- **Lasting** Provide year-to-year protection for a minimum of two consecutive years
- **Protection** Have existing regulations that afford increased protection specifically to natural and/or cultural resources and qualities within the site

sites was collected using publicly available websites and phone interviews. Various state and federal agencies including the Minerals Management Service, U.S. Fish and Wildlife Service, NOAA and U.S. Coast Guard provided relevant information. Shapefiles for nearly every DFMPA (96% of all sites) were created by the MPA Center using information collected from the CFR or from publicly available websites. For more details on methods and data sources, refer to Appendix I. Spatial analysis in geographic information systems (GIS) was conducted nationally and regionally, using a classification system developed for this analysis. Sites that are used as warning areas by the military were not included in this analysis. For a description of the guidelines adopted for creating the marine boundaries of sites in this report, please refer to Appendix I.

How to Use this Report

This report analyzes the number of DFMPAs located in U.S. waters, regional patterns in DFMPAs, their intended purpose, and the degree of protection they provide. It does not evaluate the effectiveness of these sites. The report includes analytical results of the number and total area protected within DFMPAs for various classifications (see Box 3). These two ways of describing DFMPAs distribution often provide very different perspectives, and when reported together provide a more thorough picture of how DFMPAs are managed. For purposes of clarity, summary results are consistently provided with number of DFMPAs in parentheses, and area presented in percentages within figures.

This report includes national and regional summaries of DFMPA distribution, followed by purpose and type of site. It also includes the management agency that authorizes the DFMPA and the date of establishment. Level of access and types of fishing restrictions are then summarized, since it is important for stakeholders and managers to understand how the various types of DFMPAs affect user activities differently. Evaluated together, these characteristics contribute to providing an accurate picture of the effect of a DFMPA on human uses, and its role in contributing to the conservation of healthy ecosystems.

Within each regional section, text boxes

Box 3 A Note on Terminology

This report uses the terms marine managed areas, de facto marine protected areas, no-take reserve and no access year round de facto marine protected areas throughout the text. Marine managed areas, in the broadest sense, are geographic areas established to conserve or manage resources within the marine environment. The National MPA Center refers to a site as a marine managed area, if the site was established for conservation purposes. Marine managed areas exist in various shapes, sizes and forms. Examples of sites that are considered marine managed areas include national marine sanctuaries, fishery management zones, national seashores, national parks, state reserves, critical areas, national estuarine research reserves, aquatic preserves, areas of critical concern, and essential fish habitat areas.

A site is referred to as a de facto marine protected area when a geographic marine area is designated for purposes other than conservation- such as for military or human health and safety purposes.

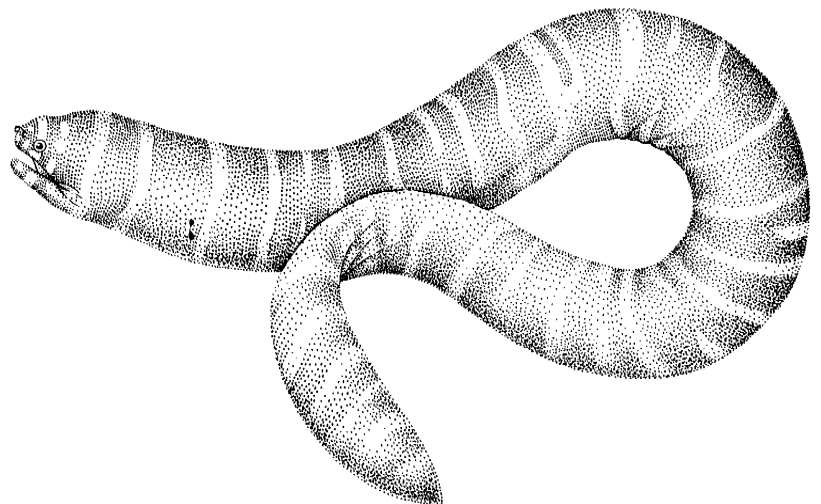
A no-take marine reserve is a type of marine managed area where all forms of extractive harvest are prohibited. Other terms for a no-take reserve include marine reserve, no-take reserve, and exclusion zone.

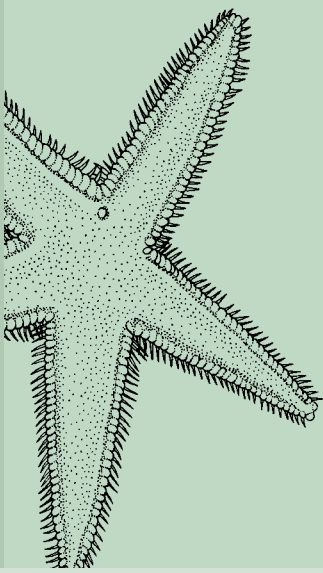
A no access year round DFMPA is a type of DFMPA where all forms of extractive harvest are prohibited, as access is completely prohibited.

provide case studies of individual DFMPAs. These case studies give detailed information on the purpose, location and context of individual DFMPAs. Examples of individual DFMPAs are used throughout the text of the regional sections to provide insights into how specific DFMPAs potentially affect access, human activities and conservation of marine resources.

To assess the potential contribution of DFMPAs to the conservation of marine resources, each regional section is concluded with a description of the total area and number of sites that are effectively off limits to fishing on a year round basis. Determining the potential

contribution of DFMPAs to conserving marine resources is difficult. In some cases these areas are used for target practice by aircraft, ground troops and missiles. The impacts of these uses have rarely been assessed, but in many areas impacts are thought to be minimal, since many areas are rarely used. Because little information on the status of marine resources inside DFMPAs is available, this report summarizes how much area is no access, but does not examine the status of resources within these areas.





NATIONAL PERSPECTIVE

AT A GLANCE

- 1,234 DFMPAs exist in the U.S.
- The vast majority (94%) do not restrict human activities
- DFMPAs cover 3% of U.S. waters
- The Gulf of Mexico has more area in DFMPAs than any other region, but the Mid-Atlantic has the greatest number of DFMPAs
- Danger zones cover more area than any other type of DFMPA
- The U.S. Coast Guard controls more area than any other management agency
- About 1,500 km², an area three times the size of Lake Tahoe, is contained in no access DFMPAs
- The area of DFMPAs in no access zones is about the same as the area designated as no take reserves in the U.S.

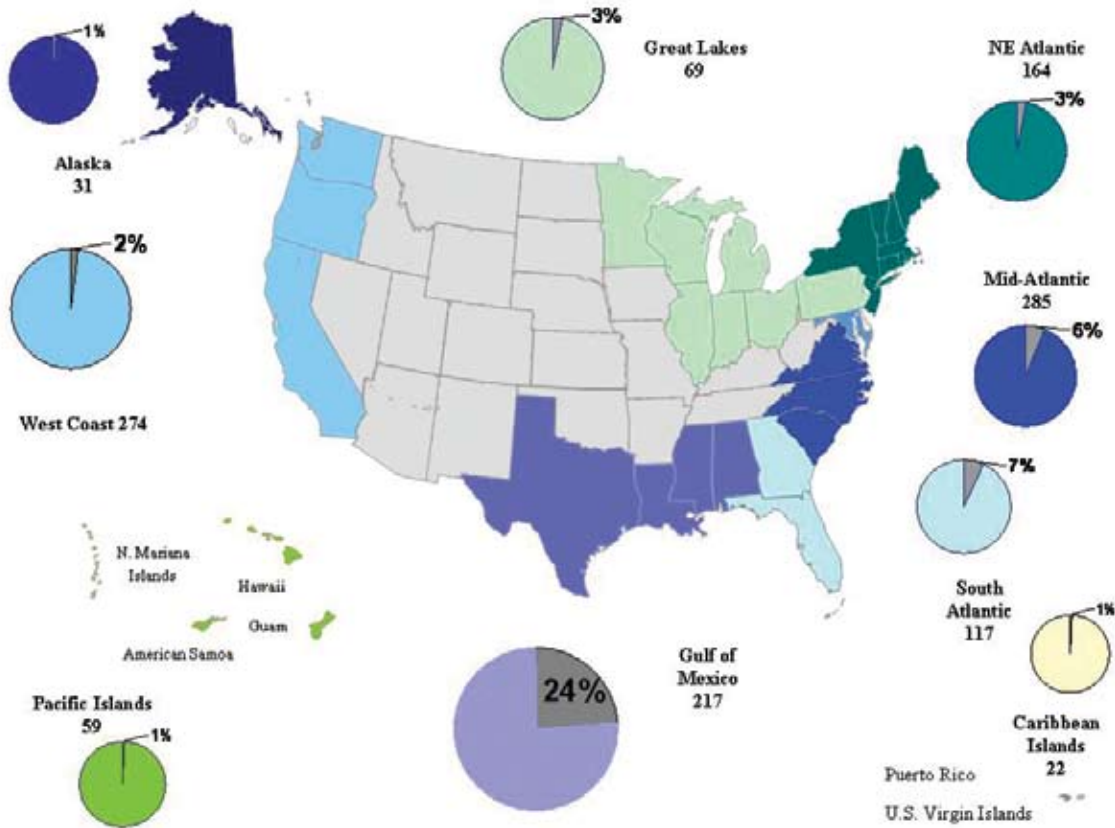
More than 1,200 DFMPAs (1,234) are located in U.S. waters (0-200nm). These sites cover 3% of the U.S. waters, (0-200 nautical miles offshore), which includes the Exclusive Economic Zone (EEZ), Territorial Sea, and state waters (Map 1; Graph 1). DFMPAs range in size from less than one acre to more than 40,000 km², though the vast majority is at the smaller end of this spectrum. Most of the small sites were created to provide places for vessels to anchor safely. Most of the large sites provide dedicated training and operation areas for various branches of the U.S. military, or facilitate the transfer of oil and gas to moored tanker vessels (Map 2).

De facto MPAs occur in every region of the country (Graph 2; Table 1). While the Mid-Atlantic has the greatest number, the Gulf of Mexico has, by far, the most DFMPA area compared to any other region, most of it to ensure the safe transfer of oil and gas. Alaska ranks second nationally with 13% of its regional waters in a few large DFMPAs. These are primarily international security and

military training stations, situated between Alaska and Russia.

The South Atlantic, West Coast and Mid-Atlantic each have many individual DFMPAs, but these cover a relatively small portion (5 -7%) of the regional waters. The South Atlantic DFMPAs are predominately military sites; the largest are air to air combat training areas located off the coast of Florida and Georgia. The West Coast is dominated by areas that assist vessels in navigating safely through heavy shipping traffic. Large swaths of the Pacific Ocean near Seattle, Los Angeles and San Francisco are designated to help boaters navigate through these highly congested areas. While the South Atlantic has half the number of sites as the West Coast, the areas are comparable, in large part because the South Atlantic has some of the nation's largest danger zones (see Box 4). While the Mid-Atlantic has more sites than any other region, most of these are small anchorage areas and cover only a modest area.

Minor portions (1–2%) of New England, the



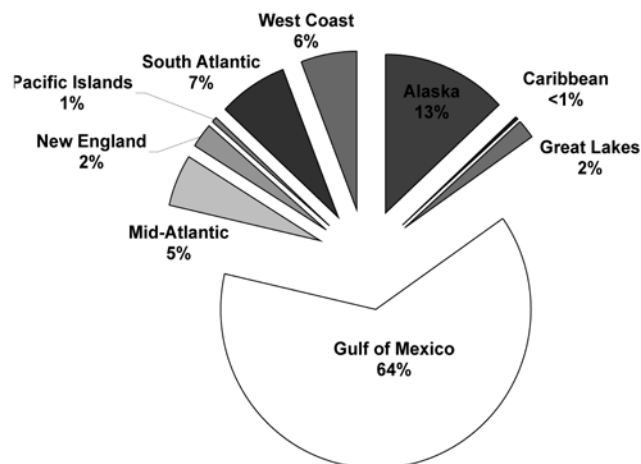
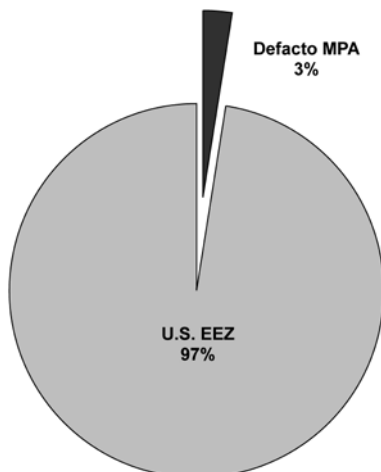
Map 1
Number and percentage area of each region's waters (0-200 nm) in DFMPAs. The number of individual sites is given below the name of each region. The percentage of each region's waters in DFMPAs (0-200 nm) is given above each pie. Individual pie charts are scaled to the number of DFMPAs by region.

Great Lakes and the Pacific and Caribbean Islands regional waters are contained in DFMPAs. New England's DFMPAs almost exclusively control shipping and help ensure that small boating is safe amidst some of the nation's busiest ports. In the Great Lakes, most of the DFMPA area is contained within a single site –Volk Field Air National Guard Station – though the marine portion is rarely used. Military installations also mark the Pacific and Caribbean Islands regions. Here, air to air combat training occurs and historically these areas

have been used for small arms target practice and missile launches. Many of the sites in the island states and territories have been decommissioned, and are no longer in use, although the sites still exist legally in the Code of Federal Regulations (CFR). Several of these “defunct” DFMPAs occur in some of the best coral reef ecosystems in the U.S., and in several cases new MPAs have been established to conserve the valuable marine habitats and resources within these areas.

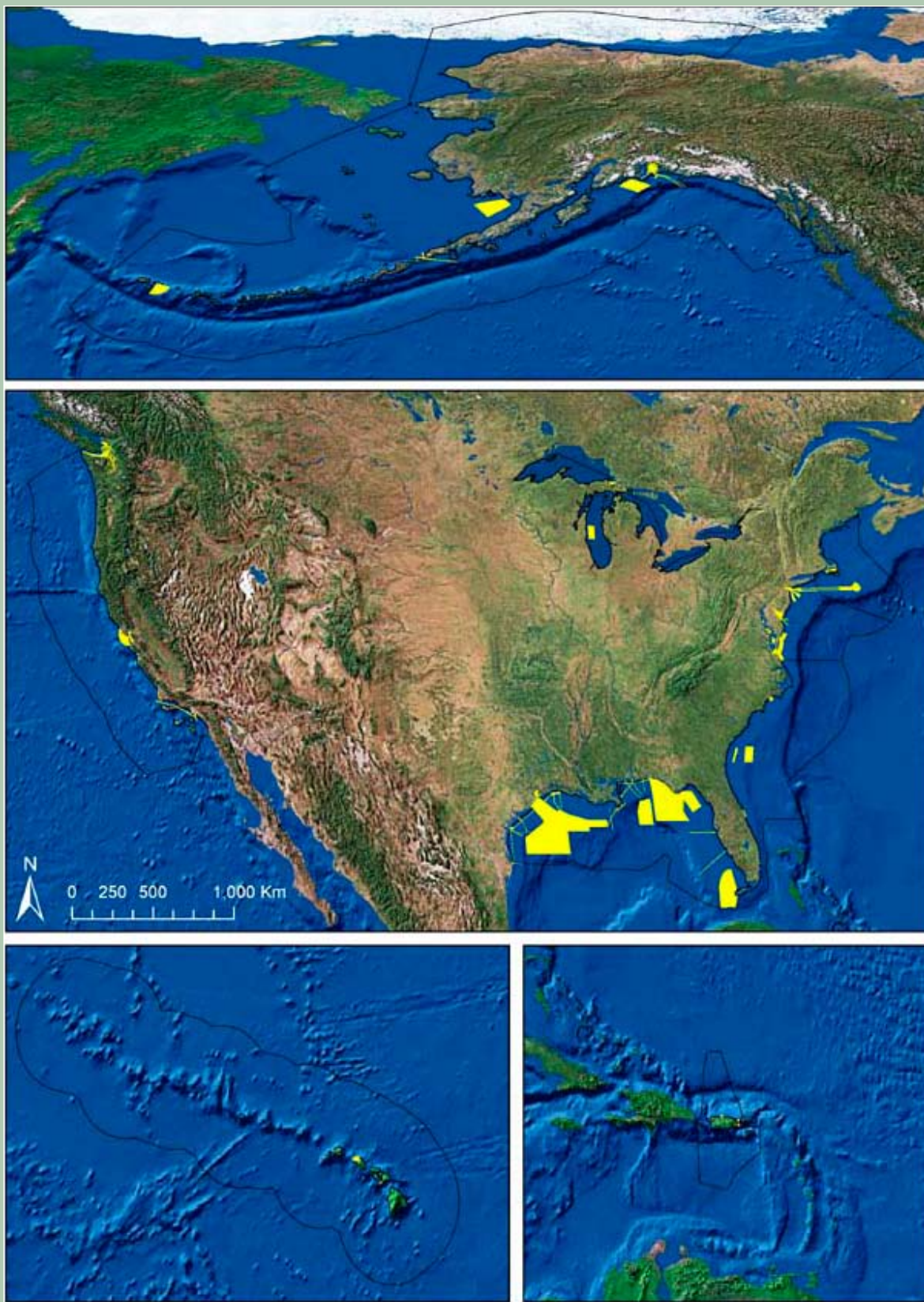
Graph 1 (Below L)
Percent total area of U.S. waters (0-200nm) in DFMPAs.

Graph 2 (Below R)
Percent of total DFMPA area in the U.S. by region.



Map 2

Distribution of DFMPAs within the continental U.S. and the islands and territories within U.S. jurisdiction. DFMPA boundaries are indicated in yellow. The black line indicates the 200 nm limit. Maps are shown at the same spatial scale for comparison. Bottom left is the Hawaiian Island, Bottom Right is the Caribbean Islands.



	Percentage of total DFMPA area in U.S. by region	Number of DFMPAs	Total Area (km ²) in DFMPAs (overlap included)
Gulf Mexico	64%	217	215,653
Alaska	13%	31	44,411
South Atlantic	7%	117	29,522
West Coast	6%	274	30,547
Mid-Atlantic	5%	285	16,719
New England	2%	164	7,621
Great Lakes	2%	69	4,674
Pacific Islands	1%	59	1,605
Caribbean	<1%	22	829

Note: Bold indicates the region with the greatest amount for each column.

What types of DFMPAs exist in the U.S.?

There are twelve different types of DFMPAs in the U.S., including danger zones, restricted areas, and anchorage grounds (see Box 4). The type of DFMPA is determined by each managing agency when the site is established.

Danger zones are the most common type of DFMPA (Graph 3; Table 2). These are typically large military training grounds where missiles are tested, air craft are flown in combat training missions and troops prepare for active fighting. These zones frequently are strategically placed in regions at the periphery of the nation. Consequently, the Caribbean and Pacific Island territories and Florida, Alaska and the Great Lakes have considerable portions of their waters in this type of DFMPA. Only a few, relatively small danger zones exist in New England, the West Coast and the Gulf of Mexico. However, the specific regulations within this type of DFMPA

vary from region to region. For example, in the Gulf of Maine Pemaquid Point danger zone, human activities are allowed unimpeded except for immediately prior to and during the period when sonobuoys are being dropped. Then an escort

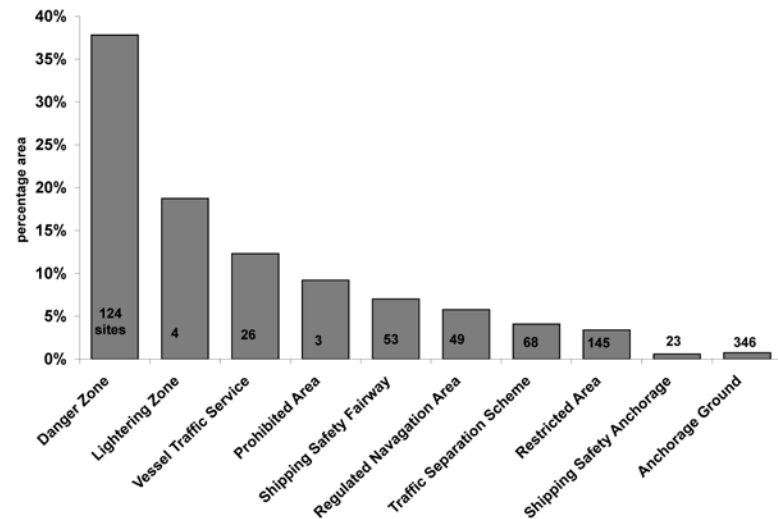


Table 1

Percentage of total DFMPA area, number, and total area in de facto MPAs by region. Overlap among DFMPAs is included in calculations of total area.

Table 2 (Below)

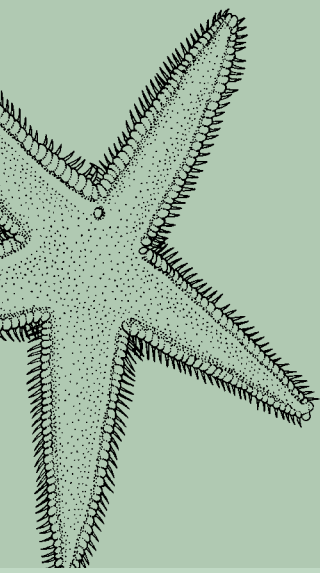
Area of DFMPAs by type and region (percent area of each region's total DFMPA area).

Graph 3

Number and percentage area of the nation's DFMPAs by type. The number of individual es for each type is indicated in the bar graph.

	Danger Zone	Lightening zone	Vessel traffic service areas	Restrict/Safety Prohibit	Shipping safety fairway	Regulated Navigation Area	Traffic separation scheme	Anchorage
New England	1	0	0	<1	25	<1	61	12
Mid-Atlantic	14	0	<1	<1	11	43	24	3
South Atlantic	85	0	<1	1	<1	13	0	<1
Gulf of Mexico	36	35	10	13	8	<1	<1	<1
Caribbean	96	0	0	<1	0	<1	0	4
Pacific Islands	86	0	0	9	0	2	0	1
West Coast	4	0	40	<1	<1	42	10	2
Great Lakes	73	0	23	<1	0	3	<1	<1
Alaska	63	0	7	20	8	<1	<1	<1

NOTE: Bold indicates the greatest area for each type. To reduce the number of categories, danger zones, restricted areas and security zones were classed together, and anchorage grounds, shipping anchorages, and special anchorage areas where classed together.



Box 4 Types of De Facto MPAs

There are various types of DFMPAs in the U.S. The type of DFMPA is determined by the managing agency, when the site is established.

Anchorage Ground To protect government vessels or vessels carrying explosives from injury or sabotage

Danger Zones To protect the public from target practice, bombing, rocket firing or other especially hazardous operations

Lightering Zone To confine and control oil and hazardous materials transfer

Prohibited Area To prevent oil and hazardous materials transfer at sea

Regulated Navigation Area To control vessel traffic around ports and harbors

Restricted Area To provide security for government operations and protection of the public from the risks of damage or injury arising from government activity by prohibiting or limiting public access

Safety Zone To limit access for safety and environmental purposes

Security Zone To safeguard public or private infrastructure from destruction, loss, or injury from sabotage

Shipping Safety Fairway To control the erection of structures in highly trafficked areas

Shipping Safety Anchorage To provide for safe vessel routes

Special Anchorage Area To provide safe navigation in navigable waters

Traffic Separation Scheme To provide access routes for vessels to and from ports

Box 5 Purpose of De Facto MMAs

De facto MPAs have three major purposes: military, public health and safety, and private and public infrastructure protection.

Military To protect military vessels and installations and the public from military exercises, including naval bases, target ranges, missile ranges, mine laying and detection practice, and degaussing areas.

Public Health or Safety To protect the public from environmental hazards or government activities. Examples include many anchorage areas, traffic separation schemes and prohibited lightering areas.

Public and Private Infrastructure To protect government property and privately owned facilities from sabotage and to protect the public from operations that might endanger health or safety. Examples include nuclear power facilities, and mineral or energy extraction platforms.

vessel or naval aircraft is in the vicinity to ensure that no persons or vessels are in the testing area.

Prohibited areas are DFMPAs where the transfer of oil is not allowed, in order to protect sensitive coral and sponge habitats. Lightering is then allowed to occur in adjacent areas. Only three prohibited areas exist in the Gulf of Mexico, yet are the second most extensive type of DFMPA, since these areas are extremely large. For example, one prohibited area is larger than several states in the nation.

Various types of DFMPAs exist to prevent collisions along the approaches to major harbors, reduce damage to waterfront facilities, and protect harbors, ports, the environment and human lives. Regulated navigation areas, vessel traffic service areas, traffic separation schemes, and shipping safety fairways are all used to help ships move safely and quickly through congested ports and marine highways. Fundamentally, these various types of DFMPAs function similarly, but different regions use different types, as the differences among the various types are inconsequential. In the West Coast and Great Lakes regions, vessel traffic service areas are most prominent. As the West Coast is the gateway to trade in the Far East, Seattle, Los Angeles and San Francisco have large vessel service areas to safely regulate commerce. Traffic separate schemes and shipping safety fairways comprise most of the DFMPAs in New England.

Restricted, security and safety zones/areas occur in substantial sections of Alaska, the Gulf of Mexico and the Pacific Islands. These typically protect industrial or military facilities such as Port Valdez in Alaska or the Crystal River Nuclear Power Plant in Florida.

Anchorage are more numerous than any other type of DFMPA, but individual sites are typically small. Therefore, their total area is negligible. New England has more anchorage DFMPAs than any other region, but most of these are for commercial shipping. In the Caribbean, most are used by cruise ships and sailing yachts.

What is the primary purpose of DFMPAs in the U.S.?

De facto MPAs in the U.S. have three major purposes: military, public health and safety, and private

and public infrastructure protection (see Box 5). Most DFMPAs (858) in the U.S. were established to protect public health and safety (Graph 4). A large portion of this area was established to allow oil and gas to be safely transferred in designated areas in the Gulf of Mexico, without harming public marine resources or risking harm to human health or safety. Other public health and safety DFMPAs include anchorage areas, traffic separation schemes and prohibited lightering areas. The military controls much of the remaining DFMPA area in the U.S. in 287 individual sites including in naval and air bases, target ranges, and mine laying and detection practice areas. A small portion of the nation’s DFMPA area protects public and private infrastructure. The U.S.S. Constitution and federal correctional facilities are two of the 89 individual DFMPAs that protect public and private infrastructure.

Who manages DFMPAs?

The U.S. Coast Guard, U.S. Armed Forces (e.g., Navy, Army, Marines, and Air Force), the National Aeronautics and Space Administration (NASA), the Environmental Protection Agency, the Army Corps of Engineers, the Federal Aviation Administration, and the Bureau of Prisons administer DFMPAs in the U.S.

The U.S. Coast Guard (Coast Guard) regulates more DFMPA area than any other management agency in the nation, yet regional exceptions exist (Table 3; Graph 5). For example, in New England, the West Coast and the Mid-Atlantic, the Coast Guard controls a majority of the DFMPA area. In these places, shipping is a central industry, with large sections of the coast dedicated to regulating the movement of commercial traffic. By contrast, in the South Atlantic, the U.S. Navy (Navy) and U.S. Air Force (Air Force) manage more DFMPA area than the Coast Guard, due in large part to the presence of some of the largest air and sea training areas in the U.S.

The Air Force plays a key role in managing DFMPAs nationally, but the amount varies considerably by region. For example, in the Great Lakes nearly 70% of the DFMPA area is controlled by the Air Force, most of which is contained in a single site, the Volk Field Air Force training area. In Alaska, the Air Force runs Shemya Island, Bristol

Bay and Blyling Sound Area, which are large fly zones where training and testing is conducted over the Bering Sea.

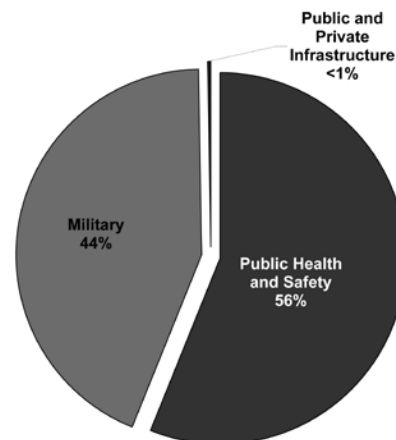
The Navy ranks third nationally in the total DFMPA area under its control, with most of this occurring in the South Atlantic and the Caribbean Islands. Many Navy sites are located in the outer reaches of the U.S. (e.g., Alaska, Pacific Islands, and Caribbean Islands).

The U.S. Army (Army) controls large ocean areas in the Caribbean and Pacific Islands. For example, Camp Tortugero in Puerto Rico is a small arms range, and in the Pacific, the waters around Kaena Point Light, Oahu are de facto MPAs, since the land is used for infantry and artillery training.

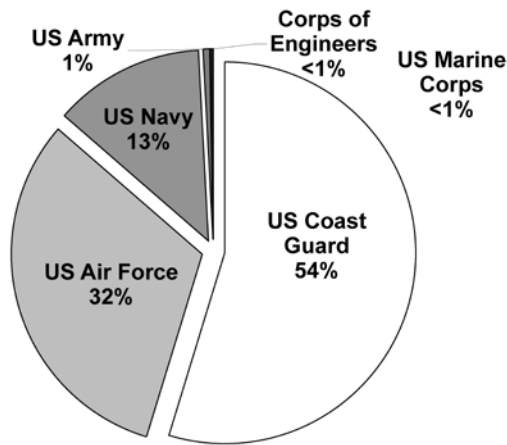
Other agencies manage a small portion of the nation’s DFMPAs. The U.S. Marine Corps (Marine Corps) controls part of the South Atlantic in a few large sites. This includes the New River Marine Corps firing ranges, Grey Point Sector and the Pamlico Sound and Neuse River. While NASA, the Environmental Protection Agency and Army Corps of Engineers manage several sites, these represent a tiny fraction of the nation’s total.

Can people access DFMPAs in the U.S.?

Contrary to the impression created by the sheer number and extent of DFMPAs, people can access and conduct many types of activities within most of the nation’s DFMPAs (Table 4; Graph 6). The vast majority of the DFMPA area in the U.S. is multiple use, where various forms of recreation, fishing and boating can occur. When restrictions on human activities exist, they are often minor and designed primarily to ensure safety for humans



Graph 4
Percent area of DFMPAs by primary purpose (% of national total).



Graph 5
DFMPA area by management agency (percent of national total).

and shipping. Frequently, restrictions within a given area are only temporarily instated (see Box 6). For example, within the shipping safety fairways vessels must take extreme caution and pay attention to the flow of traffic. While this may impede some activities, the area helps ships avoid collisions in high congestion areas.

Access is restricted in a small portion of the

Table 3
DFMPA area by region and management agency (percent of national total).

	Coast Guard	Air Force	Navy	Army	Marine Corps
New England	98	0	2	0	0
Mid-Atlantic	82	0	17	0	0
South Atlantic	2	34	59	0	4
Gulf of Mexico	65	30	6	0	0
Caribbean	4	0	60	36	0
Pacific Islands	10	0	24	65	0
West Coast	89	3	8	0	0
Great Lakes	27	70	<1	3.5	0
Alaska	16	64	20	<1	0

Note: Values in bold are the largest for each region. Other management agencies control an insignificant portion of the nation's DFMPA area.

Graph 6
DFMPA area by level of restriction (percent of national total).

U.S. DFMPAs on a year round basis. In fact, less than 1% of the nation's DFMPA area, for all regions except the Pacific Islands is no access year round. An extremely small total area, 1500 km², is off limits year round.

Some of the DFMPA area is closed to access, but on a temporary basis (3%). These areas are closed for brief periods of time during missile firing and during active combat fighting. For instance, at the Makai Undersea test range in Hawaii the area is closed to access only during periods when submersibles conduct test dives. This happens just a few times a year.

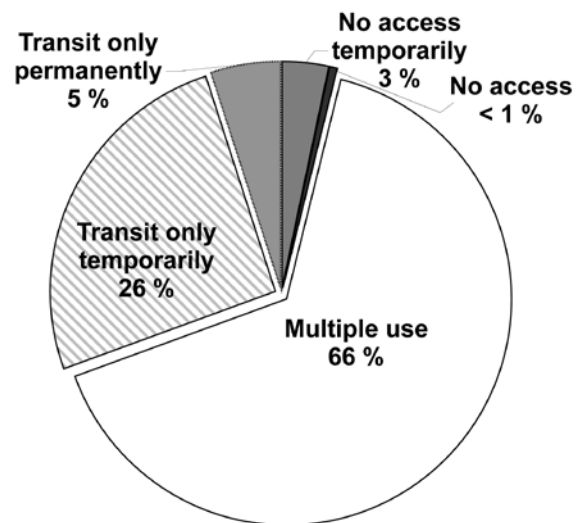
A small portion of the DFMPA area is transit only, but most of this is a temporary restriction,

with vessels allowed to pass through, but not to engage in activities. For example, within the San Diego Amphibious Base in California, people are not allowed to swim, fish, or water ski year-round. In contrast, in the Choctawatchee Bay danger zone in Florida, gunnery operations wait until no one is in the area. Vessels are, nevertheless, encouraged to move through the area quickly.

De facto MPAs may, however, result in harm to marine resources, since in some locations marine habitats are potentially damaged during rocket firing, target practice and ordnances are exploded underwater. It is difficult to assess the damage to marine resources in many of these cases, since these areas are used intermittently and long-term monitoring studies of the effects of such activities on marine resources have rarely been conducted. In many instances, several of the DFMPAs have been converted into marine protected areas for conservation purposes, contributing to the conservation of the nation's marine resources. The recent repositioning of thousands of overseas U.S. troops and stateside base closings or adjustments mandated by the 2005 Base Realignment and Closure Commission provided many opportunities for areas that were once managed (and functioned) as DFMPAs by the military to be converted into conservation areas. An example of such as an area is the Kahoolawe Island Reserve in Hawaii.

Is fishing restricted within DFMPAs in the U.S.?

Fishing is rarely prohibited within DFMPAs. However, it is often regulated, typically with minimal regulations. This allows recreational and



Box 6 Duration of Restrictions on Access

De facto MPAs vary in the duration of their restrictions from a few hours infrequently to 24 hours a day, 365 days a year. The permanence and constancy of the regulations controlling a specified area will affect the possible conservation benefit and impact on the public of those areas. Sites classified as

1. **Permanent Year-round** are de facto MPAs whose legal authorities restrict access or activities to a given area permanently, 365 days a year. Examples include nuclear power facilities, some naval bases, and some testing and targeting areas.
2. **Permanent Seasonal** are de facto MPAs whose legal authorities restrict access to a given area in perpetuity but only at predictable times of the year. Examples include some testing and targeting areas and some restricted areas. **Permanent Periodic** are de facto MPAs whose legal authorities restrict access to a given area in perpetuity but only at irregular, announced intervals throughout the year. Examples include many testing and targeting areas and some restricted areas. These types of DFMPAs are grouped together for reporting here. **Seasonal DFMPAs** are regularly activated during specific seasons, and then de-activated. **Temporary DFMPAs** are typically activated only during brief periods of time when they are being used. After operations are completed, these sites are de-activated.
3. **Lapsed or Uncertain** are areas that are still designated on charts but which have no current enforcement authority or are in the process of being de-listed. Examples include defunct targeting areas and decommissioned bases.



Map 3

Total area that is no access year round in DFMPAs in U.S. waters (0-200nm). The red square does not indicate the specific location of a particular DFMPA. Rather, it indicates the total no access year round area for all DFMPAs in the U.S.

	Multiple Use	Temporarily Transit Only	Permanently Transit Only	Temporarily No Access	Permanently No Access
New England	99	< 1	< 1	< 1	< 1
Mid-Atlantic	84	< 1	10	5	< 1
South Atlantic	3	73	< 1	22	2
Gulf of Mexico	69	36	< 1	< 1	< 1
Caribbean	< 1	13	< 1	86	< 1
Pacific Islands	5	< 1	< 1	66	28
West Coast	96	2	< 1	< 1	< 1
Great Lakes	23	< 1	70	7	< 1
Alaska	69	< 1	30	< 1	< 1

Table 4
Level of restriction of DFMPAs by region in the U.S. (percent area of national total).

Note: Bold indicates the greatest area for each restriction level in each region.

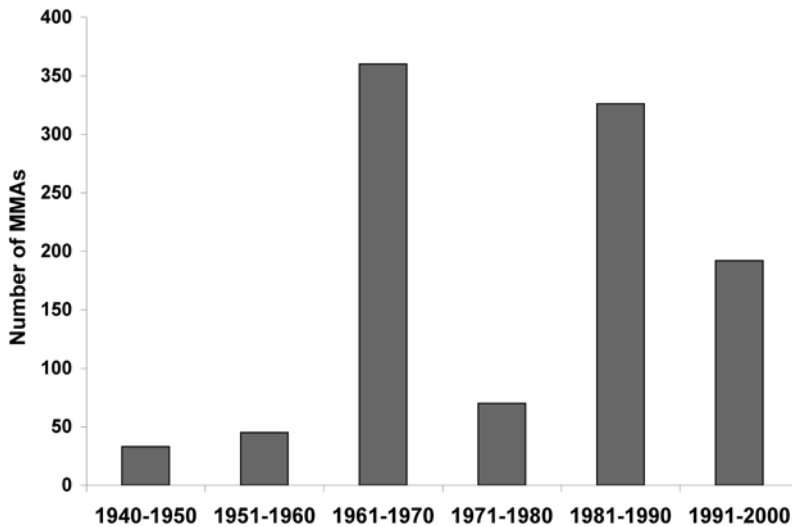
commercial boaters and fishermen access to these areas. Presently, more than 50% of DFMPAs have some type of regulation associated with fishing. Generally these regulations are enacted to provide safe navigation and shipping and are not specifically targeted at fishing. For example, inside most anchorage areas, the installation of a fishing structure underwater is prohibited. While this may preclude certain types of fishing, such as trapping, the regulation is intended to ensure that boats do not become entangled in submerged gear. In traffic separation schemes, fishermen are not allowed to place submerged buoys since large cargo ships may foul on these. Fishing can also be affected by the presence of a DFMPA indirectly. For example, in areas that are temporarily no access, fishing boats will be required to leave the area. They may return, however, after the military operations cease. Fishing occurs without any restrictions in nearly half the area set aside in DFMPAs.

1960s, followed by another sharp increase during the 1980s (Graph 7). One of the earliest sites is the Northerly Island danger zone in Chicago, Illinois, set aside in 1947 to keep vessels from interfering with air traffic originating from O'Hare Airport. During the 1960s and 1970s, a large number of anchorage grounds were established by the Coast Guard. Many of these were created around busy commercial ports, such as Miami, Los Angeles and New York. Relatively few sites were established during the 1970s, but this was followed by an increase in new designations during the 1980s. At this time, many traffic separation schemes, anchorage grounds, and shipping safety areas were designated around various ports and harbors. Sites established in recent years are primarily security, safety and restricted zones. John F. Kennedy Airport DFMPA in New York and Pilgrim Nuclear Power Plant DFMPA facility in Massachusetts are places designated in response to increasing concerns about public safety.

Graph 7
Number of DFMPAs by establishment date.

When were DFMPAs created?

The majority of DFMPAs were established in the



Is there overlapping jurisdiction of DFMPAs?

Sometimes, managed areas are designated in locations where another agency already has legal authority. When another layer of jurisdiction is placed in the same geographic location as the existing site, this is termed overlapping jurisdiction. Nationally, twenty percent of the DFMPA area overlaps existing DFMPAs. Most of this overlapping jurisdiction occurs in places where the Army, Corps of Engineers, and the Coast Guard both have legal jurisdiction over individual DFMPAs. The proportion of the total DFMPA area that overlaps existing sites varies from region to region (Table 5). The West Coast has, by far, the highest proportion of overlapping DFMPA area,

	Percentage Overlap
New England	<1
Mid-Atlantic	<1
South Atlantic	0
Gulf of Mexico	18
Caribbean	0
Pacific Islands	3
West Coast	49
Great Lakes	<1
Alaska	17

followed by the Gulf of Mexico and Alaska.

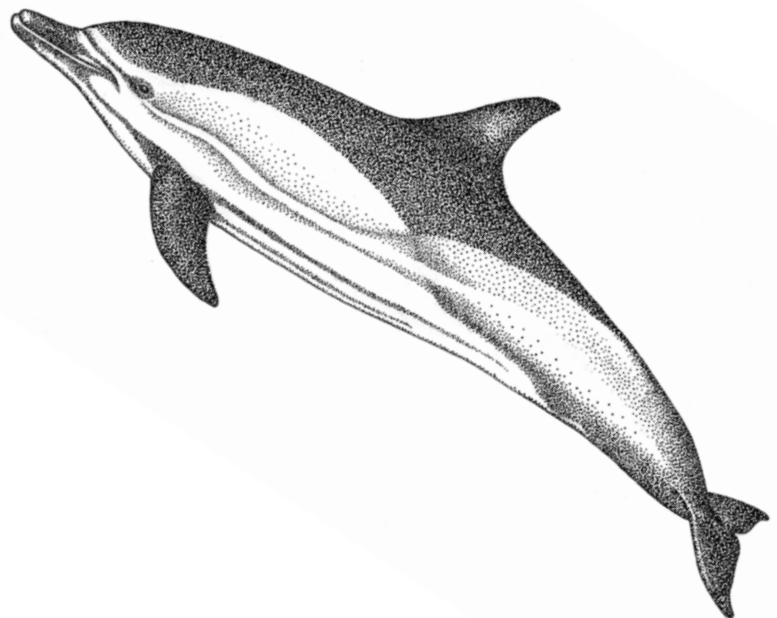
Summary

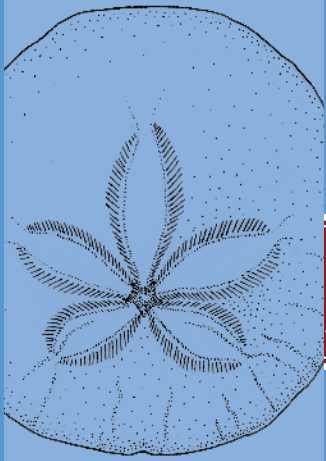
Many DFMPAs exist in the U.S., with more DFMPA area in the Gulf of Mexico and Alaska than in any other region. Nationally, DFMPAs cover more than 3% of our national waters (0-200 nm), and most were established in response to the need to protect human health and safety. These DFMPAs are distributed throughout the different regions of the U.S., with the major type of DFMPA varying by region, in order to accommodate the specific needs of a region. For instance, the Gulf of Mexico uses DFMPAs primarily for oil and gas transfer, the Mid-Atlantic uses DFMPAs for shipping safety, and the South Atlantic uses

DFMPAs to a large extent for military training areas. Since their purpose is generally focused on health and safety, human activities can take place unimpeded in most of this area. The actual degree of restriction in much of this area is minimal, and is intended to provide safe boating operations in areas with heavy congestion or military exercises underway. In total, only 1,500 km² is off-limits year round to human activities, an area roughly equivalent to the area set aside in “no take” or no fishing areas established for conservation purposes (Map 3).

Since the total DFMPA exceeds the area set aside for conservation, DFMPAs may contribute to marine conservation in the U.S. Many DFMPAs are located in near-shore habitats and coastal estuaries, areas that are critical habitat for many of our nation’s fisheries species. To understand their true conservation value, targeted assessments of their impacts to local ecosystems will be required. Such information will be useful for assessing the potential conservation benefits for developing a national system of MPAs (see www.mpa.gov). Incorporating DFMPAs into a wider network of MPAs could enhance their conservation benefits through interagency coordination and integrated management toward shared conservation goals.

Table 5
The proportion of overlapping DFMPA area for each region. Values are presented as percentages of each region’s DFMPA area.





REGIONAL PERSPECTIVES

The preceding information provides a national perspective of the state of the nation's DFMPAs. The rest of the document is divided into nine regions for the U.S. Islands often have relatively more regional waters for their small areal cover compared to continental regions, which has important consequences when comparing regional totals.

We report several facts for each region. First, we report the proportion of each region's DFMPAs relative to the total national area in DFMPAs. Then, all subsequent analyses are reported based on the total DFMPA area for that region. For example, the Gulf of Mexico contains 64% of the nation's entire DFMPA area. However, when statistics are reported on the type and management agency of DFMPAs within the Gulf of Mexico, those numbers are based solely on the total DFMPA area within the Gulf of Mexico region.

Graphs presented are based on the areal extent (km²) of DFMPAs. In all pie charts and bar graphs, the total number of individual DFMPAs is indicated in parentheses. The exception is when

level of restriction is reported. For each region, a table also indicates the number of individual sites per state. Because some sites overlap and others cross regional boundaries, these numbers do not always sum to the regional totals.

Within each regional section, a series of maps are presented with the name, location, type, management agency and allowable human activities for each DFMPA. Individual maps show the DFMPAs defined within the boundaries of that particular region only. Although DFMPAs from a neighboring region may be within the spatial extent of the map, only DFMPAs within the defined region being described will be displayed on the map. To reduce the number of classifications presented for type of DFMPA, several types were grouped into a single class. For example, all anchorage areas are grouped into the class anchorage, all traffic separation schemes, regulated navigation areas and shipping safety areas are grouped in the shipping safety area class and danger zones, restricted areas and security zones are grouped together.

Regional Waters

In this report, the U.S. is divided into nine regions. The area from 0-200 nm from the coastline is considered regional waters. The states and/or territories included in each region are:

Alaska: Alaska only

West Coast: Washington, Oregon, and California

Pacific Islands: Guam, Commonwealth of the Northern Marianas Islands, American Samoa, Hawaii and outer islands, Pacific Islands Territories. The Marshall Islands are not included.

Gulf of Mexico: Texas, Louisiana, Alabama, Mississippi, Florida

Caribbean Islands: Puerto Rico, Virgin Islands

South Atlantic: Florida, Georgia, South Carolina, North Carolina

Mid-Atlantic: Virginia, Delaware, Maryland, New Jersey, New York

New England: Massachusetts, Connecticut, Rhode Island, New Hampshire, Maine (Several New York sites extend into New England region.)

ALASKA'S DE FACTO MPAs



AT A GLANCE

- Primary purpose of DFMPAs is military
- Majority of area in DFMPAs is multiple use
- Danger zones make up vast majority of DFMPA area
- The Air Force controls most of this area
- Access is prohibited year round in an area smaller than 16 km².



Background

Alaska ranks second nationally in the total area established in DFMPAs (13% of the nation's total DFMPA area). Most of this DFMPA area is distributed in three large sites in western Alaska, although a cluster of individual sites occur south of Anchorage at the scene of the Exxon Valdez oil spill in Prince William Sound (Map 4). The remaining portions of Alaska's vast regional waters do not have any DFMPAs. Consequently, the total DFMPA area represents a mere fraction of Alaska's regional waters (<1%) in 31 individual sites.

Almost all of Alaska's DFMPA area was designated by the military for security and training purposes and to support the transport of oil from the oil fields of the far north to refineries in the continental U.S. The smallest DFMPA in the region is an Army loading dock in Lutak Inlet, and the largest is an Air Force training area in Bristol Bay, which is rarely activated. Most of Alaska's DFMPA area is open to various human activities, with only a tiny part of the regional waters off

limits on a year-round basis.

What types of DFMPAs exist in Alaska?

Most of the DFMPA area in Alaska exists in danger zones in three Air Force sites in western Alaska (Graph 8). These danger zones -- Shemya Island, Blying Sound, and Bristol Bay -- are rarely activated, and have not been used for many years.



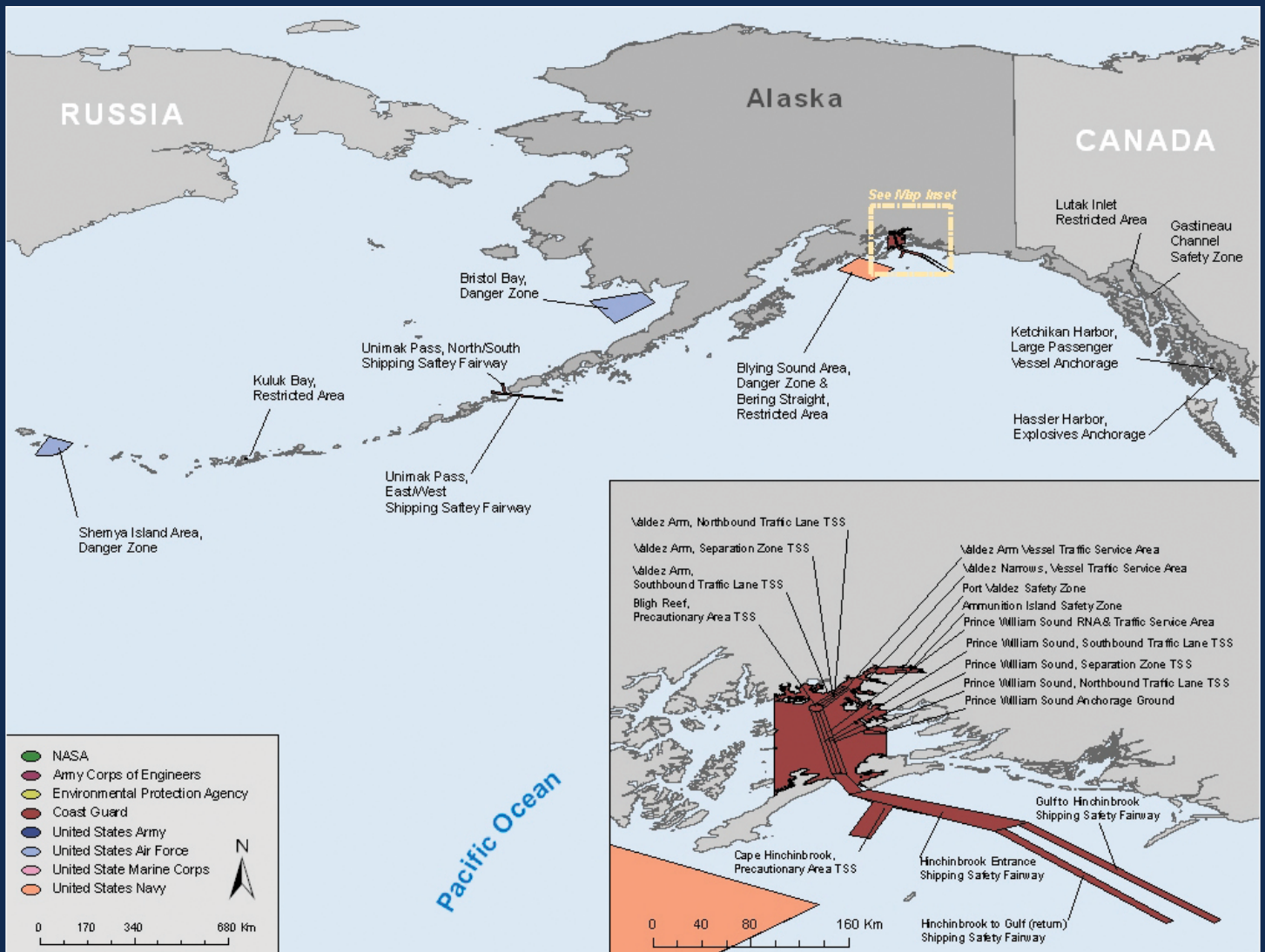
MAP BELOW:

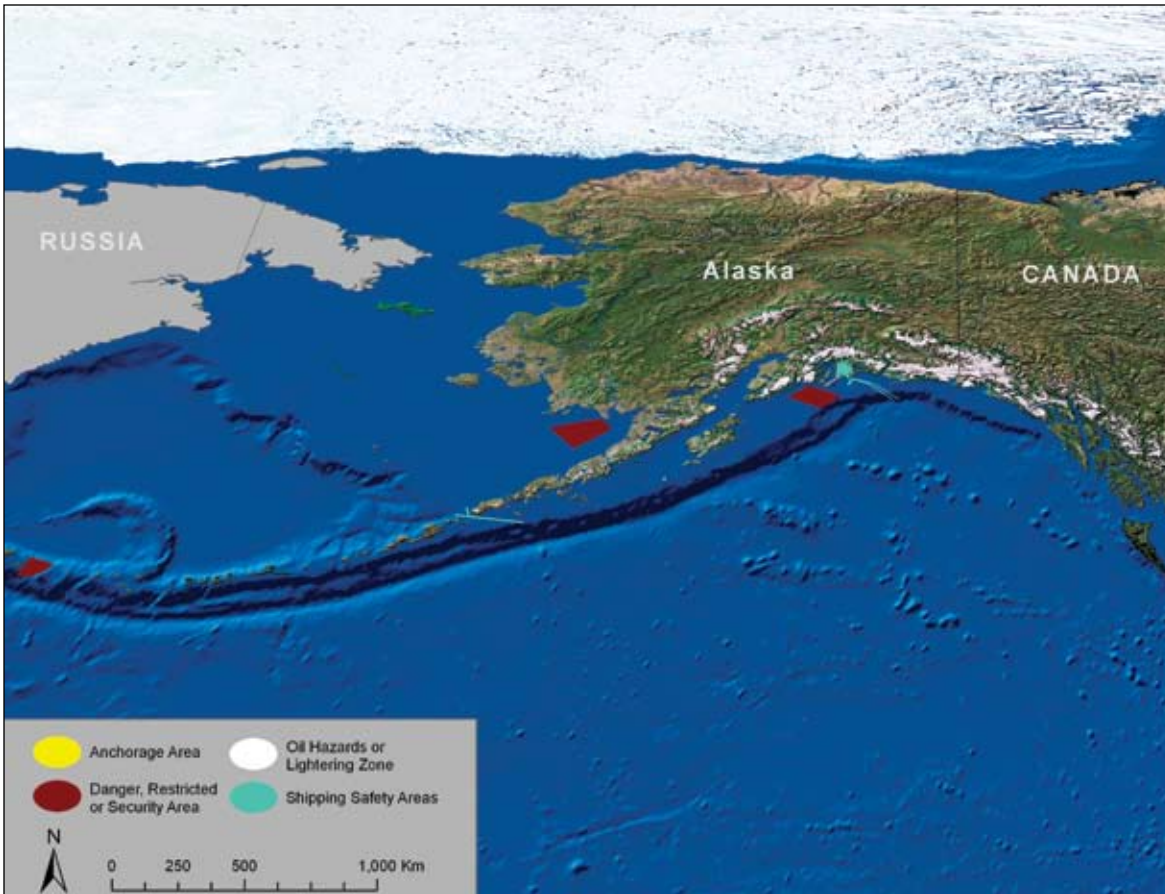
DFMPAs occur primarily in the western and southern portions of Alaska. Several danger zones and restricted areas (Shemya Island Area Danger Zone, Kuluk Bay Restricted Area) are located in western Alaska around the Aleutian Islands. The Unimak Pass shipping safety fairway is located off Unimak Island in the Aleutian Islands. Unimak Pass is the major connection between the North Pacific Ocean shelf and the eastern Bering Sea shelf. The largest concentration of DFMPAs occurs within Prince William Sound around the ports of Whittier, Cordova, and Valdez. Several vessel traffic service areas operate at the entrance of these ports within one large traffic separation scheme that regulates flow in and out of the Sound. The shipping pass for many vessels serves as an entranceway to Prince William Sound between Hinchinbrook Island and Montague Island. DFMPA anchorages are located in southeast Alaska within Ketchikan and Hassler Harbors.

SUMMARY STATS

- < 1% of regional waters
- 31 sites
- 13% of total U.S. DFMPA area
- 44,411 km²

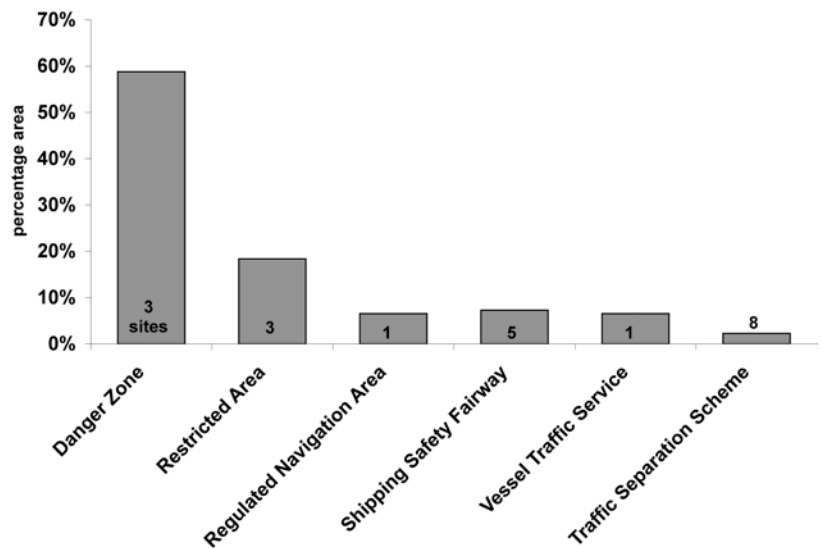
Map 4 DFMPAs by management agency in Alaska with names of individual sites.





Map 5
Types of DFMPAs in Alaska.

Graph 8
Types of DFMPAs in Alaska (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.



Other danger zones are intermittently used for supersonic training flights that simulate combat conditions for aircrews. The danger zones of Alaska are located far offshore because Air Force procedures require that, whenever possible, flights occur over open water, above 10,000 feet, and no closer than 15 miles from shore.

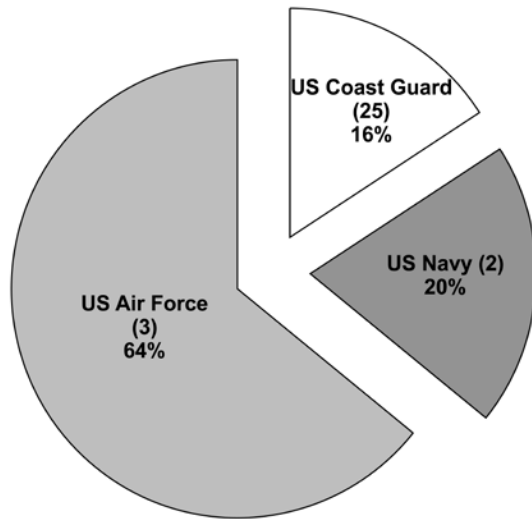
Although an equal number of restricted areas exist in Alaska, their total area is less than that of danger zones (Map 5). Lutak is a restricted dry cargo dock for the U.S. Army, and is off limits when tankers are discharging oil at the dock. Navigation, shipping safety areas and vessel traffic areas make up most of the remaining DFMPA area in Alaska (see Box 7). For example in Prince William Sound, an expansive traffic separation scheme helps prevent collisions by separating tankers into opposing streams of traffic.

Who manages DFMPAs in Alaska?

The Air Force controls most of the DFMPA area in Alaska (Graph 9) in three large danger zones located between Russia and Alaska. Within Blying Sound, annual military campaigns operate

training in the area, but do not typically impede use of the area. Another danger zone is Bristol Bay, home to one of the world’s most productive commercial fisheries. The Alaska Department of Fish and Game regulates fishing in this area, and commercial sockeye fishing is conducted in the summer largely unaffected by the infrequent use

Graph 9
Alaska DFMPA area by management agency (number and percent area). The number of sites is indicated in parentheses.



of the area for firing practice from vessels.

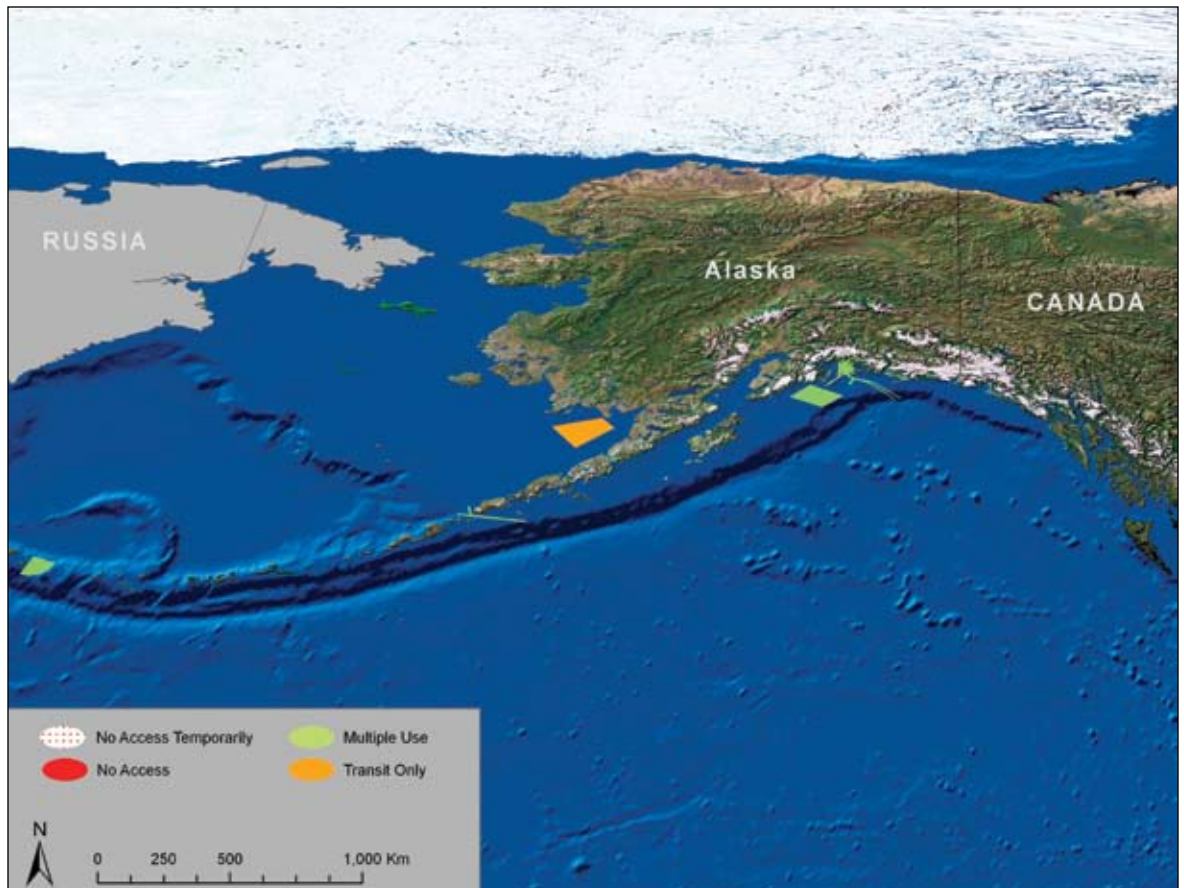
The Navy manages two sites in Alaska which comprise 20% of the total DFMPA area of Alaska (Graph 9). Kuluk Bay and Bering Strait restricted areas provide security for naval operations in the Bering Strait and protect the public from the risks of damage or injury arising from military operations by prohibiting or limiting public access.

The Coast Guard manages more individual DFMPAs in Alaska than any other agency, with 25 sites. Most of these DFMPAs are in southern Alaska and are associated with a network of shipping lanes, anchorage areas and traffic separation schemes that help avert disaster in the area surrounding Prince William Sound. The Aleutian Islands also have a series of shipping lanes around Unimak Pass. To support the growing tourism industry, a deep water cruise ship anchorage area was designated in Ketchikan harbor.

Can people access DFMPAs in Alaska?

Human activities can be conducted at all times within most (69%) of Alaska’s DFMPA area (Graph 10; Map 6). The bulk of DFMPAs that are multiple use lie in the Prince William Sound Traffic Separation Scheme, a large navigation area divided into four parts. All of the vessel traffic separation schemes and the shipping safety fairways in Alaska are also multiple use. For example, the Hinchinbrook shipping safety fairway is located in the busy tanker freeway system along Alaska’s west

Map 6
Level of restriction of DFMPAs in Alaska.



Box 7 Alaska's Unimak Pass Traffic Separation Scheme

The stranded Malaysian cargo ship Selendang Ayu sits in shallow water off the northern shore of Unalaska Island in the Alaska Maritime National Wildlife Refuge. The vessel has been there since it lost power, ran aground and broke in half on December 8th, 2004. Six crew members were killed and in excess of 300,000 gallons of oil poured into the Bering Sea. Clean up and recovery efforts were halted for 3 months, shortly thereafter, due to inclement weather. Reports indicate that over 1600 birds were oiled with a projection of 10,000 plus sea birds expected dead. The Selendang Ayu was traveling one of the most heavily trafficked shipping routes in the world. It cuts along the Pacific Ocean's "Great Circle Route" through the Aleutian Islands, where every year several thousand ships take the shortest, but most dangerous route between U.S. and Asia ports. The Unimak Pass Shipping Safety Fairways were designated in this area to avoid such accidents.

coast. Here, a world-class tanker escort system with two high-powered tugs accompanies laden tankers through the Prince William Sound, but there are no restrictions on other vessels in the area other than those that ensure the safe movement of these large tankers through the area. The Valdez Arm Northbound and Southbound Traffic lanes are part of this commercial network of shipping to transport oil out of the Alaska.

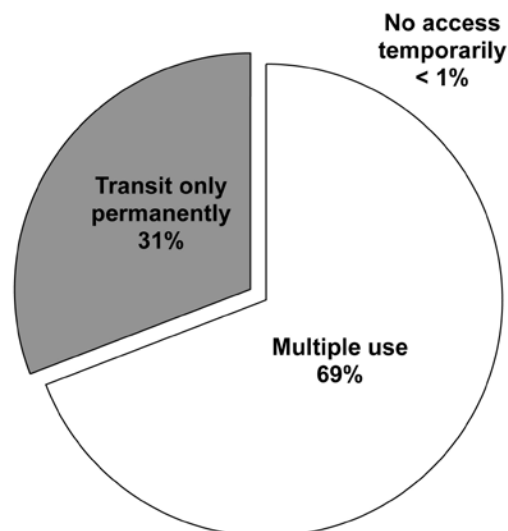
About one third of Alaska's DFMPA area (31%) allows transit only of vessels throughout the entire year. Practically all of this transit only area (99%) occurs in Bristol Bay, where commercial salmon fishing is allowed in important production zones nearby. Management is designed to reduce any adverse impacts on the fishery, and during inactive periods, human activities occur without restriction.

There are only five DFMPAs where access is prohibited in Alaska's regional waters year-round, and these are each extremely small (not visible on Map 6). Their total area is only 16 km², making Alaska the region with the second least amount of area in year-round no access, comprising less than 0.00001% of its regional waters (0-200 nm) (Map 7). Four of these sites are associated with oil spill prevention at Valdez. One shallow section of Gastineau Channel is no access due to the threat of running aground. The remaining areas occur in a single habitat type, which has been subjected to severe ecological damage due to large quantities of crude oil spilled in 1990 at Valdez. Ongoing assessments of the marine ecosystems at this and other DFMPA sites will provide valuable information on their potential contribution to

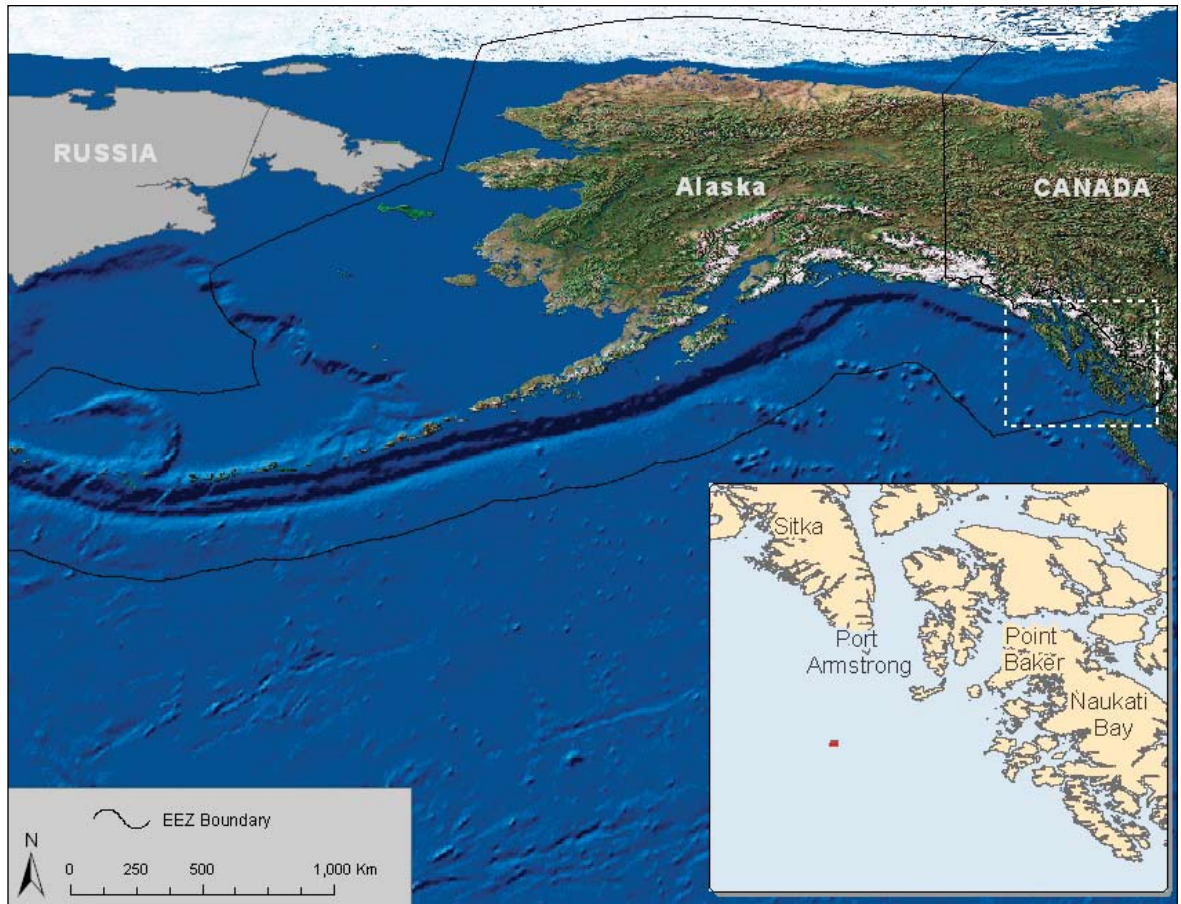
conserving marine resources in Alaska. The remaining no access site is the safety zone at Ammunition Island, Port Valdez. Designated by the U.S. Department of Homeland Security, the area within 200 yards of any waterfront facility at the Trans-Alaska Pipeline Valdez Terminal complex is off limits except to authorized personnel. These regulations are intended to reduce the risk of terrorist attacks.

Summary

Alaska ranks second nationally in the total DFMPA area established within its regional waters. Much of this area occurs in a few large, rarely used sites. These areas remain in the CFR in case the armed forces need a location to practice critical military operations. Much of the remaining DFMPA in Alaska supports the transport of oil and other resources out of the region through



Graph 10
Alaska DFMPA area by level of restriction.

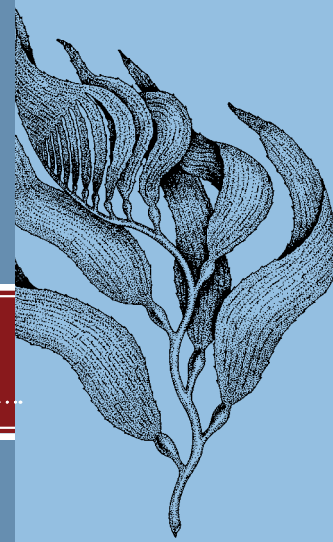


Map 7
 Aggregate no access year round DFMPA area in Alaska. Red dot does not indicate the location of a specific DFMPA. Rather, it indicates the total no access year round area for all DFMPAs in Alaska.

the establishment of shipping safety channels and marine highways with regulations designed to ensure safe maneuvering. The majority of the area is open access, with restrictions on the placement of submerged equipment that could endanger shipping. A very small amount (16 km²) is no access year round.



WEST COAST DE FACTO MPAs



AT A GLANCE

- Primary purpose of DFMPAs is to help regulate vessel traffic and provide safe anchoring
- Almost the entire West Coast DFMPA area is open to commercial and recreational uses
- The Coast Guard controls most of this area
- Access is prohibited year-round in a total area of 200 km², an area roughly the size of San Francisco



Background

The West Coast has the second largest number of DFMPAs (274) in the nation, comprising 6% of West Coast waters. Almost all of this is situated next to some of the nation's busiest commercial ports in the Puget Sound, San Francisco Bay, and Long Beach harbor (Map 8a–c). Here, forest products and bulk goods are shipped to the Pacific Rim (Box 8), so large commercial tankers and cargo vessels need space to operate safely without collision or danger to recreational boaters. These cargo terminals typically occur where large estuaries of eelgrass, seagrass, and productive shellfish and fisheries once thrived. San Francisco Bay historically supported an extraordinarily diverse and productive ecosystem that sustains rich communities of clams, mussels, fish, birds and other aquatic life. The region includes wintering sites for migrating waterfowl and spawning sites for migrating fish in the same waters where millions of dollars worth of commercial products are transported in and out of the country.

California has the greatest number (226) of DFMPAs compared to Washington and Oregon (see Table 6). Large sections of the west coast do not have DFMPAs, particularly off Oregon and northern California. While a cluster of navigation sites occurs off Seattle and San Francisco harbor, several DFMPAs are dispersed around the Channel Islands, Los Angeles and San Diego. The smallest is the San Diego Harbor, Naval Degaussing Station, and the largest is the vessel traffic service area off Puget Sound in Washington. DFMPAs in the West Coast rarely affect the use of marine habitats off the West Coast, with most areas serving as precautionary areas for merging tanker traffic.

	Number of DFMPAs
Washington	38
Oregon	10
California	226

Table 6
Number of DFMPAs by state

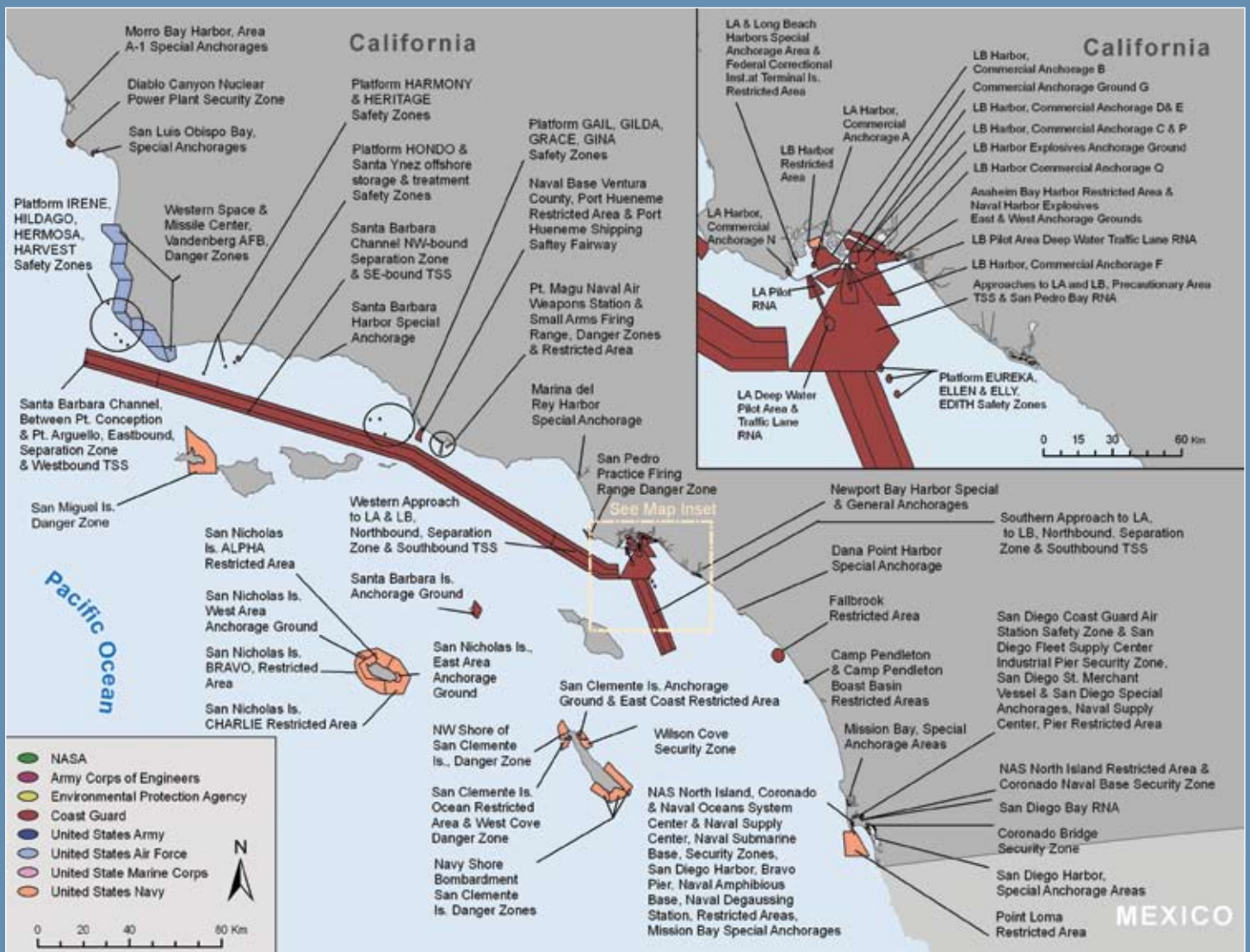
MAPS BELOW:

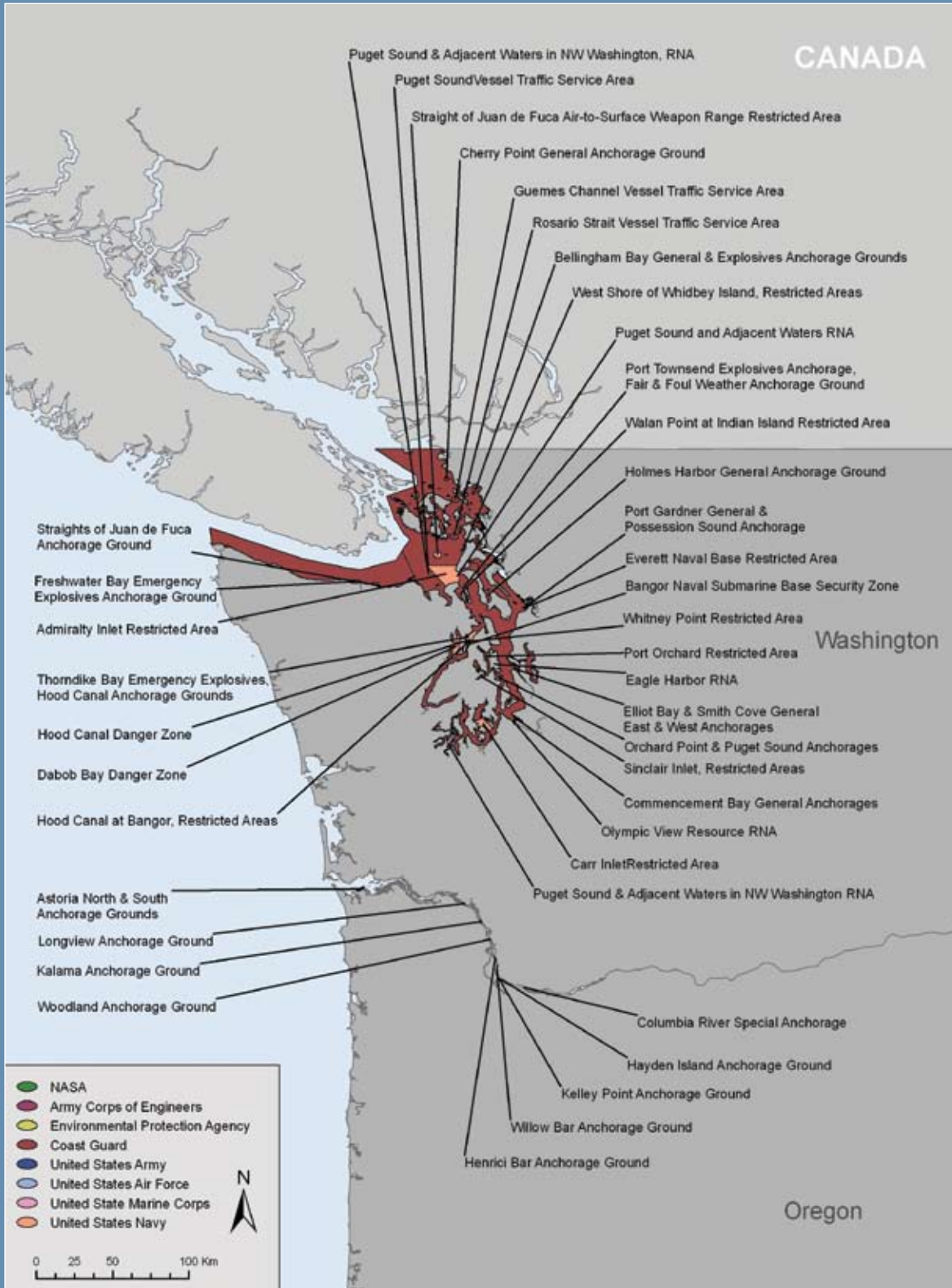
DFMPAs are located along the West Coast region from Washington to California. In the northern portion of the region, DFMPAs are distributed primarily within Puget Sound, where DFMPA anchorages are designated to provide safe harbor for large military vessels. A few DFMPAs occur along the Oregon shore of the Columbia River such as Willow Bar, Kalama, and Longview anchorages, but there are no DFMPAs on the Washington side. Moving south from Oregon, there are no DFMPAs until the entrance of San Francisco Bay. Here, a series of traffic separation schemes at the entrance to San Francisco Bay form an arc and vessels approaching from the south, west and north are directed beneath the Golden Gate Bridge. Within San Francisco Bay, DFMPAs cover most of the area to the south of San Francisco towards San Jose, and several extend north into the Sacramento River. The only other DFMPAs in northern California are in Monterey Bay. In southern California, the approach to Long Beach harbor along the Santa Barbara channel has several DFMPAs, which form a long narrow strip for safe navigation of large vessels. DFMPAs also occur around several of the Channel Islands and San Diego harbor. Point Loma restricted area is the close DFMPA to the Mexico border.

SUMMARY STATS

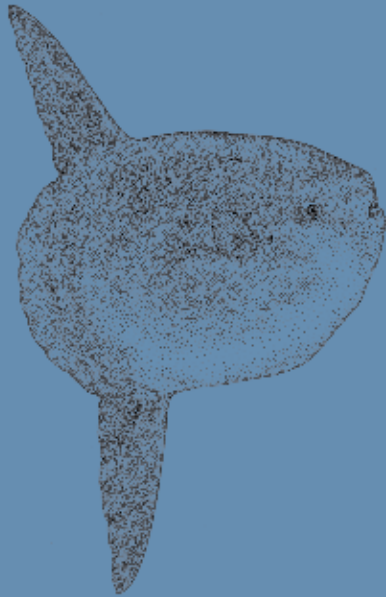
- 2% of regional waters
- 274 sites
- 6% of total U.S. DFMPA area
- 30,547 km²

Map 8a DFMPAs by management agency in the West Coast region with names of individual sites.

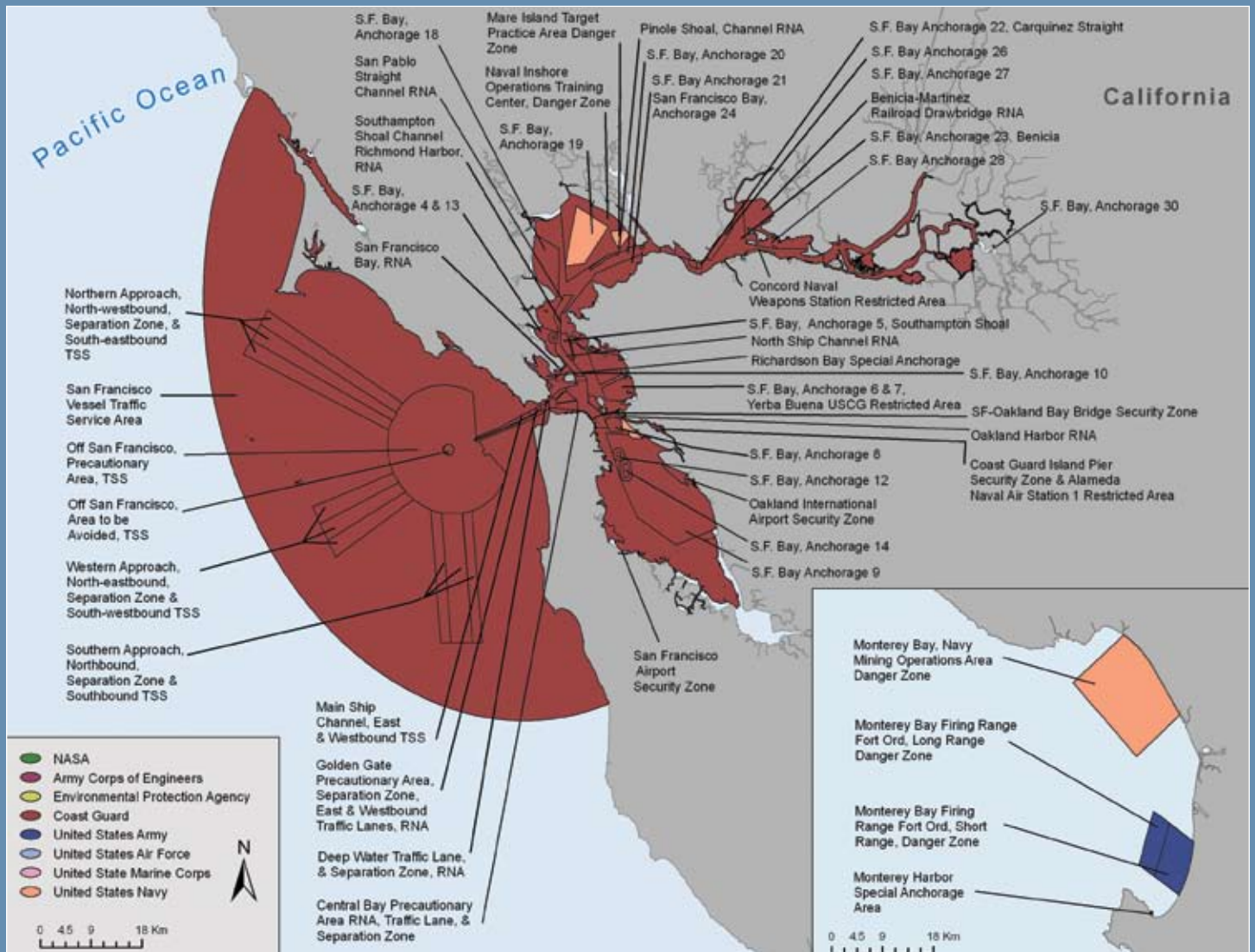




Map 8b
DFMPAs by management agency in the West Coast region with names of individual sites.



Map 8c
 DFMPAs by manage-
 ment agency in the
 West Coast region with
 names of individual
 sites.

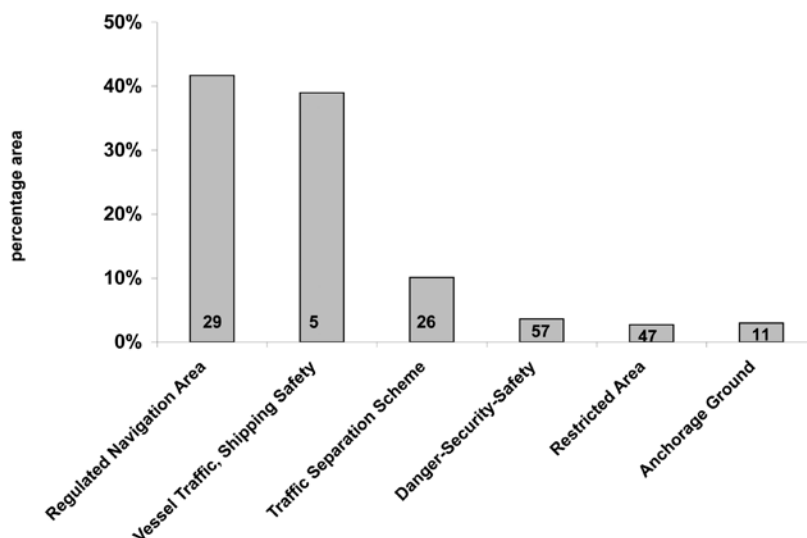


What types of DFMPAs exist in the West Coast?

Most of the DFMPA area in the West Coast (90%) was created to help ships navigate, avoid collisions, and move quickly and economically through the busy ports and harbors (Graph 11). Regulated navigation areas, vessel traffic service areas and traffic separation schemes (all methods for dealing with the large volumes of cargo tankers in the area) together make up the bulk of the DFMPA area (Maps 9a–b). The largest of these occur off of Puget Sound and around San Francisco and Los Angeles.

An assortment of regulation navigation areas connect the southern, western and northern approaches to the entrance of San Francisco Bay before the Golden Gate bridge. Guemes Channel off Anacortes, Washington and Rosario Strait near Bellingham are two large vessel traffic service areas in Puget Sound. The traffic separation schemes off Santa Barbara, Los Angeles and San Francisco are also large. These traffic channels help avoid shipping collisions and also keep ships away from the scores of oil platforms.

There are many danger zones (25), restricted areas (47) and anchorages (69) along the West Coast, but these types of DFMPAs are typically small. Many of these occur around bridges, industrial



piers, Coast Guard Stations and Navy Bases. All of the oil platforms off Santa Barbara, California are restricted areas, as is the Exxon Santa Ynez offshore storage and treatment facility for safety and environmental purposes. Anchorages are the single most numerous type of DFMPA along the region, with various types off of Long Beach, Santa Barbara, Newport, Astoria, Port Townsend, Bellingham, and Seattle.

Graph 11
Types of DFMPAs in the West Coast (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.

Who manages DFMPAs on the West Coast?

Since the Coast Guard oversees most areas that



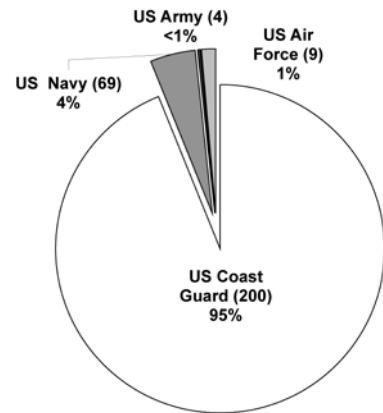
regulate vessel traffic and anchoring, it is not surprising that they manage most of the DFMPA area on the West Coast (Graph 12). Currently, 200 individual sites, including anchoring, navigation, vessel traffic areas, and security zones are managed by the Coast Guard. The most common type is anchoring sites, many of which provide anchoring basins for large commercial fleets. San Francisco Bay is dotted with over 30. Special anchorage grounds are also designated in Newport Bay, Morro Bay, and the Columbia River, but these are extremely small in size, and barely visible on Maps 9a and b. The Coast Guard also oversees some security zones, such as the San Diego Coast Guard Air Station and Diablo Canyon Nuclear Power Plant.

Graph 12

West Coast DFMPA area by management agency (number and percent area). The number of sites is indicated in parentheses.

Map 9a

Types of DFMPAs in the West Coast region in 69 West Coast region.



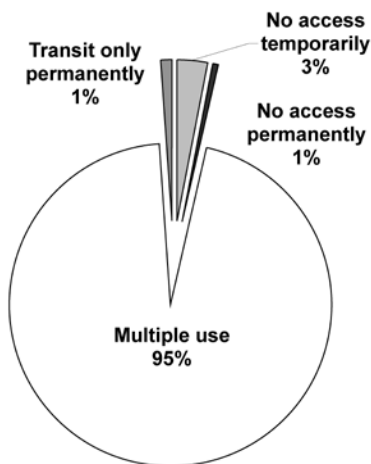
individual sites. Many of these are large danger zones, such as Mare Island Target Practice area, used for test firing. In addition, a handful of smaller anchorage areas are controlled by the Navy. These tend to be small and close to shore. The Everett Naval Base in Washington is home to several Navy aircraft carriers and is designated as a restricted area. Other sites managed by the Navy include Anaheim Bay Harbor, San Miguel Island, and Bangor Naval Sub Base.

The Air Force has a single site on the west coast, the Western Space and Missile Center, Vandenberg AFB, which has nine individual zones. All of these are danger zones, and some are quite large. These appear on Map 8a as a light blue cluster just north of the Channel Islands, on the Southern California coast. The West Coast has a few sites administered by the U.S. Army (Ft. Ord) and the Bureau of Prisons (Terminal Island).

Can people access DFMPAs in the West Coast?

Almost the entire DFMPA area (95% of DFMPA area) of the West Coast is open to most commercial and recreational uses (Graph 13; Maps 10a–b). Typically, only those activities that obstruct the movement of vessels are restricted. For instance, no permanent structures are allowed in many of vessel traffic and anchoring areas. Most anchorages are open to many types of activities, as long as they don't interfere with safe anchoring and navigation (see Box 8).

A small fraction of the DFMPA area on the West Coast is transit only, such as Hood Canal and San Pedro practice firing ranges. Transit



restrictions only apply during training operations. A few places, such as Coronado Bridge security zone, are transit only year-round to safeguard against terrorist activities.

Access is completely prohibited in a tiny portion of the West Coast DFMPA area and the bulk of this a temporary prohibition. Some anchorage grounds, such as Port Townsend Explosives Anchorage Fair Weather Area restrict access because explosives are used periodically. The Strait of Juan de Fuca Air-to-Surface Weapon Range in Washington is seasonally no access. However, the West Coast has more sites (49 DFMPAs) that are no access year-round than any other region in the U.S., though the area these sites cover is relatively small. Only 200 km² of DFMPA area is off limits to the public year-



Graph 13 (Above L) West Coast DFMPA area by level of restriction.

Map 9b (Above R) Types of DFMPAs in West Coast region.

Box 8 West Coast: The Gateway to the Orient

Substantial volumes of crude oil and petroleum products are transported off the California coast from Alaska, from foreign countries, and between California production sources. The Los Angeles/Long Beach and San Francisco Bay harbors include some of the highest volume oil importing ports and refining facilities in the United States. Collisions or ship groundings off the California coast, or within its congested ports or harbor areas, sometimes occur. The most recent major vessel collision off the California coast occurred in 1987 when the Atlantic Wing (a car carrier) and the Pac Baroness (a dry bulk carrier) collided off Point Conception, sinking the Pac Baroness. The spill of fuel oil was relatively small, but a cargo of toxic copper pellets went down with the ship. The decade of the 1990's began with two major spills in Southern California. The tanker vessel American Trader grounded on its own anchor during mooring operations at the Golden West marine terminal off Huntington Beach, causing an oil spill which affected a substantial portion of the Orange County coastline, but gained even more notoriety because it occurred within months of the tanker vessel Exxon Valdez grounding in Alaska.



Map 10a
Level of restriction of
DFMPAs in West Coast
region

round and most of this occurs in isolated small safety zones, many of which are oil platforms in southern California. Several others are located on shore, with small portions of marine habitat that are off limits to provide a buffer around restricted areas and danger zones such as Alameda Naval Air Station, Camp Pendleton Boat Basin, and Everett Naval Base.

Summary

The West Coast ranks fourth in the amount of area contained within DFMPAs. These areas have been established mainly for military training and shipping transportation, and most are clustered in southern California and the Pacific Northwest. As in other regions, fishing and other activities are impacted mainly by restrictions on the placement of permanent underwater buoys, platforms or gear. Such gear would potentially foul the

propeller of large cargo vessels, creating hazards to navigation. Almost all of the DFMPA area within the West Coast region is available for use. In fact, the total amount of area (200 km²) that is no access year-round in DFMPAs is quite small (Map 11). These areas are concentrated in Southern California, around the Channel Islands and Ft. Ord. In September of 1994 Fort Ord closed its gates and became part of U.S. military history. Ongoing assessments of the marine habitats in the areas where live artillery practices occurred will reveal the condition of marine resources in these danger zones. Such assessments will be valuable in understanding the contribution of DFMPAs to the conservation of marine resources in the U.S.



Map 10b (Above)
Level of restriction of DFMPAs in West Coast region.



Map 11 (Below)
Aggregate no access year round area in the West Coast. Red dot does not indicate the location of a specific DFMPA. Rather it indicates the total no access year round area for all DFMPAs in the West Coast region.



GULF OF MEXICO DE FACTO MPAS



AT A GLANCE

- The Gulf Coast has more DFMPA area than any other region with **24%** of the regional waters in DFMPAs in 217 individual sites
- Vast majority of this is in oil transfer areas
- Almost the entire Gulf Coast DFMPA area is open to commercial and recreational uses
- Coast Guard manages most of the DFMPA in the Gulf of Mexico
- Considerable portions are for transit only during training and military operations; when these activities do not occur boaters are free to use the DFMPAs

Background

The Gulf of Mexico has more DFMPA area set aside than any other region in the U.S. (64% of the nation's DFMPA area). Close to a quarter of the Gulf of Mexico regional waters are designated in DFMPAs. This vast area, which exceeds 200,000 km², occurs in 217 individual sites, most of which is dedicated to servicing the oil and shipping industries of the region. The Gulf is home to seven of the Nation's busiest ten ports. Sixty percent of all of the U.S. oil imports are delivered through the Gulf of Mexico, and its shipping

lanes are filled with large oil tankers, tug barges, and service vessels that work 24 hours a day to move oil safely and efficiently. DFMPAs occur off the coast of every state (Table 7), creating a maze of anchorages, shipping channels, and traffic lanes connected to one another and to each of the major ports in Texas, Louisiana, and Florida.

Table 7
Number of DFMPAs
by state in the Gulf of
Mexico.

	Number of DFMPAs
Texas	67
Louisiana	74
Mississippi	11
Alabama	8
Florida	57



Most of the area in DFMPA in the region occurs in lightering areas (for transferring oil and gas) and danger zones off the coasts of Texas, Louisiana, and Florida, within some of the most productive shellfish and fishery grounds in the Gulf of Mexico. The largest DFMPA in this region is the Guided Missile Test Operations Area

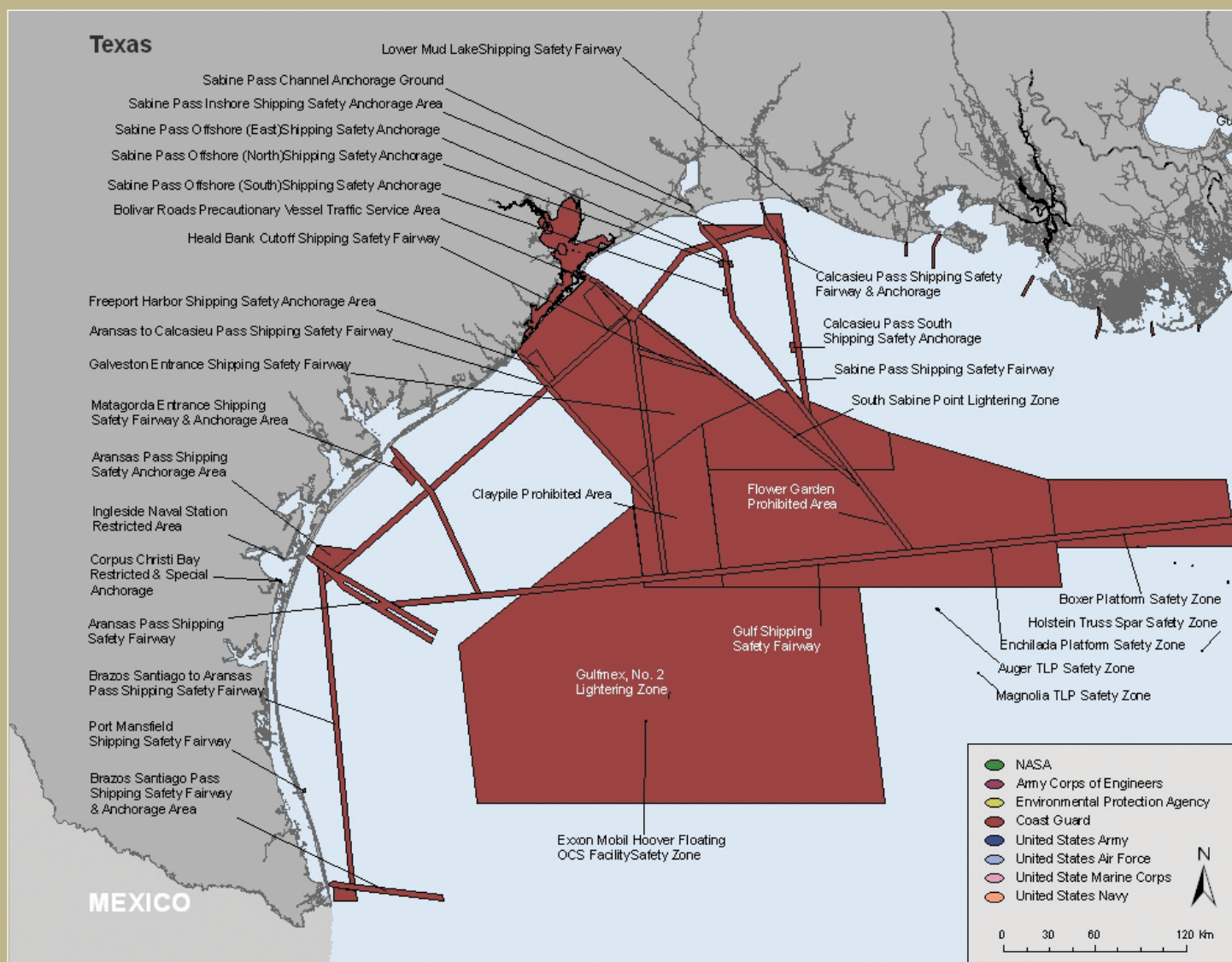
MAPS BELOW:

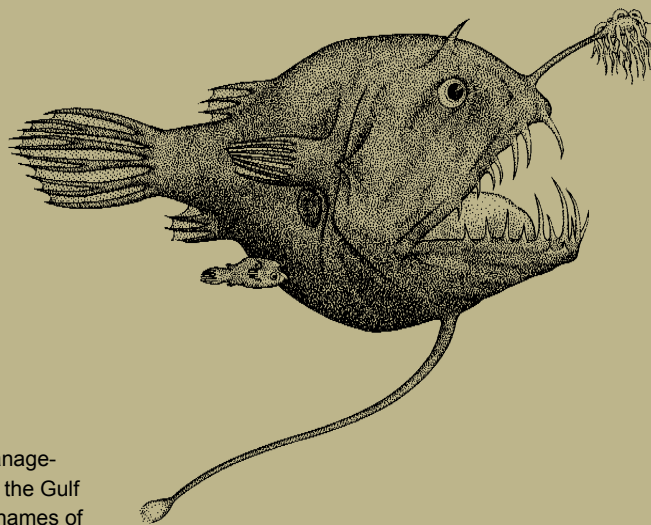
DFMPAs are located throughout the Gulf of Mexico, occurring from the Mexico border in the southwest to the Florida Keys in the southeast. Brazos Santiago Pass shipping safety fairway is found along the western Gulf of Mexico. A long thin arc of shipping DFMPAs link Brownsville, Corpus Christi and Galveston, Texas in the nearshore waters. Offshore from these industrial harbors, large lightering DFMPAs occur. Vessel traffic service and anchorage DFMPAs cover the majority of Galveston Bay, extending up toward Houston, Texas. To the south and east, lightering DFMPAs are located off the coast of Texas and Louisiana. Off the southern coast of Louisiana, a network of DFMPAs including Southwest Pass to Gulf shipping safety fairway occur tens of kilometers offshore. In this area, multiple safety zones were established around oil platforms. Continuing eastward the shipping safety fairway extends past Alabama into the panhandle of Florida along the coastlines of Pensacola and Panama City in the panhandle of Florida. Here, the arc of shipping safety fairways ceases. Moving south from Panama City, several large military DFMPAs associated with Eglin Air Force and Tyndall Air Force Base occur. Along the western shores of the Florida peninsula, multiple DFMPAs are located in association with Tampa Bay, and Key West Air Force and Naval Training Facilities.

SUMMARY STATS

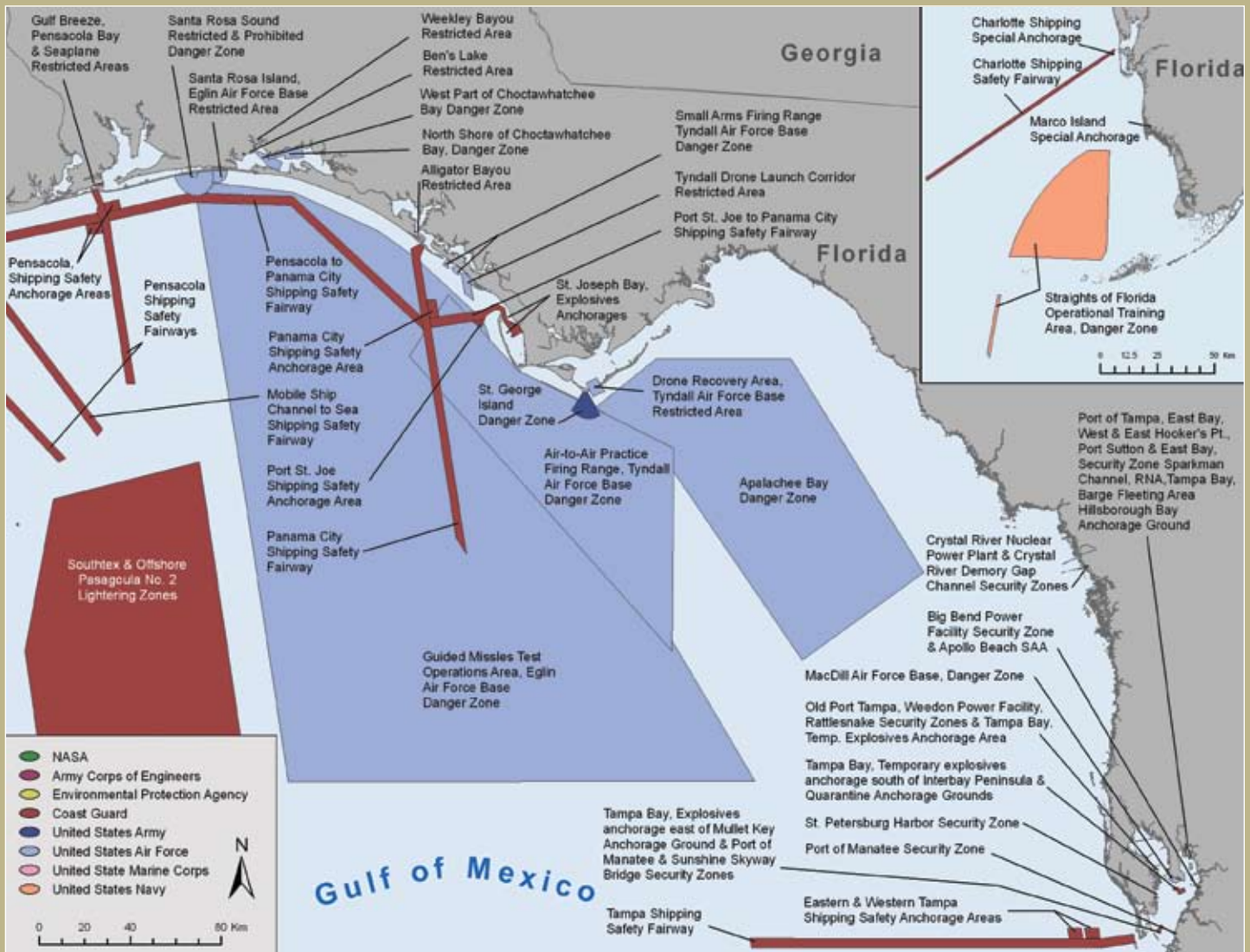
- 24% of regional waters
- 217 sites
- 64% of total U.S. DFMPAs
- 200,000 km²

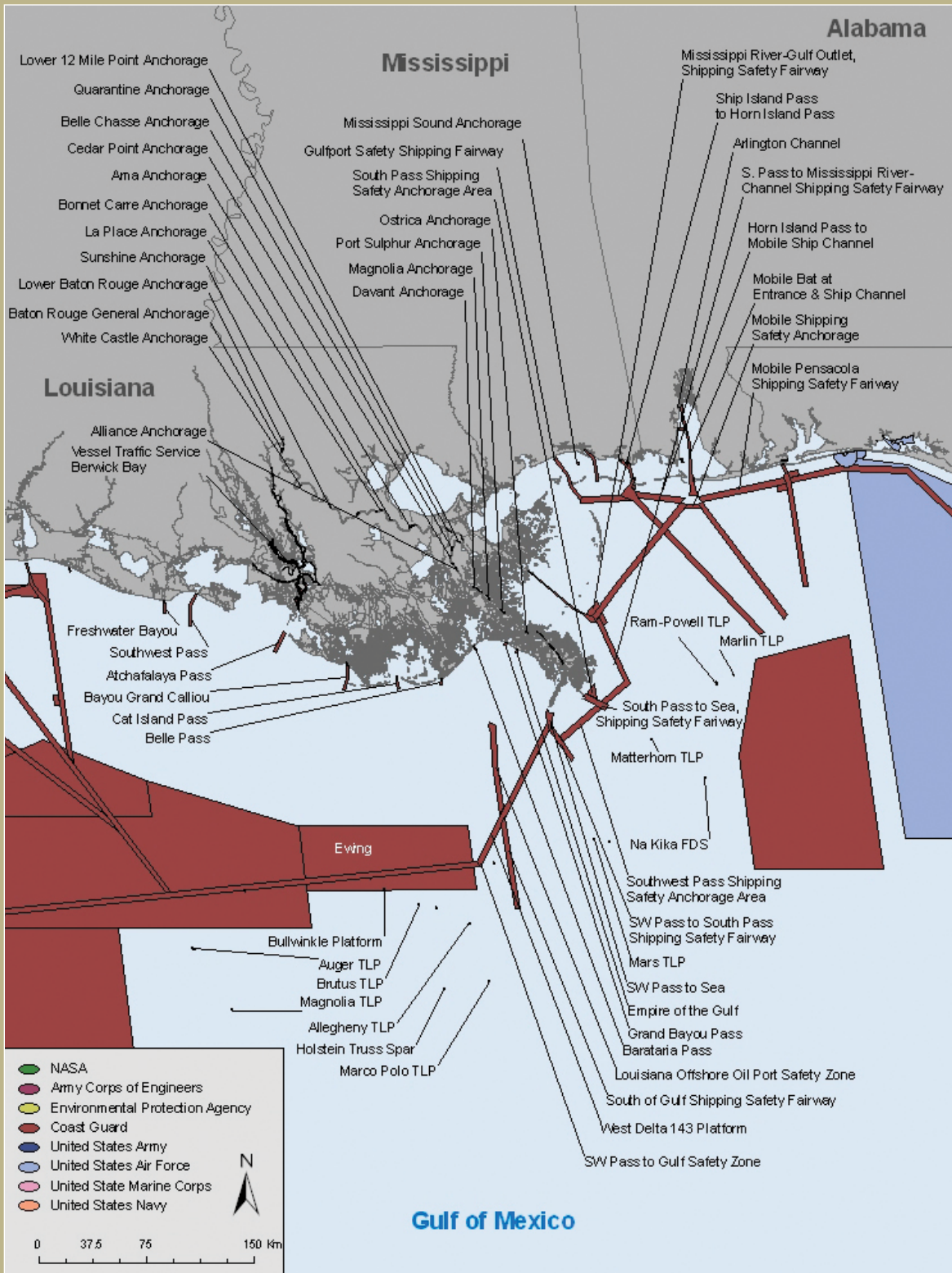
Map 12a DFMPAs by management agency in the Gulf of Mexico with names of individual sites.





Map 12b
DFMPAs by management agency in the Gulf of Mexico with names of individual sites.





Map 12c
 DFMPAs by management agency in the Gulf of Mexico with names of individual sites.

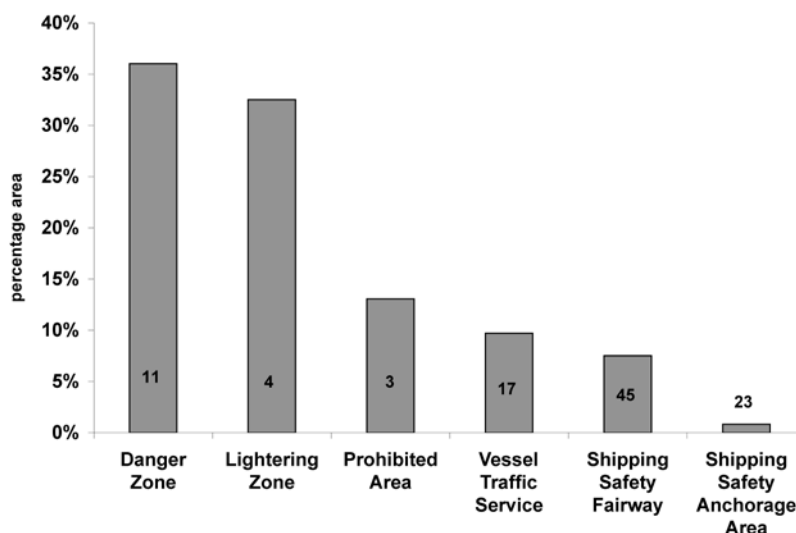
of Eglin Air Force Base, and the smallest is the Rattlesnake security zone in Tampa (see Box 9).

Twenty percent of the DFMPA area in this region overlaps with other DFMPAs, more than any other region in the U.S. The sites that overlap are managed by the Army Corps of Engineers and the Coast Guard, and most are shipping areas.

What types of DFMPAs are in the Gulf of Mexico?

Danger zones are a dominant feature in Gulf of Mexico (37%), making up more area than any other type of DFMPA (Graph 14; Map 13). There are 11 individual danger zones, several of which are very large. For example, the largest DFMPA in the Gulf is the Air Force Guided Missile Test Operations Area, part of Eglin Air Force Base. Danger zones in the region are clustered near Florida’s panhandle, where several large military bases are located for training fighter jet and helicopter pilots.

The four lightering zones off Texas and Louisiana make up a considerable portion (33%) of Gulf of Mexico DFMPAs. One such lightering area, Gulf-Mex #2, is the second largest DFMPA in the Gulf. Lightering areas are staging areas for oil tankers, tugs, and barges that actively service the region’s oil refineries. Prohibited areas indicate where lightering is not allowed, and were designated to protect the deep-sea coral and sponge communities found in the region. Only three prohibited areas exist in the U.S. (Claypile,



Flower Garden and Ewing), and all are located in the Gulf of Mexico, including one at Flower Gardens National Marine Sanctuary.

There are 17 relatively large vessel traffic service areas and 45 shipping safety fairways in the Gulf of Mexico. Shipping safety fairways control the erection of structures that could pose a safety hazard to cargo fleets approaching the oil fields and major ports in the region such as Biloxi, Pascagoula, and Grand Bayou Pass.

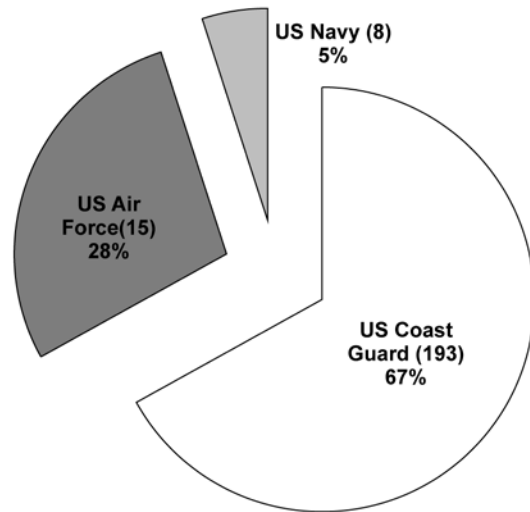
Who manages DFMPAs in the Gulf of Mexico?

The Coast Guard regulates most of the DFMPA area in 193 different sites in the Gulf of Mexico (Graph 15). All of the shipping safety fairways, anchorage grounds, and lightering zones are

Graph 14
Types of DFMPAs in the Gulf of Mexico (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.

Box 9 Eglin Air Force Base

Eglin Air Force Base is located in the Gulf of Mexico off the panhandle coast of Florida. Eglin Air Force Base was created in 1933 by a business man and airplane buff local to the Panama City, Florida area. Convinced that a military payroll would boost the depression-stricken economy of the south, James Plew offered the U.S. government close to 1500 acres for a bombing and gunnery base (Map 12a-d). This purchase was the first step towards Eglin Air Force Base. One of the largest DFMPAs occurs as part of Eglin Air Force Base. The danger zone south of base is used to train pilots for various military operations, safety missions and combat readiness. Here, the 33rd Fighter Wing “Nomads”, a premier air-to-air combat unit of Air Combat Command trains. With two F-15C squadrons and an air control squadron, the wing’s mission is to deploy worldwide and provide air superiority and air control. First established as the 33rd Pursuit Group, the wing’s contribution to tactical airpower during its 50-year history has been significant with participation in campaigns around the world.



Graph 15
Gulf of Mexico DFMPA area by management agency (number and percent area). The number of sites is indicated in parentheses.

controlled by the U.S. Coast Guard. Most of these sites are located in the central Gulf region and are dedicated to the transfer of crude oil to coastal oil refineries. Many of these areas (68) overlap with areas managed by the Army Corps of Engineers.

The Air Force is a key player in the Gulf of Mexico, with 15 individual DFMPAs. Three of the largest are managed by Air Force (e.g., Eglin Air Force Base (AFB), Tyndall AFB) as guided missile

test practice areas. The Drone Recovery Area at Tyndall AFB is one of several smaller sites.

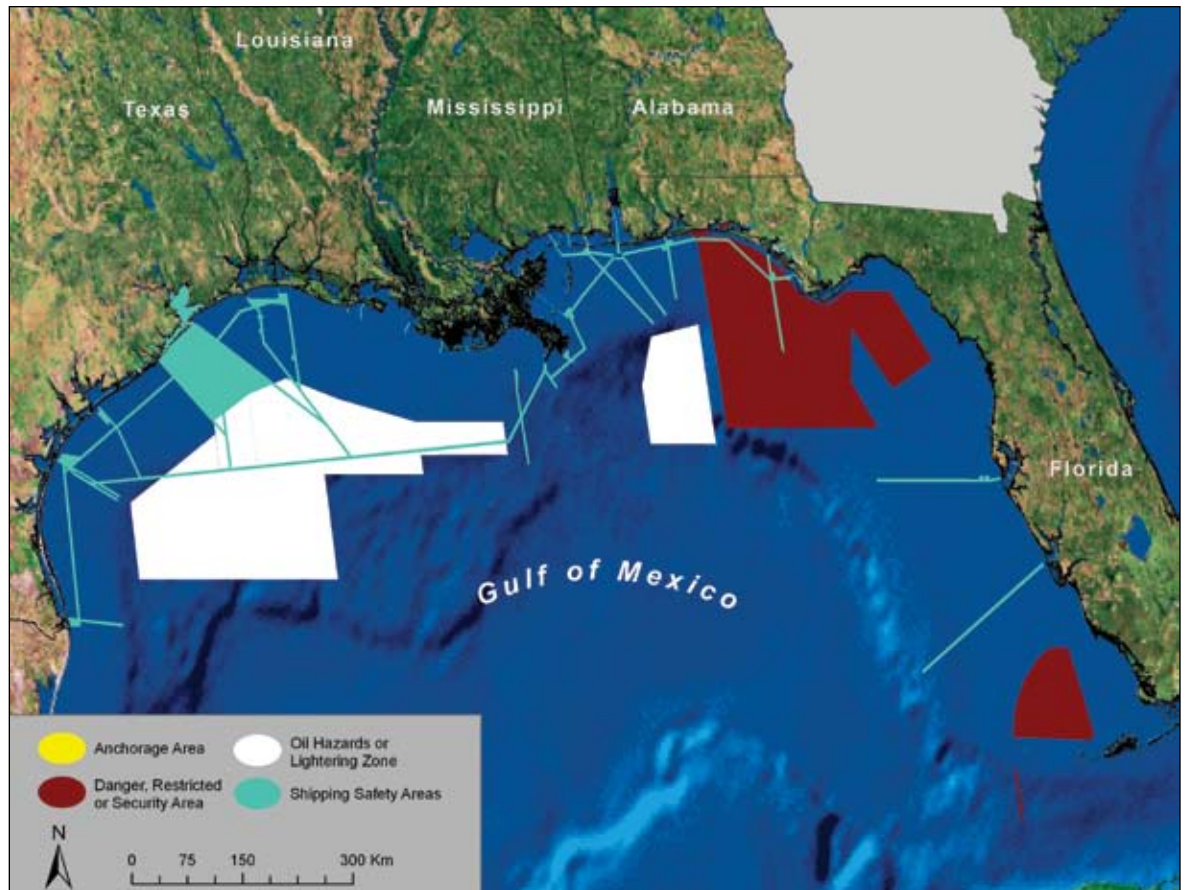
The Navy has eight DFMPAs in the Gulf of Mexico, most of them danger zones. They include small sites such as the Seaplane Restricted Area at Pensacola Bay, and large ones like the Straights of Florida Operational Training Area. Alligator Bayou, a restricted area along a tributary of Choctawhatchee Bay, Florida is also managed by the U.S. Navy.

A single DFMPA offshore from St. George Island is used periodically by U.S. Army troops from Ft. Rucker, Alabama as a test firing area for helicopters. During firing operations, the area is kept under surveillance by accompanying helicopters.

Can people access DFMPAs in the Gulf of Mexico?

Recreational and commercial activities can be conducted in most of the DFMPA area (64%) in the Gulf of Mexico (Graph 16) The dominant types of DFMPAs in this region allow various uses to occur. For example, all shipping safety fairways,

Map 13
Types of DFMPAs in the Gulf of Mexico.

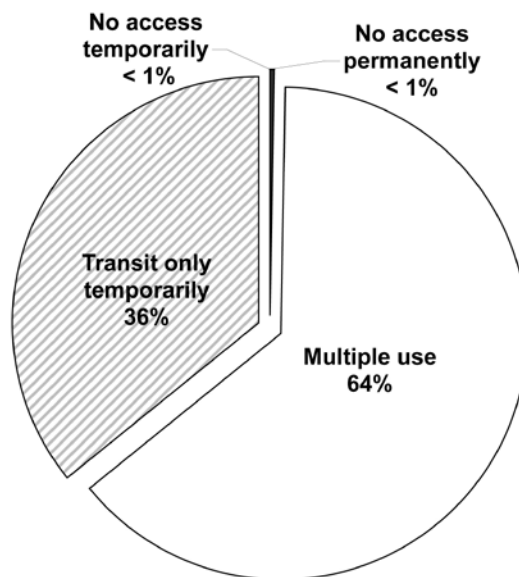


anchorage grounds, lightering zones, prohibited zones, traffic separation schemes, and vessel traffic precautionary areas in the Gulf are multiple use. Regulations in these areas are generally minor, although due to heavy traffic by less maneuverable large supertankers, boats are encouraged to avoid high density shipping lanes. For most of the vessel traffic areas, regulations only apply only to large commercial cargo ships over a certain size. Other vessels should avoid the area by as wide a margin as practicable.

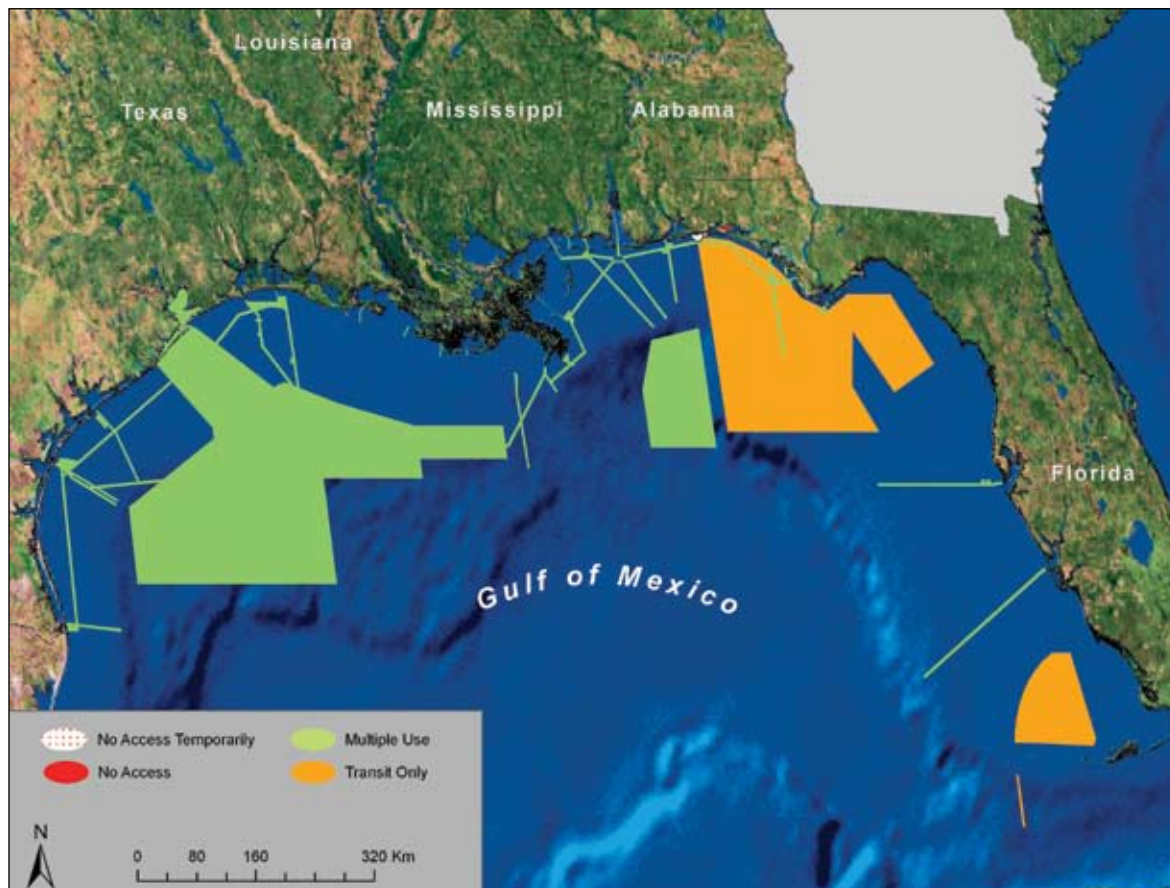
A considerable portion of the Gulf of Mexico is transit only (Map 14), but most of the time regulations apply only during the times the sites are being used. Many of the large Air Force and Navy training sites (Choctawhatchee Bay, the Air-to Air Practice Firing Range, Tyndall Air Force Base, Apalachee Bay, the Guided Missiles Test Operations Area, Eglin Air Force Base, and the Straights of Florida Operational Training Area) are transit only during firing operations. Prior to scheduled air or surface operations that may be dangerous to watercraft, appropriate warnings are issued. St. Joseph Bay Explosives Anchorage is

transit only year-round, but is less than 2 km².

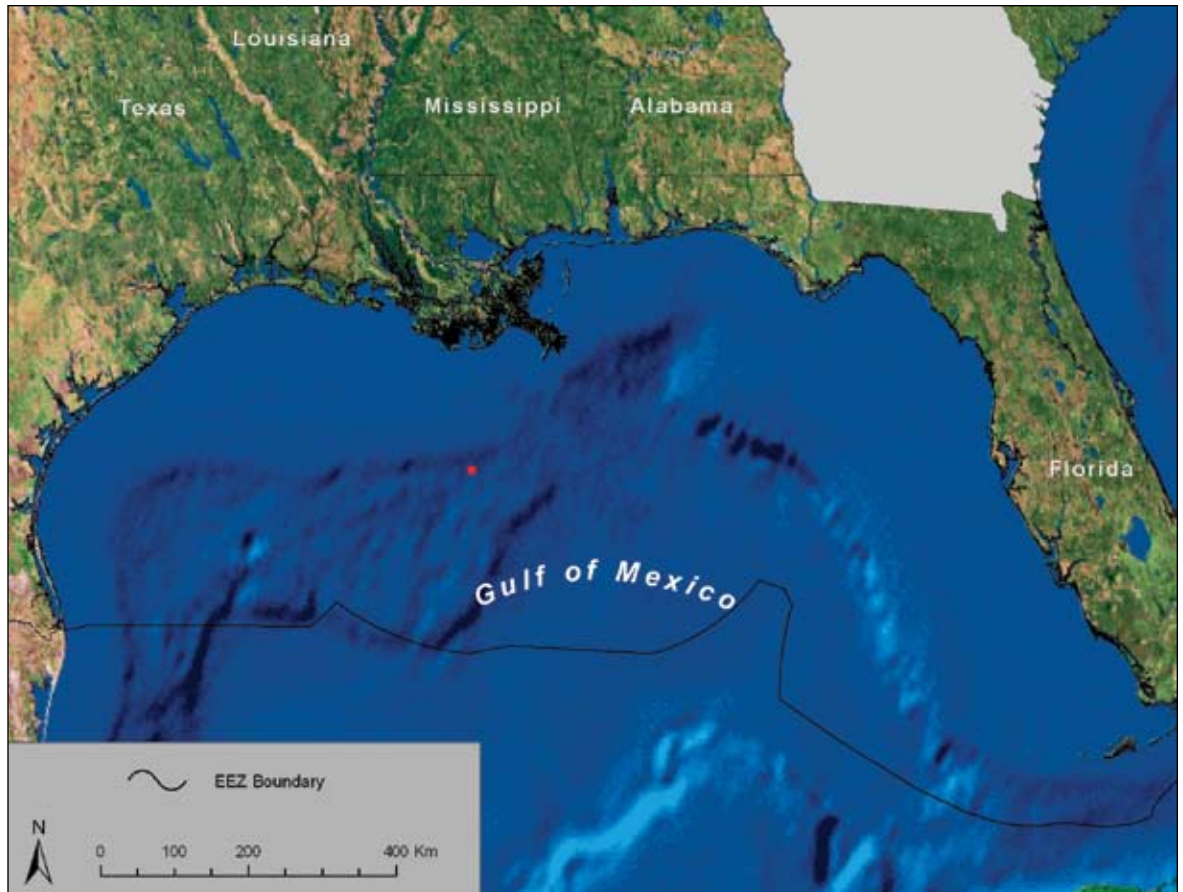
The Gulf has forty-nine no access sites, but these areas are typically extremely small and most are only periodically activated. The largest is off Santa Rosa Island (29 km²), and is closed only when troops from Eglin Air Force Base use the area to train. A tiny portion, less than 1%, of the Gulf of



Graph 16
Gulf of Mexico DFMPA area by level of restriction.



Map 14
Level of restriction of DFMPAs in the Gulf of Mexico.



Map 15

Aggregate no access year round area in the Gulf of Mexico. Red dot does not indicate the location of a specific DFMPA. Rather, it indicates the total no access year round area for all DFMPAs in the Gulf of Mexico.

Mexico is closed to the public year-round. Though 49 DFMPAs are no access permanently, most of these (60%) are oil platforms smaller than a square kilometer. For example, Na Kika is a safety zone around a petroleum and gas production facility in the Mississippi Canyon to protect it from vessels operating outside the normal shipping channels and fairways and reduce the threat of collisions, oil spills and release of natural gas. The Crystal River nuclear power plant in Florida is a security zone that protects the public and the power plant from potential sabotage or accidents. Entry is prohibited, unless specifically authorized.

Summary

The Gulf of Mexico has more DFMPA area than any other region in various types of marine habitats (e.g., salt marsh, coastal, offshore). Currently, less than 100 km² of the region prohibits entry to the public on a permanent basis (Map 15). Most of this area occurs in three sites with near-shore sandy continental shelf habitat at Tyndall Air Force Station off the southern Florida Panhandle. The remainder of the permanently no access

DFMPAs are isolated sites and are less than 1 km². Most of these are located in inland waterways in commercial port areas that were converted from estuary and marsh areas. A large number of isolated individual oil platforms offshore are also no access permanently, and may function as artificial reefs.

SOUTH ATLANTIC DE FACTO MPAs



AT A GLANCE

- 7% of South Atlantic regional waters in DFMPAs
- Most occurs in military and flight training DFMPAs
- Danger zones are the most common type and make up most of DFMPA area in region
- U.S. Navy controls most of this area
- 600 km² in no access year round DFMPAs



Background

A small portion (7%) of the South Atlantic region is contained in 117 DFMPAs. Unlike other regions, most of this area is for military target and flight training (Maps 16a–b). The fair weather that characterizes this region year-round makes it one of the foremost air to air combat training locations in the country. The total DFMPA area is considerable (30,000 km²) and comparable to the West Coast. The South Atlantic region is dominated by large danger zones. These are located off the coast of Georgia, the Florida Keys and Cape Canaveral (Table 8).

Several large DFMPAs exist in the South Atlantic. The largest, the Straits of Florida Operational training area, is located between the Florida Keys and Cuba. Another, the Georgia Coast Air to Water Bombardment Aircraft practice area provides “Joint Military Top Gun” training to improve fighter pilots’ skills. Here, aircraft simulate the dropping of bombs to mathematically predict where they would land. Bombs are not actually

dropped, so there is no impact to marine resources in the area. The smallest DFMPA in the region is the restricted area at Patrick Air Force Base at Cocoa Beach, Florida. Unlike other regions, most of the DFMPA area in the South Atlantic is located offshore to minimize risks to people while test flying occurs. However, several DFMPAs are located in salt marsh (e.g., Charleston Harbor) and estuarine (e.g. Cape Canaveral) habitats within inland waterways.

	Number of DFMPAs
North Carolina	26
South Carolina	34
Georgia	6
Florida	51

Table 8
Number of DFMPAs by state in the South Atlantic.

What types of DFMPAs occur in the South Atlantic?

Danger zones are the most common type of DFMPA in the South Atlantic, comprising nearly 100% of the total DFMPA area (Graph 17;

MAPS BELOW:

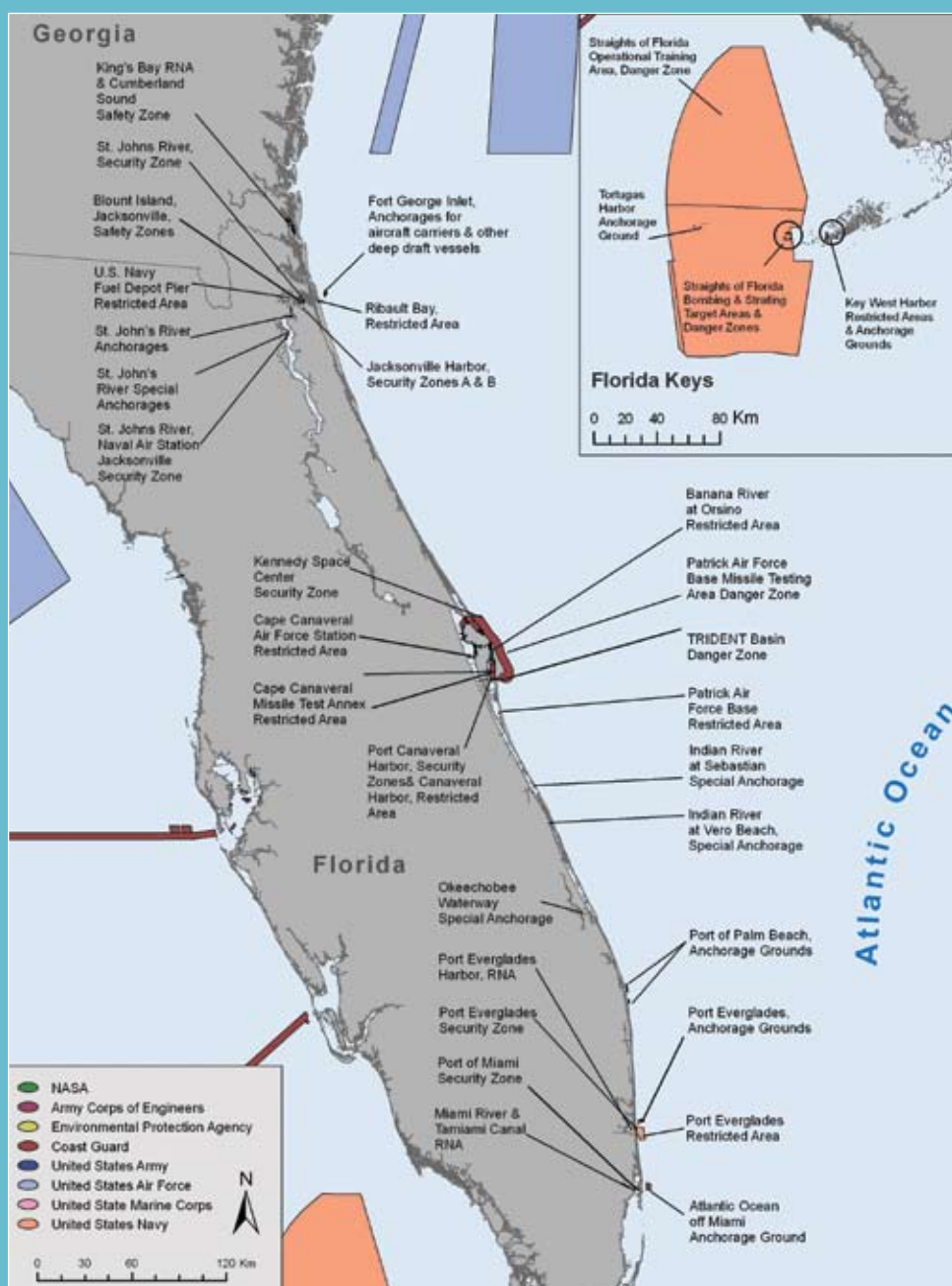
DFMPAs are located along the South Atlantic coastline from North Carolina to southern Florida. Albemarle-Pamlico Sound in North Carolina has several DFMPAs associated with military installations occur, including Harvey Point Restricted Area and Camp LeJeune Security Zone. South Carolina has several DFMPAs located within the coastal estuaries around Charleston. Offshore from South Carolina and Georgia, the Air-to-Water Bombardment Aircraft Practice Danger Zone is situated more than 100 kilometers from shore. In northern Florida, most DFMPAs are clustered around Jacksonville and the St. John's River basin. In central Florida, several DFMPAs associated with Kennedy Space Center and Cape Canaveral are located within the intracoastal waterway. To the south, the ports of Palm Beach, Port Everglades, Miami and Key West have anchorage DFMPAs. To the west of the Keys, several large danger zone DFMPAs are situated around Dry Tortugas.

SUMMARY STATS

- 7% of regional waters
- 117 sites
- 7% of total US DFMPA area
- 29,522 km²

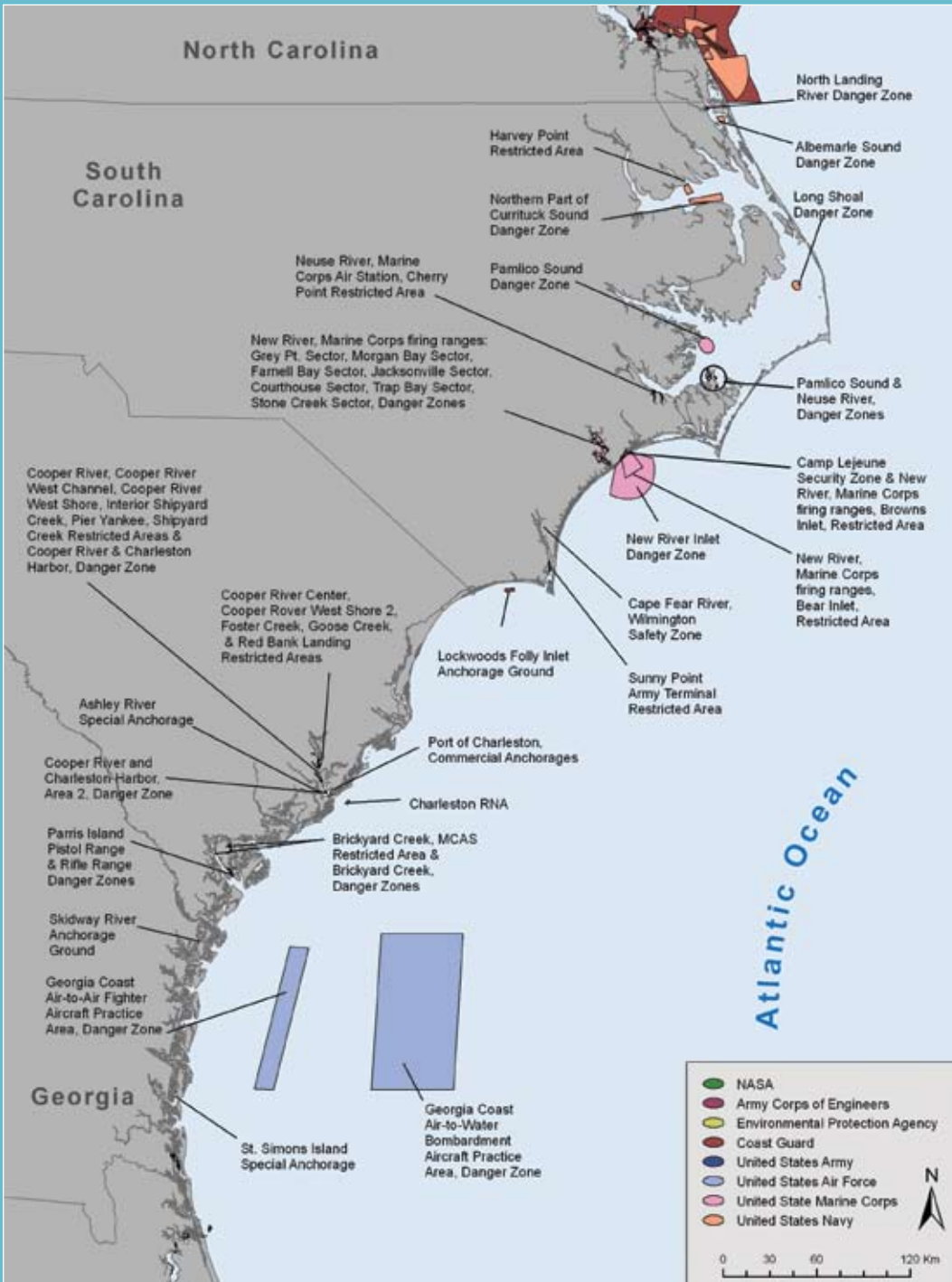
Map 16a

DFMPAs by management agency in the South Atlantic region with names of individual sites.

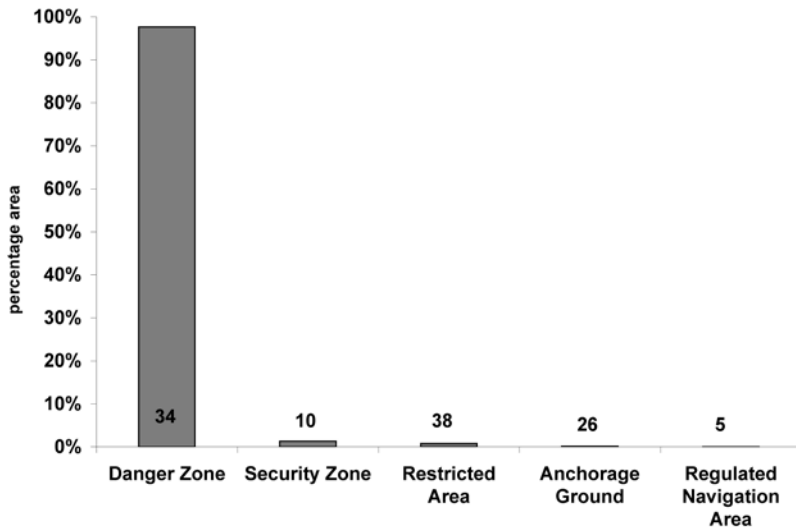


Box 10 Straits of Florida Bombing Strafing Target Areas

A large aerial gunnery range and bombing and strafing target practice area is located off the southern part of Florida, near Key West. This danger zone is just north of Cuba and is part of the Key West Naval Air Station. This Naval Air Station is the premier pilot training facility for tactical aviation squadrons, where some of the best fighter pilots come to train in terrific flying weather (below). The danger zone has a vast amount of air space available to train fighter pilots and the area is sometimes used by joint Air Force and Naval air training missions.



Map 16b
DFMPAs by management agency in the South Atlantic region with names of individual sites.



Graph 17
Types of DFMPAs in the South Atlantic region (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.

Map 17). Large fighter training areas such as the Georgia Coast Air-to-Air Fighter Aircraft Practice Area and the Georgia Coast Air-to-Water Bombardment Aircraft Practice Area are located here, though these areas have not been used in nearly 50 years. Smaller danger zones include the U.S. Navy Northern Part of Currituck Sound, the Trident Basin and ten individual New River Marine Corps firing ranges.

A fraction (1%) of the DFMPA area in the South Atlantic is contained in ten security zones. One of the most well known security areas is the Kennedy Space Center, off the central coast of Florida, where the space shuttle is launched. This is one of the few DFMPAs in the country managed by National Aeronautics and Space Administration (NASA). Another example includes the security zone at Port Canaveral Harbor, Florida, where Poseidon Wharf services U.S. Navy Polaris submarines.

More restricted areas occur in the South Atlantic region than any other type of DFMPA. For example, Shipyard Creek, formerly a site where ferrochromium alloy was produced, was closed to shellfish harvest due to high levels of chromium detected in edible fish tissue.

Many anchorages dot the region along the coast, predominately close to busy ports such as Port Everglades, Palm Beach, Key West and Jacksonville. One anchorage provides space for large naval vessels in northern Florida.

Five small regulated navigation areas make up a tiny portion of the DFMPA area in the South Atlantic. These areas help prevent damage or

marine casualties, protect waterfront facilities and safeguard ports and harbors. They are generally located in densely populated places, and are fairly small, particularly compared to danger zones in this region. All are managed by the Coast Guard and include the Miami River, Charleston, and Tamiami Canal.

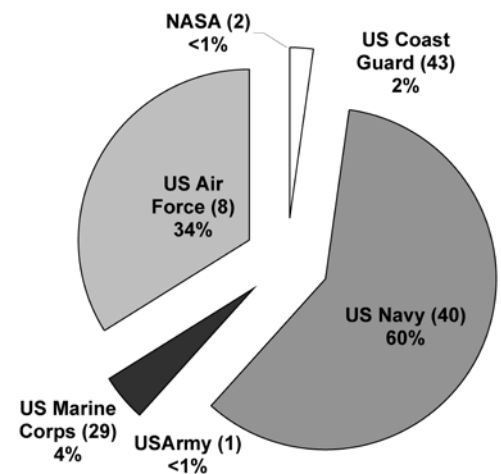
Who manages DFMPAs in the South Atlantic?

The Navy manages more DFMPA area in the South Atlantic region (60%) than any other management agency with 40 sites (Graph 18). Most of these are located in the Straits of Florida Bombing Strafing Target Areas (see Box 10). Smaller Naval DFMPAs include the Cooper River danger zone in Charleston Harbor, South Carolina, where vessels are allowed to proceed along established waterways during military training operations, but warnings are announced on the radio.

The Air Force has a eight large DFMPAs in the South Atlantic, including the Georgia Coast Air-to-Air Fighter Aircraft Practice Area, the Patrick Air Force Missile Testing Area and the Cape Canaveral Air Force Station. The South Atlantic is one of the few regions where the Marine Corps has jurisdiction over several (29) sites. Most are danger zones, such as Pamlico Sound and the Parris Island Rifle Range. Camp LeJeune, a U.S. Marine training camp, has been home to the “Expeditionary Forces in Readiness” for the past 65 years, where soldiers prepare for combat and humanitarian missions abroad.

More DFMPAs (43) are managed by the Coast Guard than any other agency in the South Atlantic, but these sites are generally small. Consequently,

Graph 18 (Below)
South Atlantic DFMPA area by management agency (number and percent area). The number of sites is indicated in parentheses.



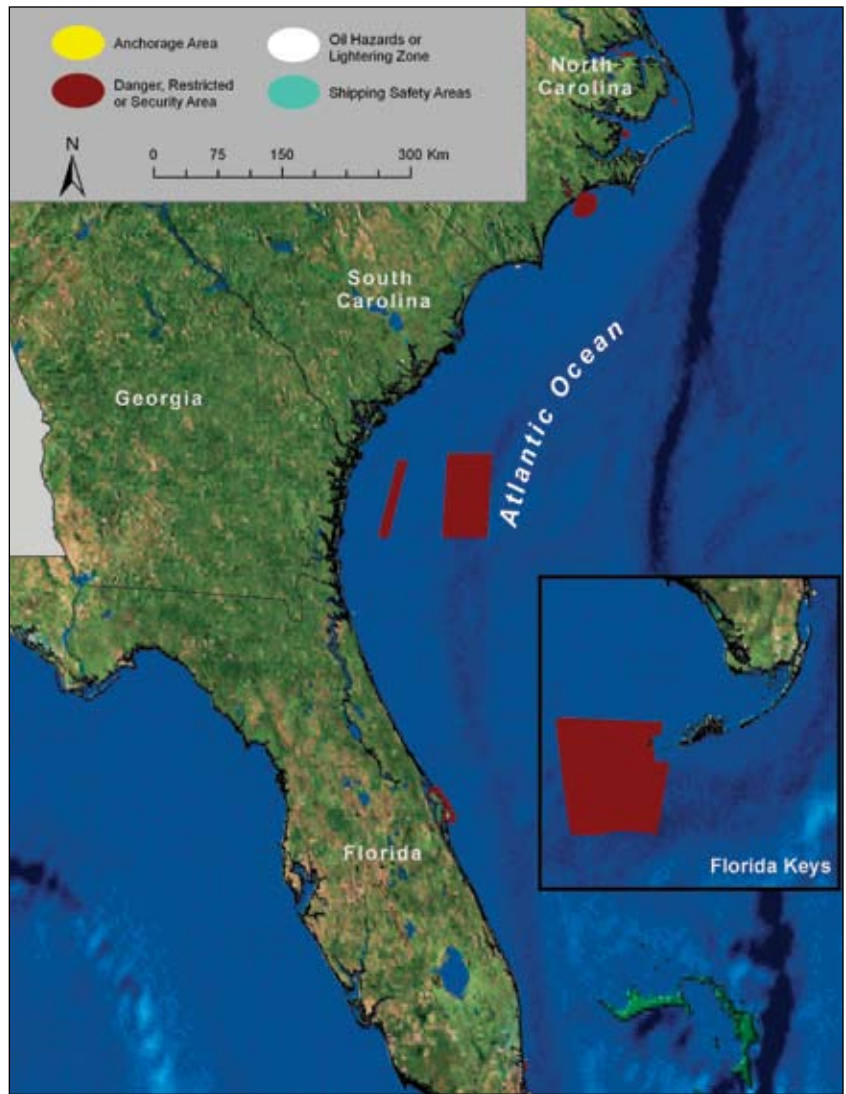
the Coast Guard manages proportionately less regional waters area in the South Atlantic than in any other region. In the South Atlantic, the Coast Guard manages or co-manages several types of DFMPAs including restricted navigation areas, anchorages, safety and security zones. Anchorage grounds at Indian River, Florida, St. Simon's Island Georgia and Lockwood Folly's Inlet off North Carolina are all managed by the Coast Guard.

A handful of sites are managed by NASA (2), the Army Corps of Engineers (2) and the US Army (1). The Banana River, adjacent to NASA's Kennedy Space Center at Cape Canaveral, boasts some of the world's records for recreational fishing. The trophy landings from this area are attributed to the strict no fishing protection afforded by the security zone surrounding the NASA space center.

Can people access DFMPAs in the South Atlantic?

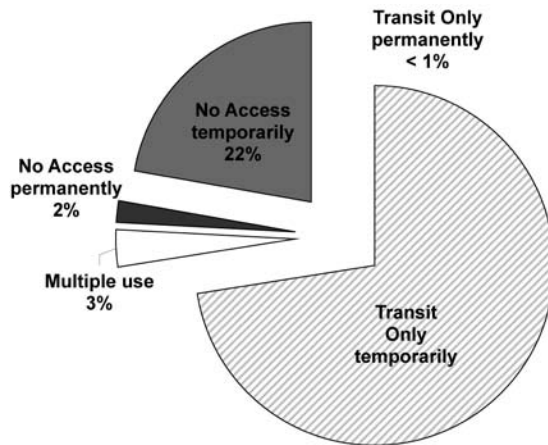
While a large proportion of the total DFMPA area of the South Atlantic can be declared no access or transit only on a temporary basis, the vast majority of this area is rarely "hot," or restricted due to military activities (Graph 19). Most of the DFMPA area in the South Atlantic allows multiple uses most of the time (Map 18). The large controlled air space off Georgia and Florida is maintained as military training areas, but fighter jet training takes place well above 10,000 feet and impacts are limited to occasional noise bursts. While over 90% of the South Atlantic DFMPA area is transit only or no access on a period basis, in practice this rarely occurs for most sites.

A small part of the DFMPA area in the South



Map 17
Type of DFMPA in South Atlantic region

Atlantic is off limits year-round. As in other regions, these sites are typically extremely small (i.e., Parris Island Rifle and Pistol Ranges). A portion of Lockwood Folly Inlet along the intra-coastal waterway off North Carolina is no access year-round because of extremely shallow waters.



Graph 19
South Atlantic DFMPA area by level of restriction.

Consequently, the Coast Guard issued a warning to mariners to reduce risks of grounding. Another area is Patrick Air Force Missile Testing Area, which supported a variety of missile and space programs in the 1960s. The termination of the Apollo space program and the end of land-based ballistic missile development at Cape Canaveral signaled a downturn in fortunes and on 1 February 1977 the range was inactivated.

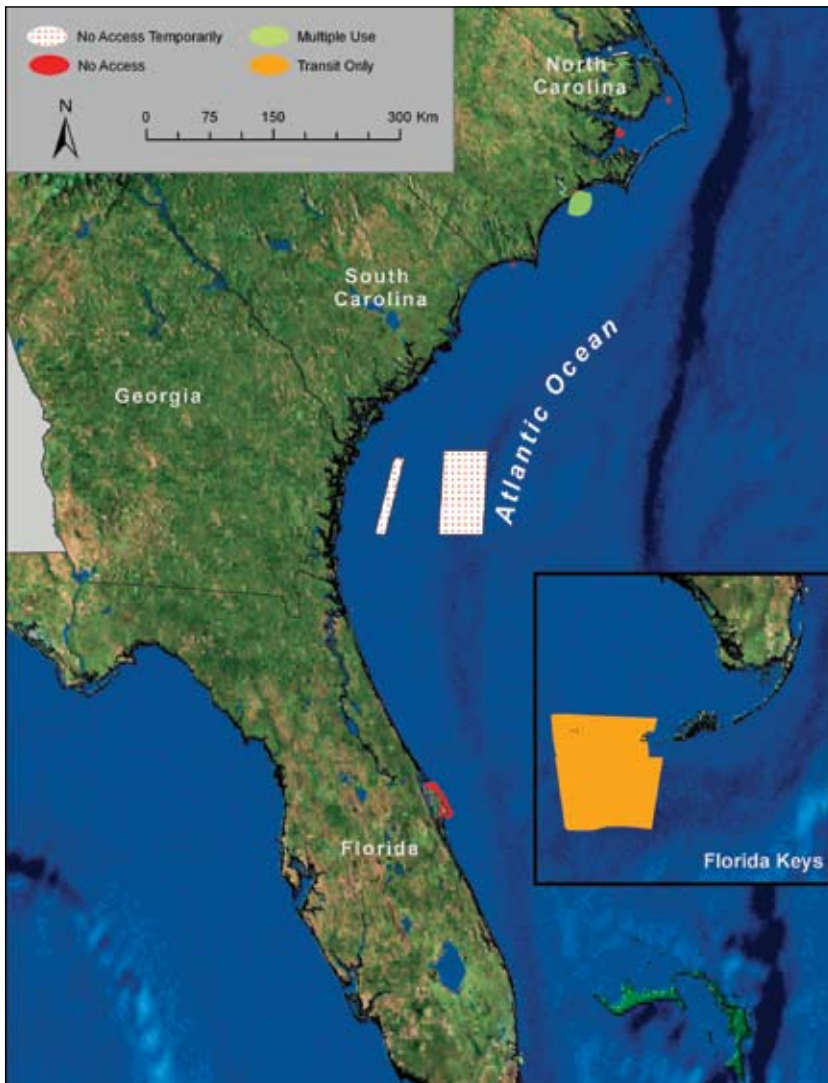
located in highly productive estuarine habitats including tidal creeks, salt marshes and sea grass communities. To understand their conservation value, assessments of resources and historical use of these areas will be necessary.

Map 18 (Below L)
Level of restriction of DFMPAs in the South Atlantic region.

Map 19 (Below R)
Aggregate no access year round area in the South Atlantic region. Red dot does not indicate the location of a specific DFMPA. Rather it indicates the total no access year round area for all DFMPAs in the South Atlantic.

Summary

The South Atlantic ranks third in the U.S. in the areal extent of DFMPAs with almost 30,000 km². As in several regions, much of this DFMPA area is rarely restricted, consequently the impacts to human activities and to the marine resources in the areas are likely minimal. However, there are small year-round no access DFMPAs distributed across the region in 40 locations and the total aggregate area is small (Map 19). These sites tend to be



MID-ATLANTIC DE FACTO MPAs



AT A GLANCE

- The Mid-Atlantic region has the densest concentration of DFMPAs
- More DFMPAs occur here than any other region
- Most is for shipping and navigation for major shipping ports off New York, Baltimore, and the Chesapeake
- Anchorages are the most common type, but shipping safety areas make up most area



Background

The Mid-Atlantic has more DFMPAs than any other region, with 285 sites (Map 20a–b). These sites take up approximately 6% of the Mid-Atlantic regional waters. DFMPAs in the region are primarily dedicated to moving cargo, vessels and passengers in and out of the busy eastern seaboard ports of New York, Baltimore and the Chesapeake. A maze of sites has been woven together by the Coast Guard to control the movement of vessels. A few of these sites are large (e.g., regulated navigation areas and traffic separation schemes serving New York), but many smaller sites are scattered across the Mid-Atlantic region. The largest DFMPA in the region is the Chesapeake Bay Entrance regulated navigation area, and the smallest is the Wye River special anchorage area in Maryland. New York has the largest number of DFMPAs in the region, with a large number occurring in Virginia and Maryland to facilitate shipping in the Chesapeake Bay (Table 9). Pennsylvania has the fewest DFMPAs in the Mid-Atlantic region.

	Number of DFMPAs
New Jersey	12
Maryland	40
Virginia	78
Delaware	21
New York	130

Table 9

Number of DFMPAs by state in the Mid-Atlantic region.

What types of DFMPAs exist in Mid-Atlantic?

Regulated navigation areas (RNAs) make up more area than any other type of DFMPA in the mid-Atlantic region (43%), though there are only three sites: Chesapeake Bay Offshore Regulated Navigation Area, Delaware Bay Regulated Navigation Area and the Chesapeake Inland Regulated Navigation Area (Graph 20; Map 21).

With 24 sites, traffic separation schemes are the second largest DFMPA type in the region. The largest, Precautionary Area 1, off New York, indicates lanes of westbound and eastbound

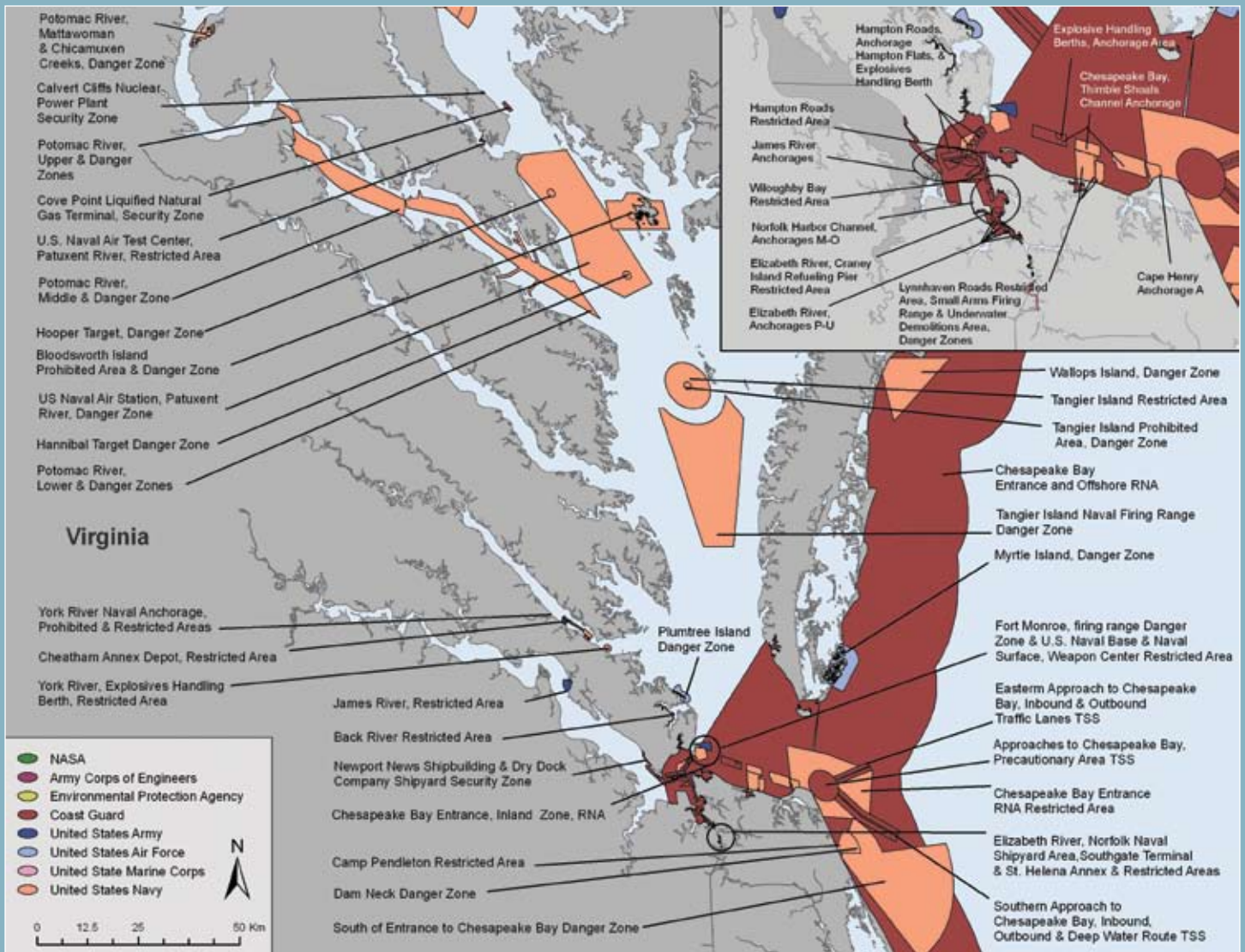
MAPS BELOW:

DFMPAs are located in coastal and offshore waters throughout the Mid-Atlantic region, although the majority occurs within the major ports. Within southern New Jersey and Delaware, DFMPAs are situated at the entrance of and within Delaware Bay. DFMPAs also occur along the Delaware River all the way to Philadelphia. The coastal waters to the east of Delaware and Maryland have offshore DFMPAs connecting Delaware Bay and Chesapeake Bay with shipping lanes from New York City and Boston Harbors. The mouth of Chesapeake Bay has many DFMPAs such as Chesapeake Bay Entrance regulation navigation area. Within the Chesapeake Bay there are many DFMPAs managed by the Navy, including Tangier Island Restricted Area, Hannibal target Danger Zone, and York River Naval Anchorage. These military DFMPAs extend up the Potomac and Patuxent Rivers.

SUMMARY STATS

- 6% of regional waters
- 285 sites
- 5% of total U.S. DFMPA area
- 14,023 km²

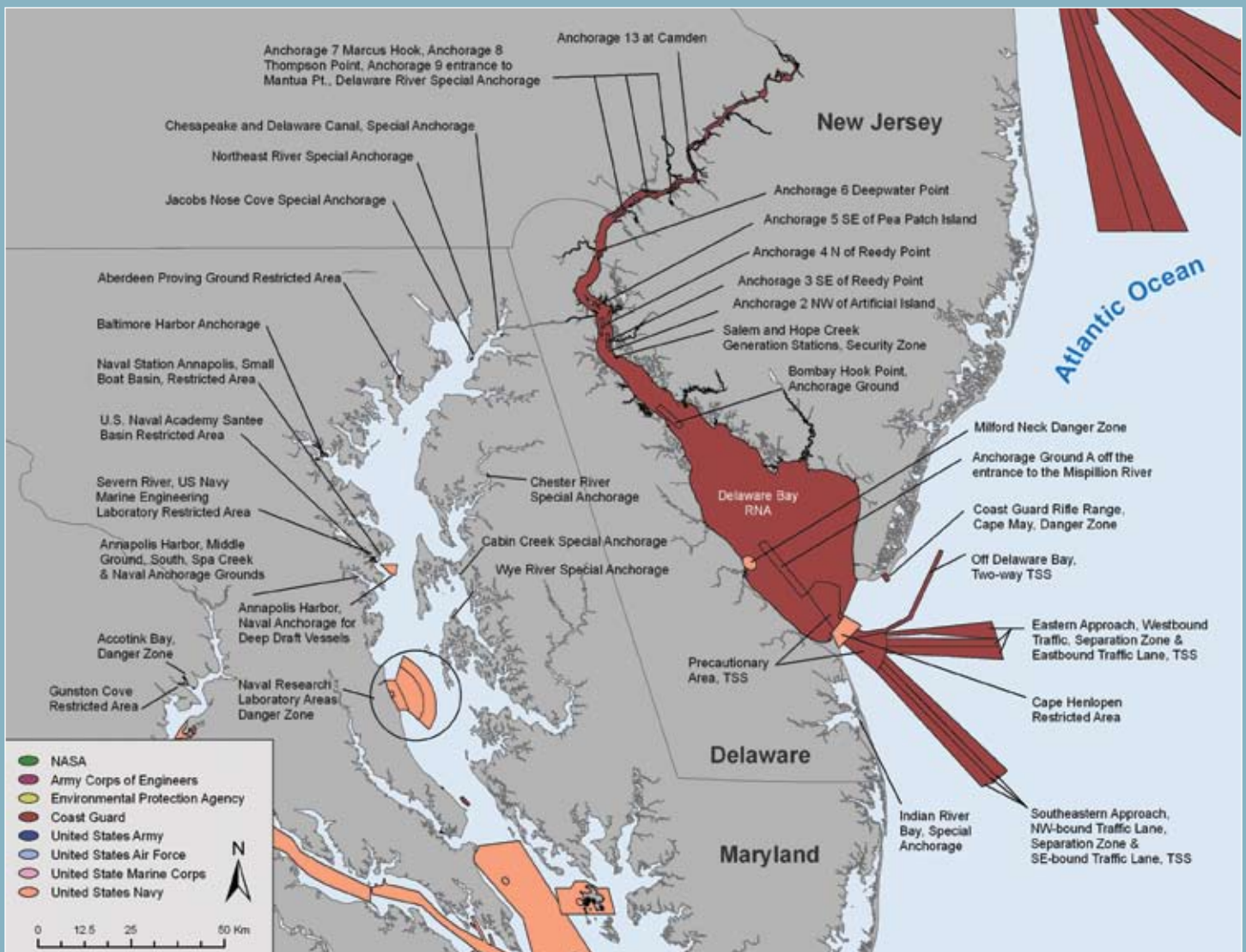
Map 20a DFMPAs by management agency in the Mid-Atlantic region with names of individual sites.

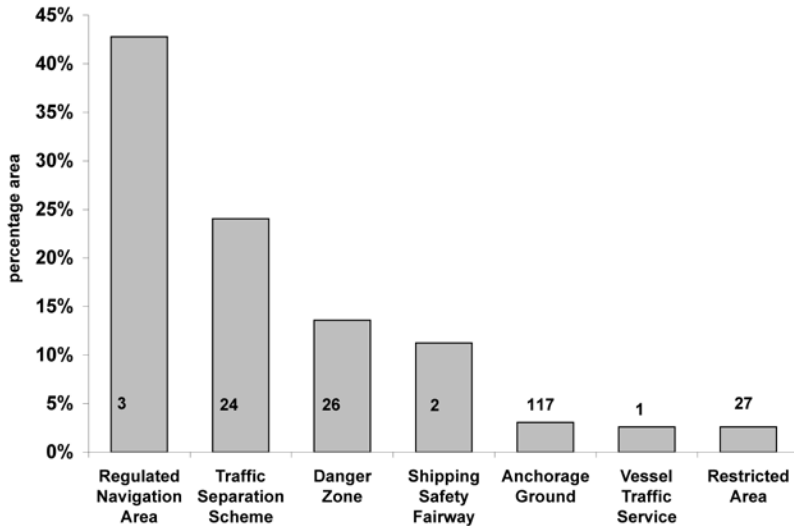


Box II Fort Monroe Danger Zone

Fort Monroe danger zone was designated in 1880 to protect the entrance of Hampton Roads at the mouth of Chesapeake Bay. The fort accomplished this mission by mounting an impressive complement of the most powerful artillery of the time, 32-pounder guns with a range of over one mile. This was just enough range to cover the main shipping channel into the area. In 1824, the fort received another important mission when it was chosen as the site for the Army's new Artillery School of Practice. This remains the mission of the danger zone of Fort Monroe to this day.

Map 20b
DFMPAs by management agency in the Mid-Atlantic region with names of individual sites.





Graph 20 (Above)
Types of DFMPAs in the Mid-Atlantic region (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.

Graph 21 (Below R)
Mid-Atlantic region DFMPA area by management agency (number and percent area). The number of sites is indicated in parentheses.

traffic. Such designations are typically directed at large commercial ships, although smaller boats must be cautious in high vessel traffic areas.

Twenty six danger zones make up a considerable portion of the Mid-Atlantic region’s DFMPAs (see Box 11). At Accotink Bay, when firing is in progress, the Post Commander places guards that stop the firing if anyone is seen in the area. Another danger zone is off Myrtle Island, Virginia, where the U. S. Air Force practices bombing, rocket firing, and has a gunnery range. There are also 27 restricted and security zones such as the Naval Air Station at Patuxent River and the Tangier Island Naval Firing Range. A large portion of New York Harbor is designated as a security zone to ensure safety, prevent sabotage or terrorist acts, and facilitate the efforts of emergency services and law enforcement officers responding to terrorist

attacks. Several new security zones were designated in 2003 (e.g., John F. Kennedy Airport, LaGuardia Airport, and Liberty and Ellis Island).

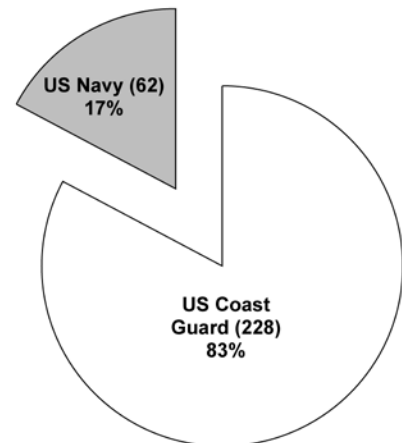
Over 100 sites are designated as special anchorages. In this region, an active recreational boating community must steer clear of commercial vessel traffic. Anchorages established primarily by the Coast Guard help keep these different boating communities from colliding. Other anchorages such as Hampton Roads were established for deep draft vessels to keep them from Hampton Bar Flats.

Who manages DFMPAs in the Mid-Atlantic?

Management of DFMPAs in the region is dominated by two agencies, the Coast Guard and the Navy. The Coast Guard manages most of the DFMPAs in the Mid-Atlantic (Graph 21). The two largest are the regulated navigation areas off Chesapeake Bay and the Delaware River, which account for 83% of the total DFMPA in the region.

The Navy manages 62 DFMPAs in the Mid-Atlantic, many of which are danger zones and restricted areas. The three largest are the South entrance to the Chesapeake Bay, the Patuxent River Naval Air Station and the Tangier Island Naval Firing range. The Navy has proposed resuming bombing and strafing runs and live-fire military training exercises on these Chesapeake Bay islands. The Navy also has smaller sites, such as the Chesapeake Bay Lynnhaven Roads Navy Amphibious Training Area.

The remaining sites are managed or co-managed by the Army Corps of Engineers (3),



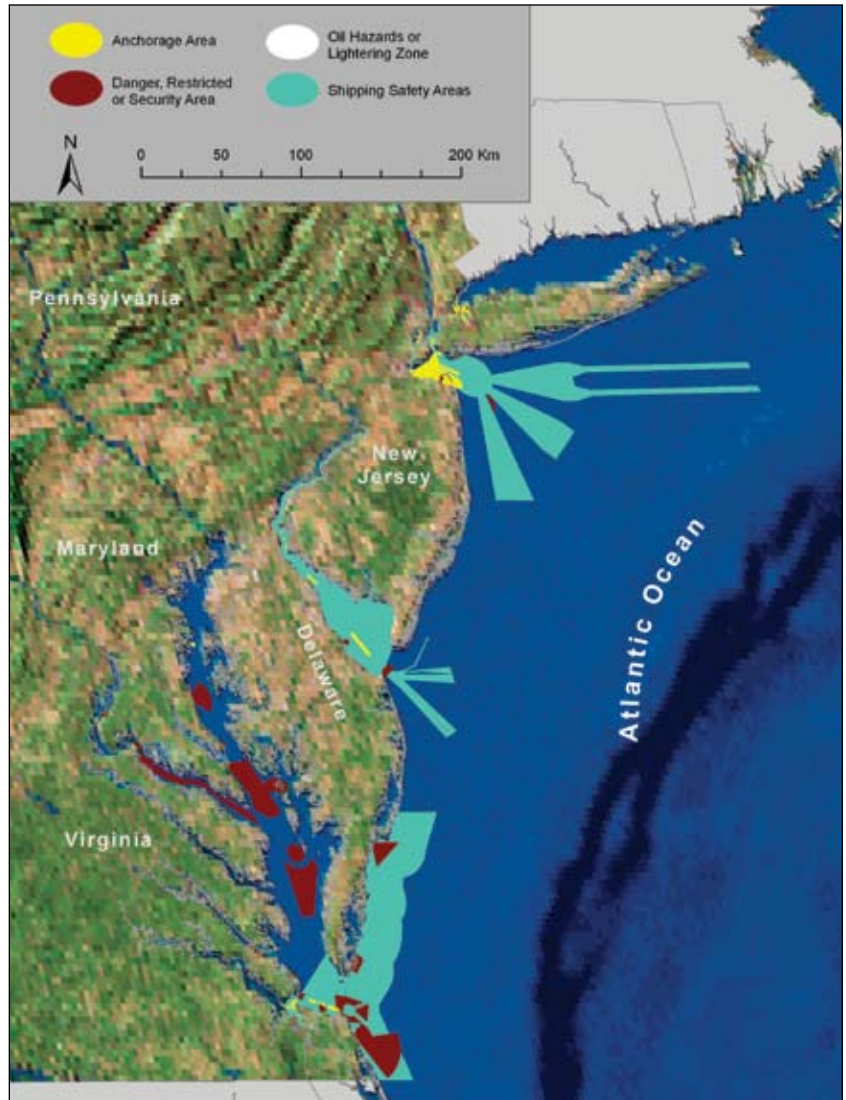
the Army (2), and the Air Force (3) in the Mid-Atlantic. Plum Tree Island is managed by the Air Force, and has unexploded ordnance from its use as a bombing practice area during World War I. The Army Corps of Engineers manages three restricted areas including Willoughby Bay, which is off limits because it is adjacent to the Naval Station at Norfolk.

Can people access DFMPAs in the Mid-Atlantic?

Most human activities are allowed within the vast majority (83%) of the DFMPA area in the Mid-Atlantic region (Graph 22; Map 21). Most of the traffic and shipping safety areas have a few regulations to avoid collisions among large commercial vessels. For example, vessels carrying dangerous cargoes must notify the port authority.

A quarter (25%) of the Mid-Atlantic DFMPA area is transit only, though all of this is only temporarily activated. Much of this area is managed by the Navy, and includes Wallops Island, Milford Neck and the Naval Research Laboratory Area C in Maryland. Other transit only areas include anchorages located within the harbors of Chesapeake Bay, Delaware River and the Hudson River.

As in other regions, there is little DFMPA area (< 1%) that is permanently closed. Sixty individual DFMPAs are designated no access year round, including Ellis Island, Liberty Island and the waters immediately adjacent to La Guardia Airport. Many locations near airports or other sensitive areas have several DFMPAs at a single location. For example, JFK Airport in New York



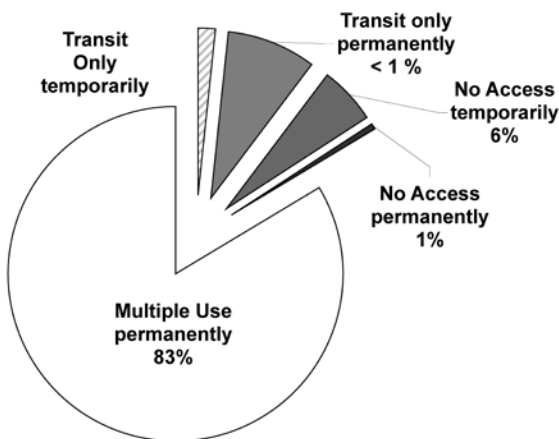
Map 21
Types of DFMPAs in the Mid-Atlantic.

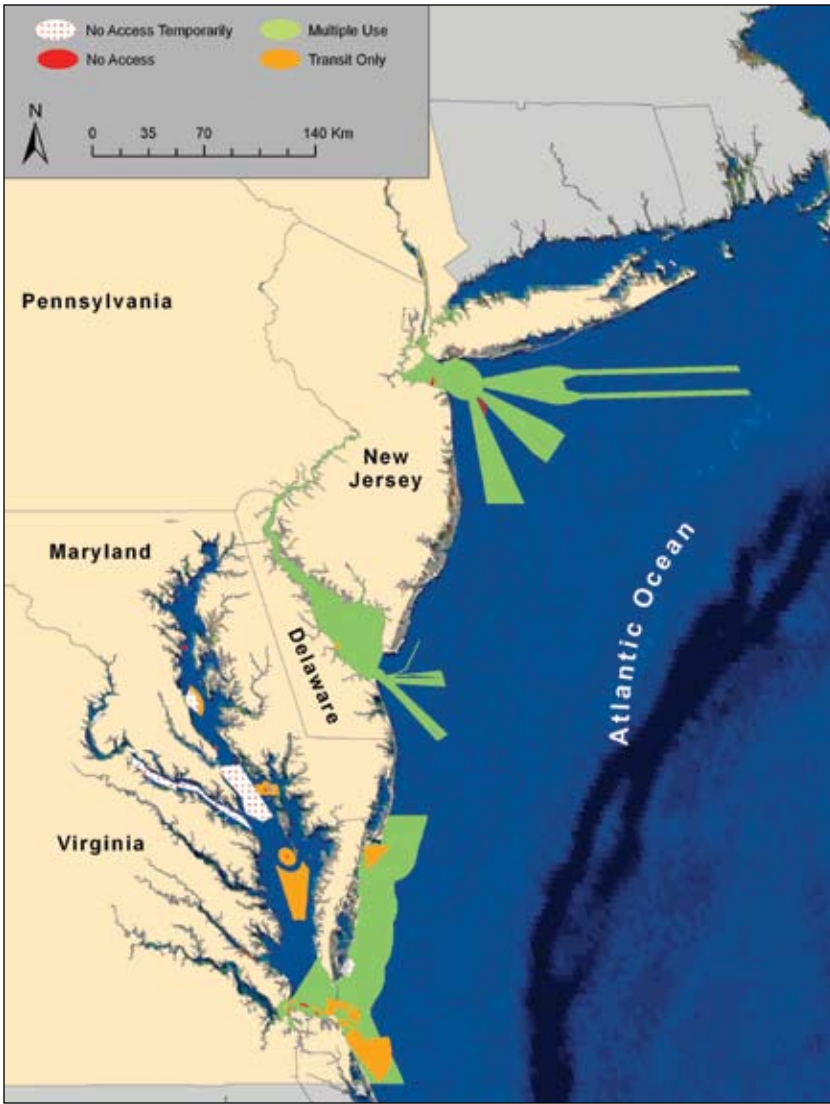
and the Potomac River in Washington, D.C. each have four security and danger zones that are inaccessible to the public.

Summary

Close to 300 DFMPAs are located in the Mid-Atlantic region, covering a 6% of regional waters. Most of this is located at the entrances to three large ports along the eastern seaboard. These waters are heavily congested with both recreational and commercial boaters, and the DFMPAs typically aim to provide safe navigation. A small area (10 km²) is no access year round, smaller than Washington DC (Map 23). This includes 60 DFMPAs in more than 45 locations around the region. Many of these areas protect high security zones from terrorist threats; consequently almost all of these sites are located close to shore. They protect areas such as the Naval Air Station on

Graph 22
Mid-Atlantic DFMPA area by level of restriction.

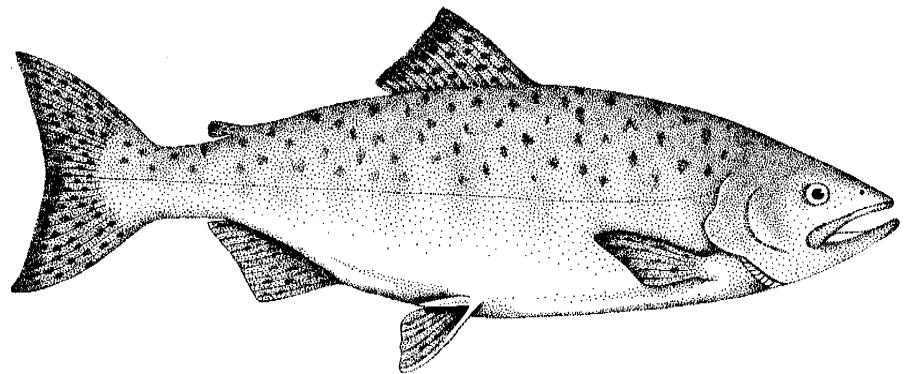




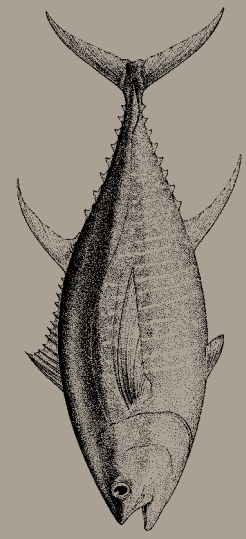
Map 22 (Above L)
Level of restriction of DFMPAs in the Mid-Atlantic region.

Map 23 (Above R)
Aggregate no access year round area in the Mid-Atlantic region. Red dot does not indicate the location of a specific DFMPA. Rather it indicates the total no access year round area for all DFMPAs in the Mid-Atlantic.

the Patuxent River in Maryland, the Back River Security Area near Langley Air Force Base and the Laurel Bay Military Family Housing Area servicing the Marine Corps station. Many of the no access year round DFMPAs in the Mid-Atlantic occur in salt marsh habitat, but more than half are less than 1 km². The largest site is 9 km².

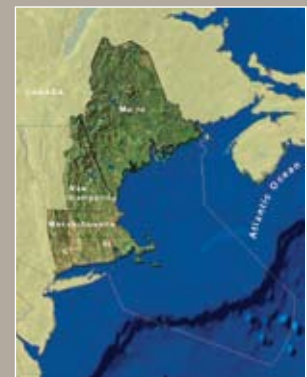


NEW ENGLAND DE FACTO MPAS



AT A GLANCE

- Most DFMPA area is for transportation
- More anchorages exist than any other type
- Six large traffic separation schemes dominate landscape
- The Coast Guard overwhelmingly controls more DFMPA area than any other agency



Background

DFMPAs make up a small part (3%) of New England regional waters. These 164 DFMPAs, are part of an interconnected system for shipping and safe navigation (Maps 24a–b; Table 10). The DFMPAs of New England function primarily (90% of DFMPA area) to service ports in this region and approaches to ports in the Mid-Atlantic. A series of large shipping safety and traffic separation areas off of New York (extending out to Nantucket, Rhode Island) lead ships in and out of the harbor. Lanes of traffic indicate the preferred direction of

movement for large ships south of Long Island, Rhode Island and Nantucket (see Box 12). This is also a productive fishery area for Atlantic cod, bluefish, tuna, and halibut.

	Number of DFMPAs
Maine	29
New Hampshire	2
Massachusetts	66
Rhode Island	17
Connecticut	43
New York	7

Table 10
Number of DFMPAs by state in New England.



The large anchorage area south of Nantucket is another prominent DFMPA feature in the New England region, established to keep the entrance to small ports and harbors clear. Foreign vessels are required to have pilots or tugs assist their movement. New England’s smallest DFMPA is the Mystic River, East Side of Chelsea Bridge North special anchorage area, which is large enough for one large commercial cargo ship.

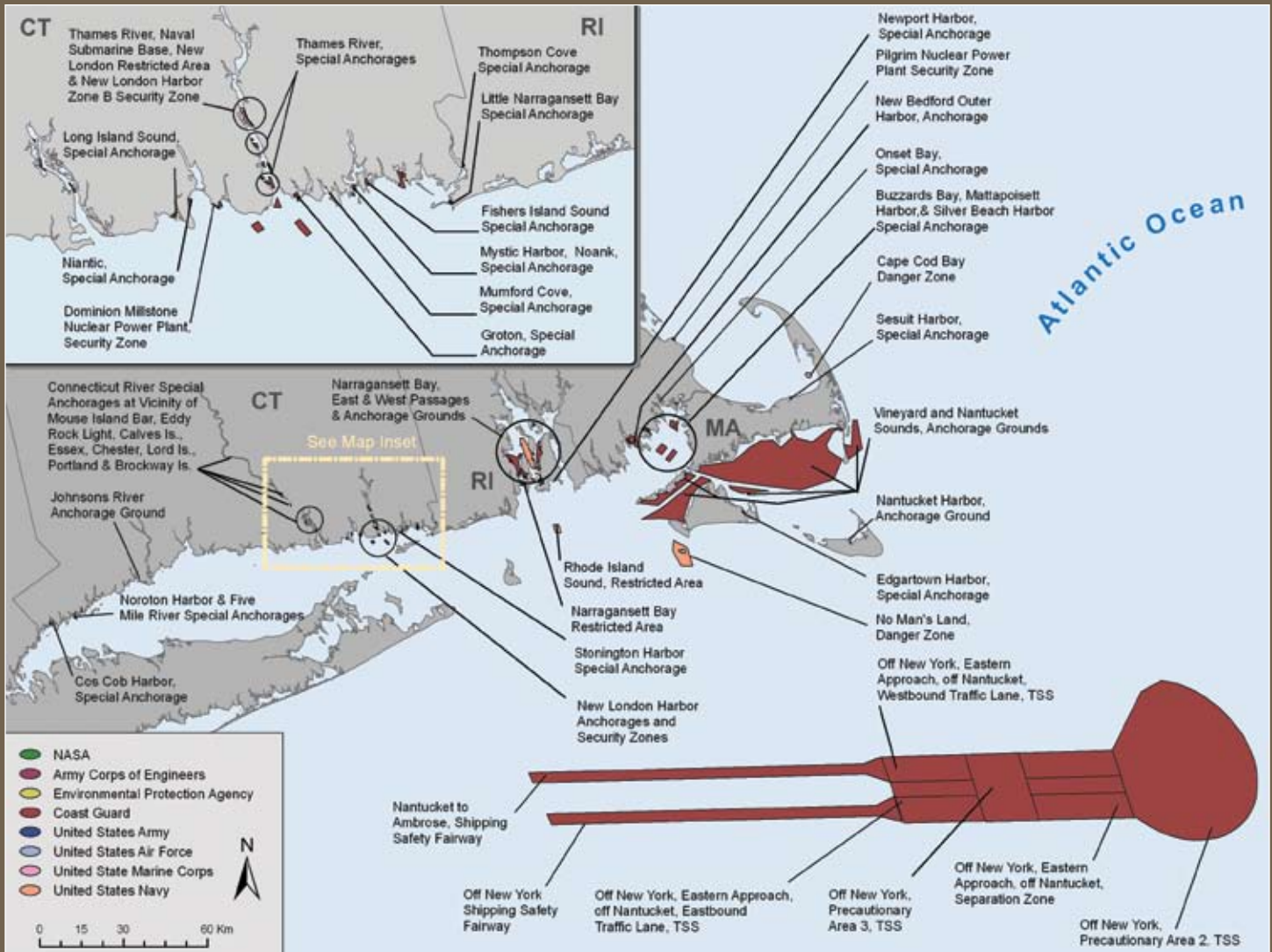
MAPS BELOW:

The New England coastline has DFMPAs along its bays, rivers and harbors, as well as several large DFMPAs offshore. In Maine, a few DFMPAs are located around offshore islets including Seal Island, Pemaquid and Cape Small danger zones. Closer to the coast, DFMPAs in Maine are predominately located within Penobscot Bay, the Kennebec River and around Portland. Few DFMPAs occur between Portland, Maine and Boston Harbor, although there are many at the entrance to Boston Harbor. Several large DFMPA anchorages are located on the southern shore of Cape Cod (Vineyard and Nantucket Sound). Multiple DFMPA anchorages are found within Narragansett Bay in Rhode Island and along coastal Connecticut. A series of extensive DFMPAs offshore from New York City funnel commercial vessels into the regulated navigation areas at the approach to New York's port.

SUMMARY STATS

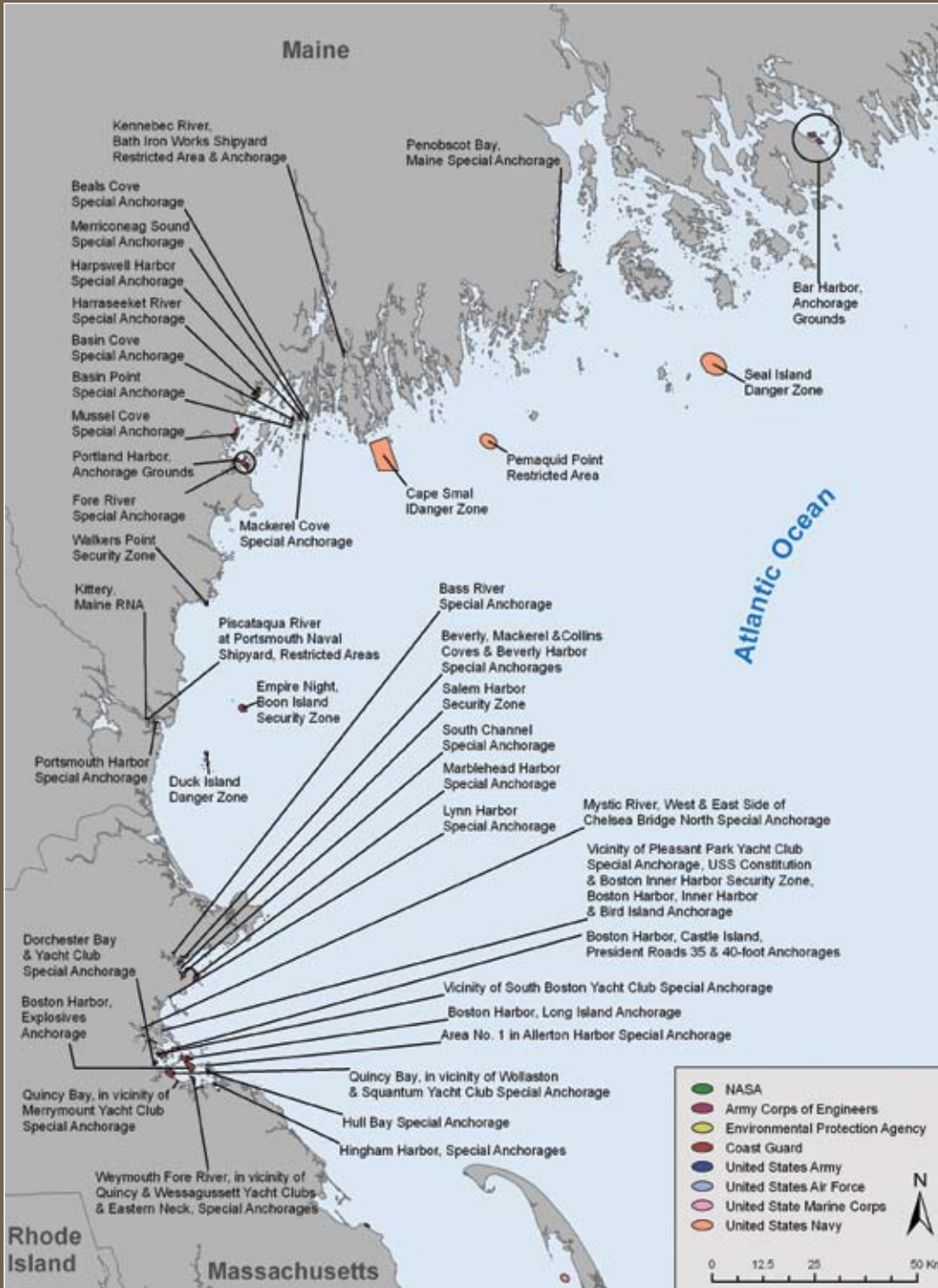
- 3% of regional waters
- 164 sites
- 3% of total U.S. DFMPA area
- 7, 621 km²

Map 24a DFMPAs by management agency in New England with names of individual sites.

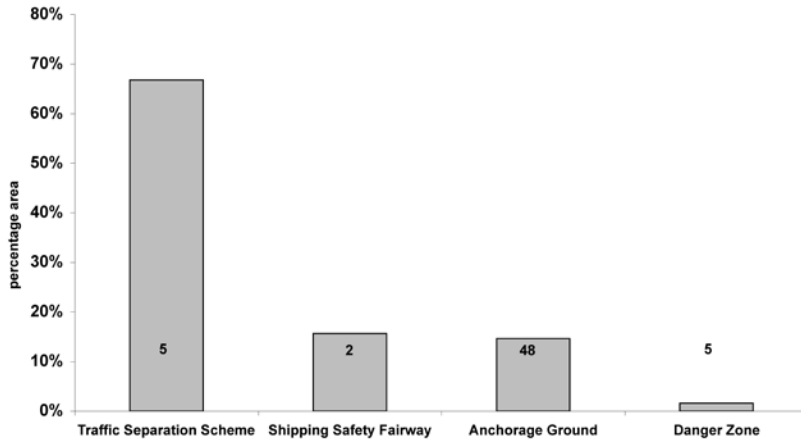


Box 12 New England Traffic Separation Schemes

A Traffic Separation Scheme is one of several routing measures adopted by the International Maritime Organization to improve the safety of navigation in areas of converging traffic, congested areas or where freedom of navigation is constrained in some way. These are usually found at the entrances to major ports and "choke points" where heavy volumes of shipping are forced to pass through narrow straits. Here, large commercial vessels should proceed in the appropriate traffic lane in the direction of traffic flow for that lane. In the New England region, most shipping traffic services the busy port of New York, where in 2006, over 5,300 ships delivered goods.



Map 24b
DFMPAs by management agency in New England with names of individual sites.



Graph 23
Types of DFMPAs in New England (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.

The rest of the New England region is dotted with a number of DFMPAs off the coast. Massachusetts has a large number of anchorage areas. Along the coast of Maine and New Hampshire, a number of security and danger zones are associated with military installations. Many of these sites occur along rocky inter-tidal habitat, where lobster fishing still flourishes.

What types of DFMPAs exist in New England?

Five traffic separation schemes and two shipping safety fairways make up more than 90% of the DFMPA area in New England. These large areas connect to manage national and foreign vessels entering and departing New York harbor (see Box 13). While there are only two shipping safety fairways in New England, these are large, covering almost 20% of the DFMPA area (Graph 23).

More (50) anchorage DFMPAs occur in New

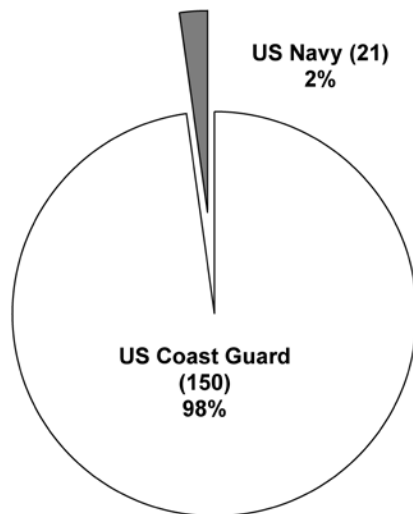
England than any other type (Graph 33). Because these areas are so small, they take up a relatively small portion of the region. Johnson’s River is a small anchorage, located at the Bridgeport Harbor, one of Connecticut’s principal commercial ports. The Vineyard and Nantucket Sounds, Anchorage I is rather large and has become a docking and anchorage area for the Atlantic coastal shipping fleet. It is not uncommon for 300 boats at a time to be anchored in Vineyard Haven harbor, awaiting a decent tide and a fair breeze.

Five danger zones occur in New England, but these cover a relatively small (1%) portion of the total DFMPA area. Duck Island, Cape Cod Bay, Seal Island, Cape Small and No Man’s Land are all danger zones. Cape Small is a naval aircraft practice mining range area. Test drops from aircraft are made intermittently, but testing does not restrict any fishing, recreational or commercial. At Duck Island, however, no person or vessel can enter or remain in the danger zone from 8:00—5:00 p.m. daily, except when otherwise indicated.

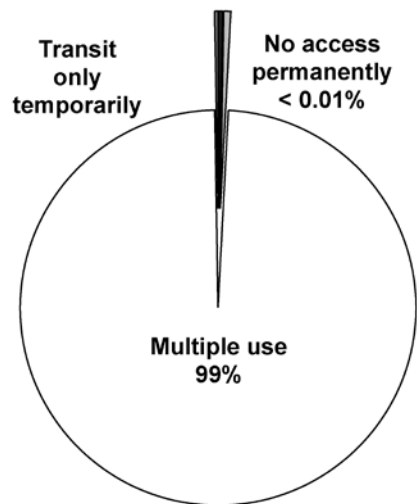
Who manages DFMPAs in New England?

The Coast Guard manages more DFMPA area (98% of total DFMPA in New England) than any other agency (Graph 24) in New England region. Most of the 150 sites managed by the Coast Guard regulate shipping traffic in and out of ports or anchoring of these ships once they have reached their destination. Typically, vessels must maintain contact with port authorities to avoid collisions and time the movements of ships into and out of ports. With the recent anti-terrorism

Graph 24 (L)
New England DFMPA area by management agency (number and percent area). Several DFMPAs are co-managed.



Graph 25 (R)
New England DFMPA area by level of restriction.



focus, the Coast Guard also has responsibility for monitoring suspicious activities and maintains the right to investigate or board vessels if necessary. During the Tall Ships Rhode Island 2004 event, the Coast Guard established various types of DFMPAs near Narragansett Bay, Rhode Island, which can be turned off and on as necessary.

The only other management agency with any significant jurisdictional area (2%) in New England is the Navy. Twenty-one DFMPAs are controlled by the Navy, including the Narragansett Bay, East Passage, Anchorage A, where only Navy vessels are allowed to anchor. All five danger zones are also under the control of the Navy, as are all of the restricted areas. Portsmouth Naval Shipyard, one of four remaining naval shipyards in the nation, is used for building, remodeling, and repairing the Navy's ships. The yard was established in June 1800, making it the oldest continuously-operating shipyard of the Navy.

Can people access DFMPAs in New England?

Access is permitted in almost all of the DFMPA area in New England (98%), with only minor restrictions to prevent the obstruction of commercial traffic (Graph 25; Map 26). For example, the Connecticut River, the Thames River and the traffic lanes on the approach to New York are all multiple use areas where regulations prohibit building permanent structures or the installation of submerged equipment.

Less than 1% of the DFMPA area (21 km²) in New England is transit only. This occurs in a single site, Narragansett Bay, which is transit only year-round to secure the underwater extensive cable system in Narragansett Bay.

Insignificant portions (<0.01%) of the DFMPA area in New England are no access, and most of this is only temporarily off limits. Seal Island is



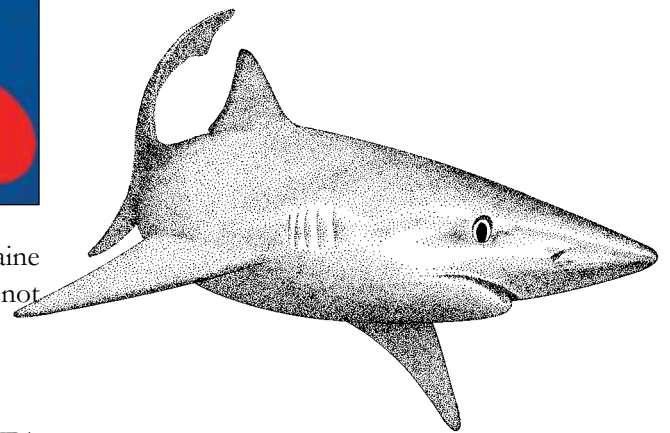
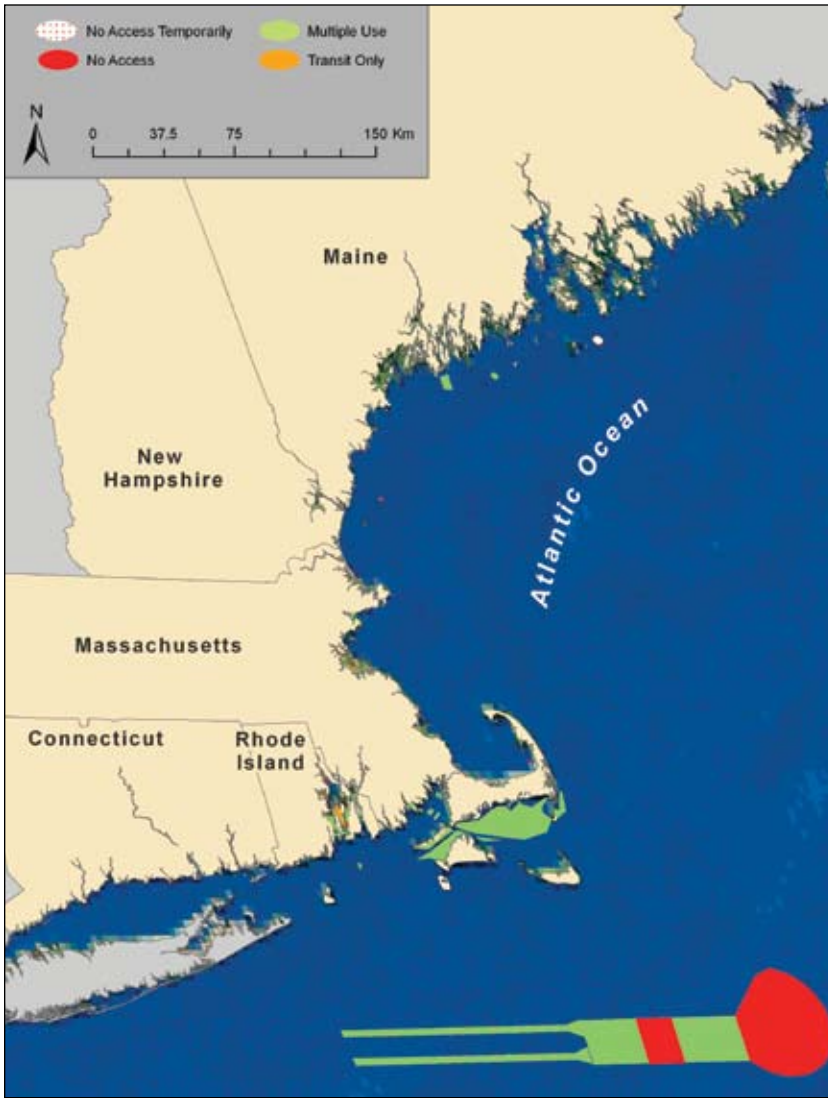
Map 25
Types of DFMPAs in New England..

seasonally off limits and the waters around No Man's Land off Southern Rhode Island are closed due to Navy operations. Together, these two areas comprise more than 90% of the no access area in this region.

Eighteen small DFMPAs do not allow access on a year-round basis. Three are adjacent to nuclear power plants, such as Pilgrim Nuclear Power Plant. Areas at the U.S.S. Constitution and

Box 13 New York Harbor

The Port of New York/New Jersey is the largest port complex on the East Coast of North America and is located at the hub of the most concentrated and affluent consumer market in the world, with immediate access to the most extensive interstate highway and rail networks in the region. In addition, the Port Authority directly oversees the operation of seven cargo terminals in the New York-New Jersey region. The dollar value of cargo moving through New York Harbor in 2006 exceeded \$149 billion.



Map 26 (Above L)
Level of restriction
of DFMPAs in New
England.

Map 27 (Above R)
Aggregate no access
year round area in New
England. Red dot does
not indicate the location
of a specific DFMPA.
Rather, it indicates the
total no access year
round area for all DFMPAs
in New England.

the Portsmouth Naval Shipyard in Kittery, Maine secure historical shipyard facilities are also not accessible at all times.

Summary

Relative to the rest of the U.S., the total DFMPA area in New England is small, and most of this is concentrated around the approaches to New York harbor. Activities that constrain or impede the movement of large commercial vessels are prohibited in and around this major commercial shipping lane, but only a tiny portion (< 1%) of the region is closed to public access year-round. Less than 11 km² is inaccessible to the public and this small area is divided into individual DFMPAs (Map 27), most of which are located close to or adjacent to industrialized sections of the coast. Many of these DFMPAs abut nuclear power stations, while others are part of target and bombing practice areas.



GREAT LAKES DE FACTO MPAS

AT A GLANCE

- A small portion of nation’s total DFMPA area is in the Great Lakes
- Danger zones make up almost all of the DFMPA area in region
- 95% of the DFMPA occurs in just two sites; most of it in the Air Force’s Volk Field Air National Guard Base
- Anchorages are most common type of DFMPA
- DFMPAs occur in every lake in the region



Background

A fraction (just 2%) of the Great Lakes regional waters occurs in 69 DFMPAs (Map 28). This region is dominated by two DFMPAs: the Air Force’s Volk Field Air National Guard Base danger zone and St. Mary’s vessel traffic service area. Together these two sites make up almost the entire DFMPA area for the region. Volk Field is the largest and is located offshore in Lake Michigan, though the zone rarely, if ever, affects people in the water. The vessel traffic service area of St Mary’s River is a narrow, geologically constricted passageway that links three Great Lakes -- Superior, Huron and Michigan -- earning this area the nickname, “Hub of the Great Lakes”. Other DFMPAs are distributed throughout the Great Lakes (see Map 28). Anchorages occur in each of the Lakes, but are generally small. The smallest DFMPA in the region is Chicago Harbor, Anchorage E. DFMPAs occur in every state along the Great Lakes region, though more are located in Illinois than any other state (see Table 11). New York, Wisconsin and Michigan each have several

DFMPAs, many of which are located adjacent to nuclear power stations. Minnesota and Indiana, with their relatively small coastlines, each have only a single DFMPA.

	Number of DFMPAs
Illinois	20
New York	15
Wisconsin	12
Michigan	11
Ohio	9
Minnesota	1
Indiana	1

Table 11

Number of DFMPAs by state in the Great Lakes.

What types of DFMPAs exist in the Great Lakes?

Six danger zones are located in the Great Lakes, which comprise close to 75 percent of the total DFMPA area (Graph 26; Map 29). While Volk Field is enormous, the site is rarely used to practice simulating air to surface procedures. Other danger zones include Northerly Island, Zone B, the U.S.

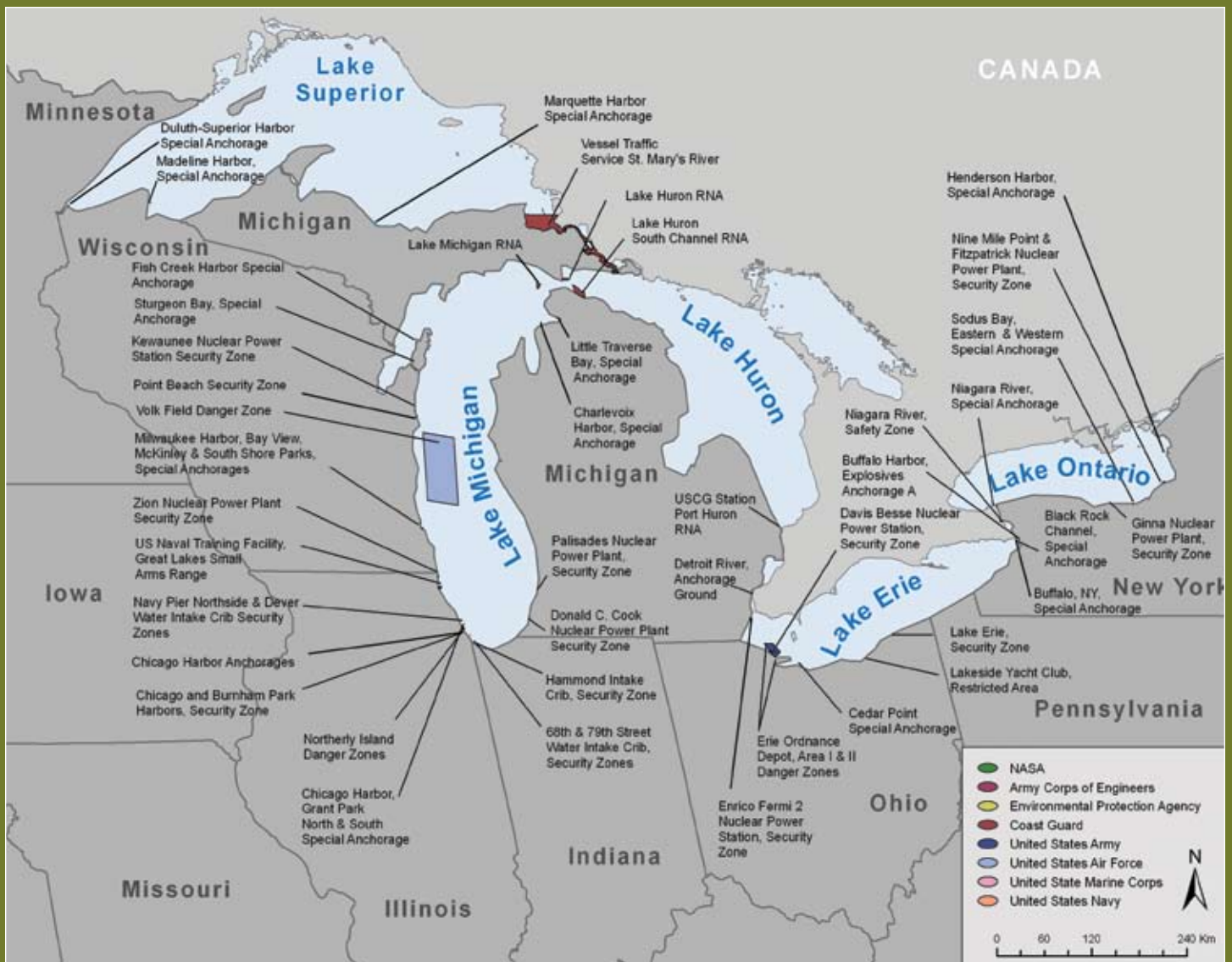
MAP BELOW:

DFMPAs occur along the shores of each of the Great Lakes. Along the St. Mary's River, a network of DFMPAs connect Lake Superior with Lake Huron. DFMPAs near Mackinaw Island also connect Lake Huron with Lake Michigan. Within Lake Michigan is the large offshore DFMPA called Volk Field Danger Zone as well as several security zones associated with Kewaunee and Zion nuclear power stations. Within Lake Erie lies Erie Ordnance Depot, Enrico Fermi 2 Nuclear Power Station and anchorages around Buffalo, New York. Along the shores of Lake Ontario, several DFMPAs are situated near cities, including Henderson harbor and Niagara River special anchorage.

SUMMARY STATS

- 3% of regional waters
- 69 sites
- 2% of total U.S. DFMPA area
- 4,674 km²

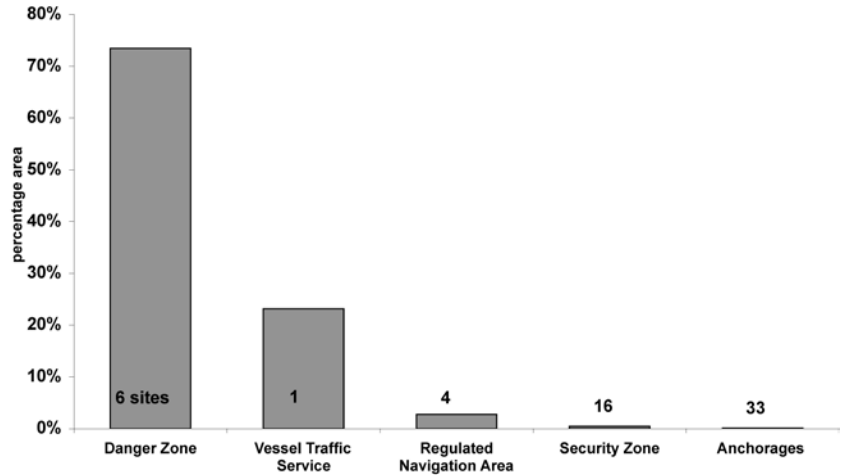
Map 28 DFMPAs by management agency in the Great Lakes with names of individual sites.



Naval training facility Great Lakes Small Arms Range and the Erie Ordnance Depot Area I. All six of the danger zones of the Great Lakes are associated with these sites, and were designated to protect the public from target practice, bombing, rocket firing or other hazardous operations.

While the St. Mary's River vessel traffic service area is the only one in the region, it covers a large area (> 1000 km²). Here lake freighters and ocean-going ships traverse the locks between Lake Superior to the north and Lake Huron to the south, making this a major shipping corridor between the U.S. and Canada. Other shipping areas include the four regulated navigation areas. The largest is the Lake Huron, South Channel, while the smallest DFMPA controls traffic around the Coast Guard Station at Port Huron.

There are 17 security zones in the region, many of which either currently are or were once nuclear power plants. For instance, Zion, Ginna, Palisades, Nine Mile Point and Fitzpatrick and Davis Besse are or were nuclear power stations with security zones established in the waterways around them. These areas are extremely small, most less than 1 km². All



of these sites occur close to shore along the banks of Lake Michigan, Lake Erie and Lake Ontario.

As with most other regions, the number of anchorage DFMPAs is greater than any other type. Most of these occur around busy ports such as Chicago, Milwaukee, Cleveland, and Buffalo. All of these anchorage areas are small, less than 0.5 km², and provide safe harbor for commercial and recreational vessels.

Graph 26
Types of DFMPAs in the Great Lakes (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.



Map 29
Types of DFMPAs in the Great Lakes



Two restricted areas occur in the Great Lakes region. The Lakeside Yacht Club restricted area provides security for the Burke Lakefront Airport in Cleveland. The Niagara River safety zone limits access to the Niagara Mohawk Power Corporation facility for safety and environmental purposes.

Who manages DFMPAs in the Great Lakes?

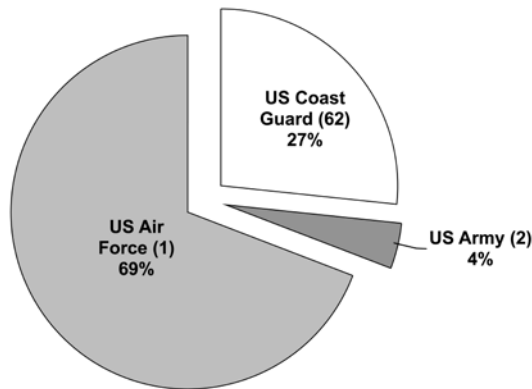
The Air Force manages most (69%) of the DFMPA area in the Great Lakes region (Graph 27), as it controls the Volk Field danger zone. This danger zone is part of the Volk Field Air National Guard Base, a joint facility with the Wisconsin Air National Guard supporting the Combat Readiness

Training Center and the 128th Air Control Squadron.

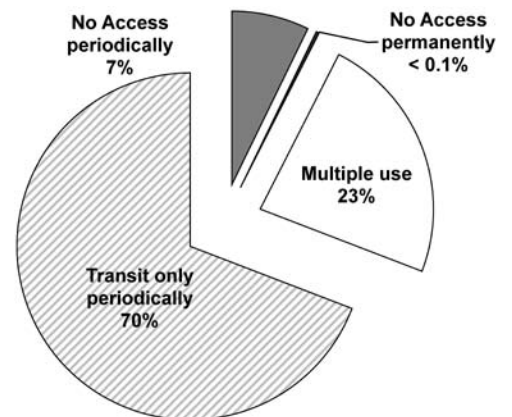
The Coast Guard manages 27% of the total DFMPA area in 62 sites, with more sites than any other management agency in the region. Most of these are anchorages and the security zones located around the active and decommissioned power plants of the Great Lakes.

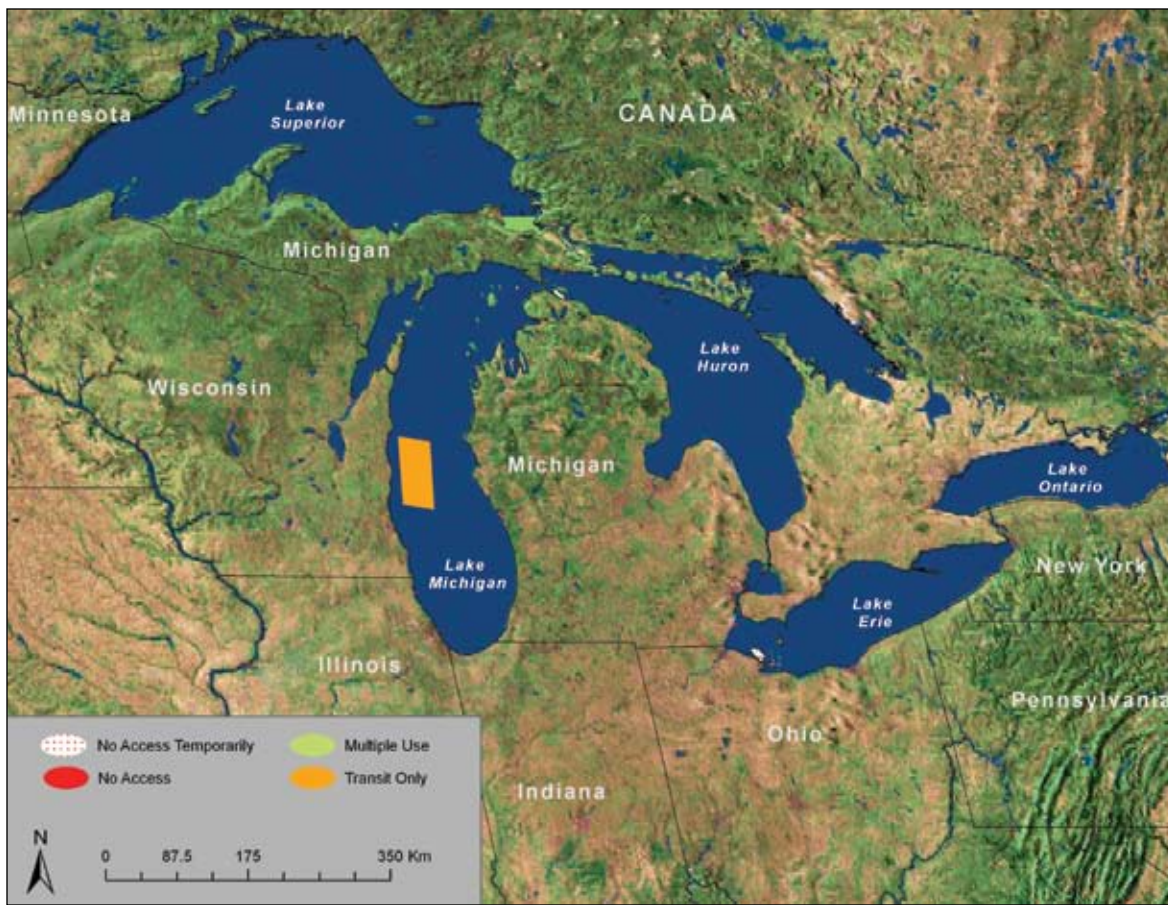
The only other management agency with any significant DFMPA area in the Great Lakes region is the Army, with only two sites. Both of these are located at the Erie Ordnance Depot, Area I and II (see Box 14).

Graph 27 (L)
Great Lakes DFMPA area by management agency (number and percent area). The number of sites is indicated in parentheses.



Graph 28 (R)
Great Lakes DFMPA area by level of restriction.





Map 30
Level of restriction of DFMPAs in the Great Lakes.

The remainder of the DFMPA area in the Great Lakes is managed by the Navy and the Federal Aviation Administration (FAA). The Navy manages four relatively small sites, all of which occur at the Northerly Island danger zone and a U.S. Naval training facility. These areas are so small that they contribute little to the regional total. A single site is managed by the FAA; the Lakeside Yacht Club restricted area. Here, vessels above a certain height must promptly inform the Burke Lakefront Air Traffic Control Tower at Cleveland Airport of their activities to avoid safety concerns during takeoff and landing for commercial planes.

Can people access DFMPAs in the Great Lakes?

Only one site (Volk Field) in the Great Lakes is transit only for brief periods during the year (Map 30). Most of the time mariners are unaware of the existence of this site and conduct normal boating and shipping activities without concern.

Most of the DFMPAs (40) in the Great Lakes are open to public uses year-round (Graph 28). Most of these multiple use DFMPAs are anchorages, but also include St. Mary’s vessel traffic service area and Navy Pier Northside in Chicago.

A small portion (7%) of the Great Lakes’

BOX 14 Erie Army Depot danger zone

The Erie Army Depot is located on a 3 mile stretch of beach on Lake Erie between the Touissant River and Camp Perry. This site was set up in 1918 when the Department of Defense purchased the Erie Army Depot to test and proof fire Army artillery and serve as a storage depot. Small caliber items, artillery, mortar shells and rockets are tested at this site. Contamination likely originates from the ordnance activities area and the landfill.

DFMPA area is no access temporarily. Some are seasonally no access during periods when ice and weather make navigation dangerous, while others are temporarily no access during periods when training operations occur. DFMPAs such as Chicago and Burnham Park Harbors and Lake Huron, South Channel are periodically closed.

Less than 1% of the DFMPA area in the Great Lakes is permanently no access. These 16 DFMPAs limit access year-round to the public because of risk to public health and safety. Most of these sites are tiny (< 1 km²) and include all of the nuclear power plants and power stations, such as Enrico Fermi 2 and Kewaunee Nuclear Power Plants. These sites occur along the coastline of most of the Great Lakes, distributed close to many of the major cities in the region (i.e., Chicago, Buffalo, Milwaukee), with small security zones around the power stations to provide protection from sabotage and accidents.

in a single rarely, if ever, used DFMPA in Lake Michigan. The remaining DFMPAs generally are located for navigating commerce through the rough waters and narrow passageways of the Great Lakes. Almost all of the Great Lakes DFMPA area is open access to various recreational and commercial activities. The few, small no access DFMPAs of the region are distributed across the region, throughout the different Great Lakes. These 16 individual sites, which in total comprise 22 km², occur in the near-shore coastal habitat. Individual sites are small, typically 1 km², and tend to occur in areas heavily impacted by development, industrial pollution, and commercial activities. Most of the no access year round DFMPAs are adjacent to existing or decommissioned nuclear power stations, water intake cribs, or unexploded ordnance areas. Future conservation efforts in the Great Lakes may identify defunct DFMPAs as areas that could contribute to conserving valuable marine resources of the Great Lakes.

Summary

A small portion of the Great Lakes (<5,000 km²) exists in DFMPAs, and most of this occurs

Map 31

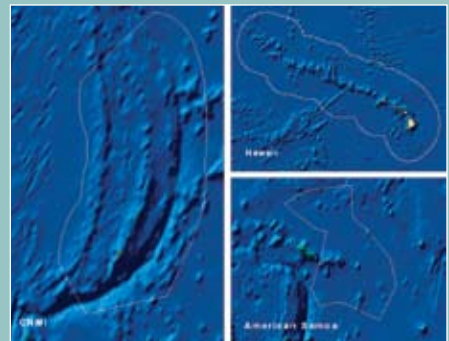
Aggregate no access year round area in the Great Lakes. Red dot does not indicate the location of a specific DFMPA. Rather, it indicates the total no access year round area for all DFMPAs in the Great Lakes.



PACIFIC ISLANDS DE FACTO MPAs

AT A GLANCE

- Small fraction of the national total DFMPA area
- 59 sites, most of which are dedicated to military training
- Sites exist in Hawaii, Guam and CNMI, but none occur in American Samoa
- Danger zones make up 90% of the total DFMPA area



Background

A minute portion of the Pacific Islands regional waters (< 0.01%) is contained in 59 individual DFMPAs (Map 32). Nearly all of this area occurs in a single site on Hawaii, at the Kaena Point Light Danger Zone on the western side of Oahu. The main Hawaiian Islands boasts the greatest number (39) of DFMPAs in the Pacific Islands. Guam has 15 sites and five occur in the Commonwealth of the Northern Mariana Islands (CNMI), a chain of 14 volcanic islands. Although American Samoa is located in the Pacific Islands region, no DFMPAs occur here (see Map 32). Oahu, part of the main Hawaiian Islands, contains the greatest number of DFMPAs compared to any other island in the region. Most of the DFMPAs are small, though the few large sites, most of which are danger zones, greatly inflate the regional total. The smallest DFMPA is the security zone around the Naval Mooring Buoy No. 702 on Guam with less than 0.01 km². The five largest DFMPAs all occur in Hawaii (i.e., Kahoolawe Island, Kaula Rock

and the Pacific Missile Range Facility at Barking Sands). Almost all of the DFMPA area in the region supports the large military presence in the Pacific Islands established after WWII.

What types of DFMPAs exist in Pacific Islands?

Because of the considerable military presence in Hawaii and Guam, it is not surprising that most of



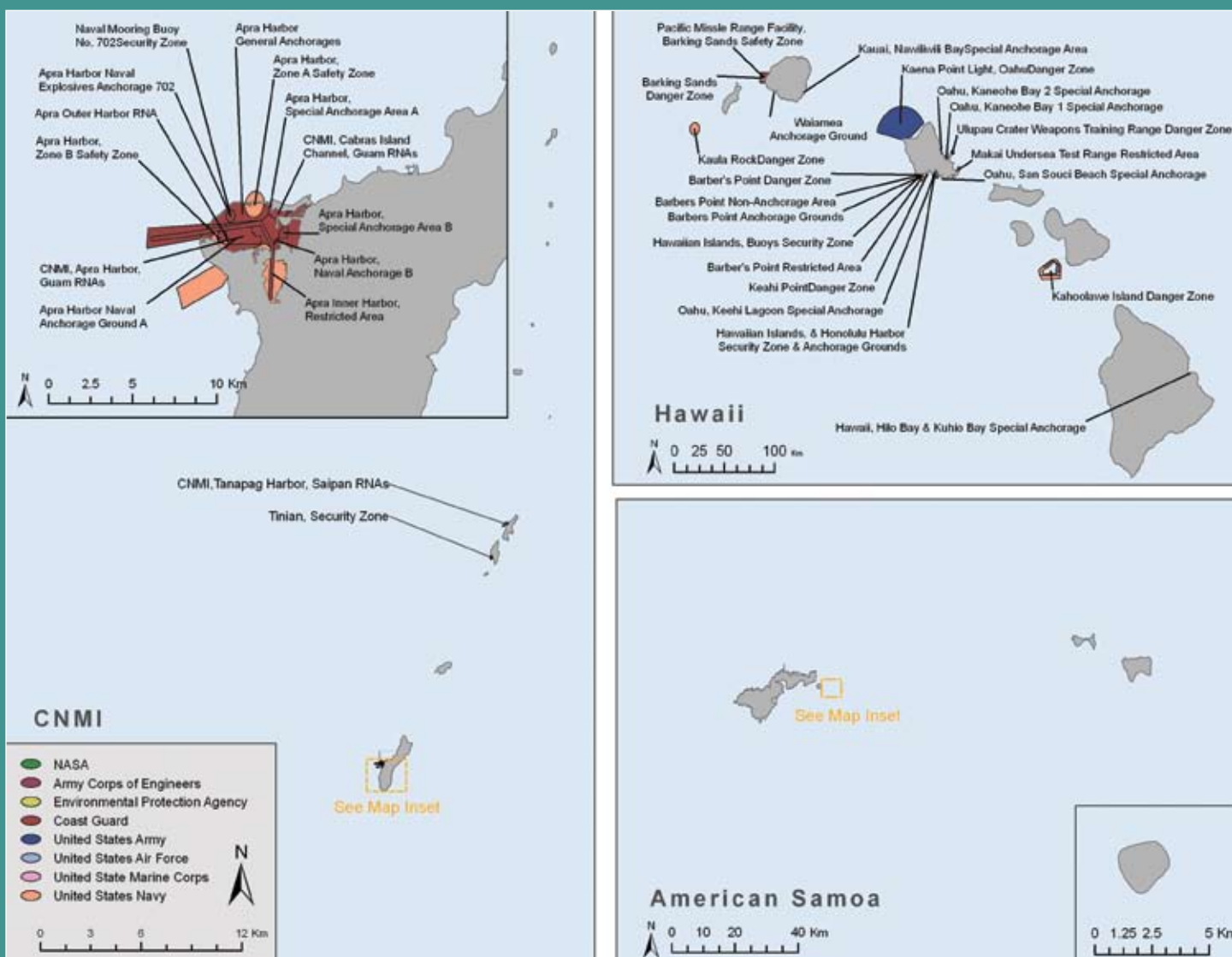
MAP BELOW:

DFMPAs are located within the main Hawaiian Islands, and the Marianas Islands of Saipan and Guam. American Samoa has no DFMPAs. On Guam, the majority of DFMPAs occur within and immediately around the entrance of Apra Harbor, and include several anchorages and military restricted areas and danger zones. In Tanapag Harbor on Saipan, a regulated navigation area was designated, and on the island of Tinian, a single security zone occurs. Within the main Hawaiian Islands, DFMPAs are distributed primarily around the island of Oahu and Kauai. A single DFMPA is located at Hilo Bay. No DFMPAs occur around the islands of Maui and Molokai. However, a large DFMPA at Kahoolawe Island was designated as a danger zone. While the United States has many other island territories within the Pacific Islands, DFMPAs do not occur in these areas.

SUMMARY STATS

- < 0.01% of regional waters
- 59 sites
- 1% of total U.S. DFMPA area
- 1,557 km² total area

Map 32 DFMPAs by management agency in the Pacific Islands with names of individual sites.



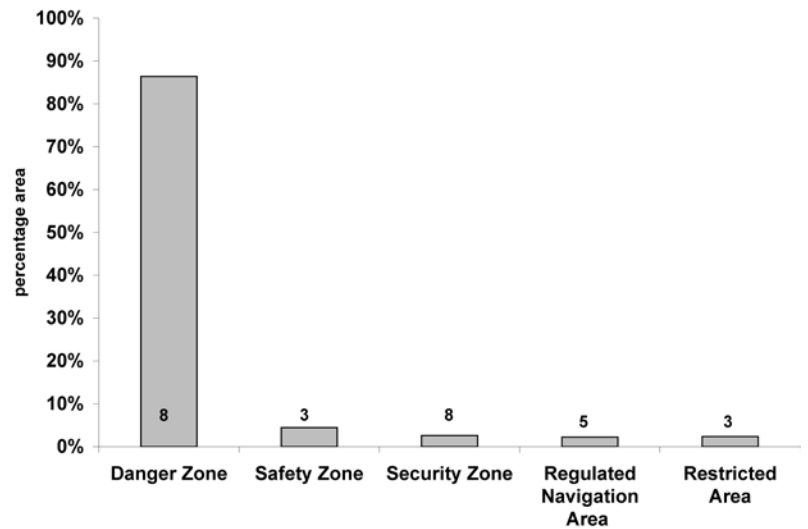
the DFMPA area in the region (close to 90%) is in danger zones (Graph 29; Map 33). For example, the danger zone at Kaula Rock protects the public from aerial bombing. The three largest DFMPAs are danger zones: Kaena Point (over 1,000 km²), Kahoolawe Island (200 km²) and Kaula Rock (90 km²).

Safety zones comprise the second largest type of DFMPA in the Pacific Islands, but occur in only three locations. Two are located in Guam and one is located in Hawaii. Portions of Apra Harbor in Guam are off limits to non-commercial and authorized vessels and the waters surrounding Pacific Missile Range at Barking Sands, Hawaii are off limits for safety reasons during launch operations.

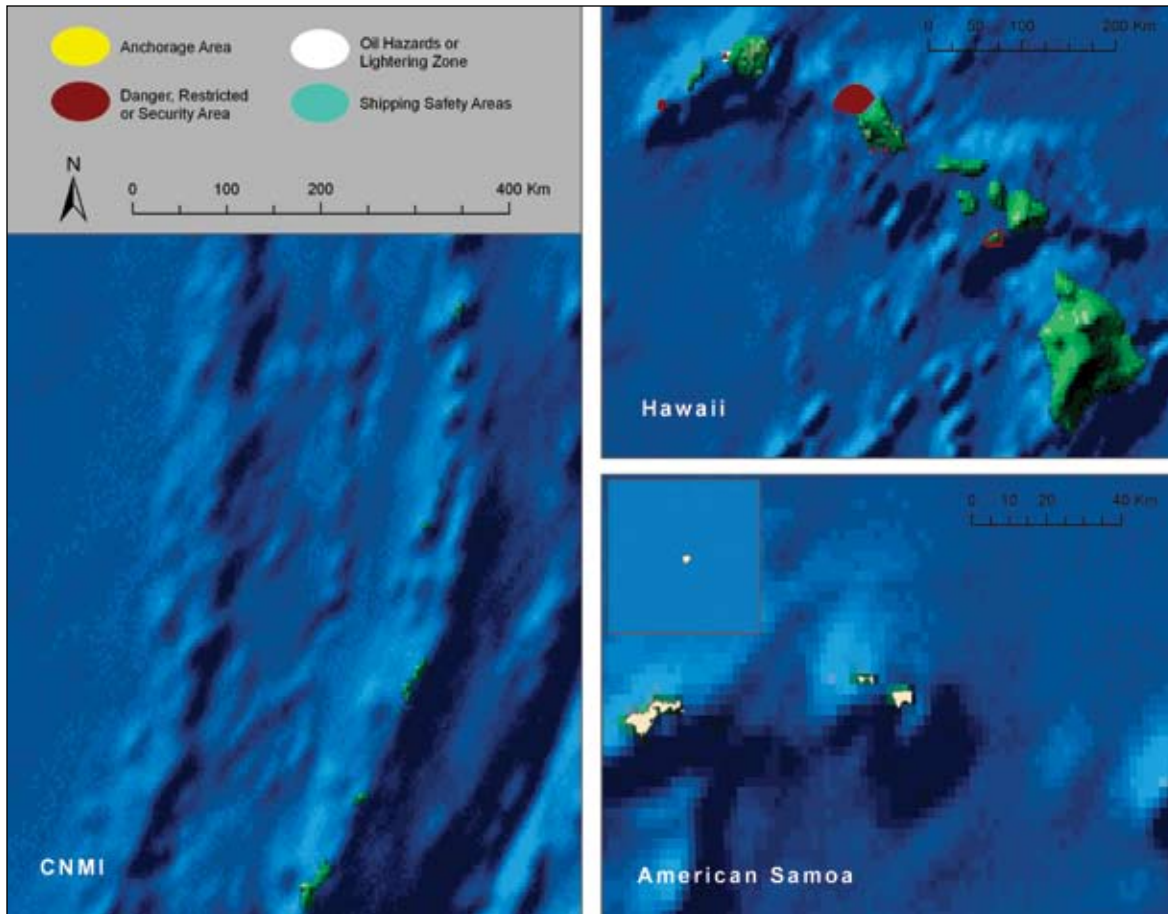
Eight security zones make up a small portion (2%) of the total DFMPA area of the region. Examples include Honolulu harbor and Barbers Point harbor, Oahu; Kahului Harbor on Maui; Nawiliwili Harbor, Kauai. These security zones safeguard sites throughout the Hawaiian Islands from destruction, loss, or injury from sabotage. For example, Tinian in CNMI was established as

a security zone to safeguard U.S. Marine Corps military ships when moored there.

A tiny fraction (1%) of the DFMPA in the Pacific is contained in regulated navigation areas in five sites. All of these occur in Guam (3) and Saipan (2). The largest, the CNMI Regulated Navigation Areas, Apra Harbor, Guam is close to 20 km².



Graph 29
Types of DFMPAs in the Pacific Islands (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.



Map 33
Types of DFMPAs in the Pacific Islands.

Only three restricted areas are located in the Pacific Islands. Barber’s Point Restricted Area, the largest at more than 20 km², provides security for underwater installations (e.g., submarine pipelines and cables) off Barber’s Point. Similarly, the Makai Undersea Test Range provides security while underwater robots are being tested off the southeastern coast of Oahu.

Who manages DFMPAs in the Pacific Islands?

The U.S. Army regulates nearly two-thirds of the DFMPA area in the Pacific Islands region (Graph 30). All of the area managed by the U.S. Army occurs in a single large site- Kaena Point Light, Oahu (see Box 15). This site is just over 1,000 km² and was established to protect the public from target practice, bombing, rocket firing or other hazardous operations. The U.S. Navy manages nearly a quarter (24%) of the

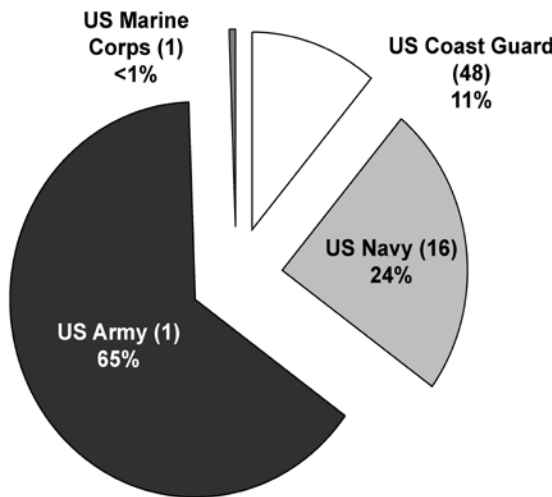
DFMPA area in 16 individual sites. The U.S. Navy is the primary manager of sites in the CNMI, in conjunction with the U.S. Coast Guard. The U.S. Navy regulates several safety and security zones around Apra Harbor and Orote Point in CNMI to ensure the safe and secure transport of cargo. In the main Hawaiian Islands, Barking Sands and Barber’s Point danger zone are both managed by the U.S. Navy.

Though the U.S. Coast Guard manages more DFMPAs (48) in the Pacific Islands than any other management agency, these sites are so small that they total only 11% of the total DFMPA area. The 26 anchorages in the region are all managed by the U.S. Coast Guard, such as Keehi Lagoon on Oahu and Hilo Bay on Hawaii.

Can people access DFMPAs in the Pacific Islands?

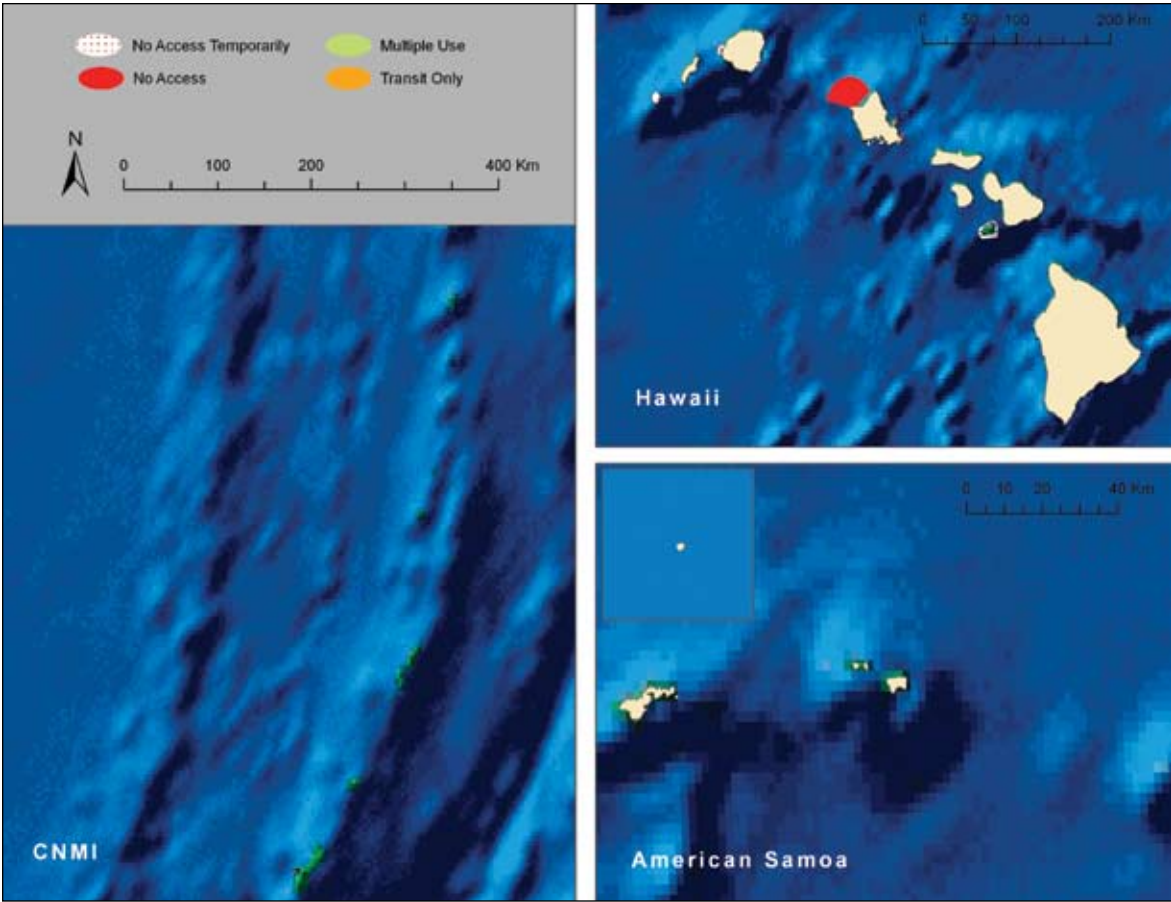
Unlike any other region, a large part (95%) of the DFMPA area in the Pacific Islands can be no access, at least part of the time (Graph 31; Map 34). Importantly, two thirds of this no access area is only temporarily off limits to the public, with most of this contained in one site- Kaena Point Light danger zone on Oahu. Access is prohibited on certain days during target practice, bombing, or rocket firing. Only a few additional sites are temporarily no access (e.g., Ulupau Crater Weapons Training Range, Apra Harbor Explosives Anchorage 701, Makai Undersea Test Range). About 30% of the DFMPA area in the Pacific Islands is no access on a year round basis. Three sites make up the bulk of this area: Pacific

Graph 30
Pacific Islands DFMPA area by management agency (number and percent area). The number of sites is indicated in parentheses.



BOX 15 Kaena Point danger Zone, Oahu, Hawaii

Kaena Pt. on Oahu supports the Air Force Satellite Control Network, which provides tracking, commanding, telemetry and commanding for over 100 satellites. This network provides launch and early orbit tracking of all major U.S. satellite launches. Globally there are ten worldwide locations and two control centers where satellites can be tracked and support is provided to the space surveillance system. This site provides earth to space connections that are required to fly operational military satellites. This tracking station is located on the crest of the ridge near the extreme west tip of Oahu at an elevation between 700 and 1,400 feet. The site includes a Global Positioning System (GPS) Monitor Station. Detachment 4 at Kaena Pt. is one of eight worldwide satellite tracking stations and serves telemetry, tracking and commanding functions for Department of Defense space assets, including weather, early warning, navigation, communications, and other high priority space programs.



Map 34
Level of restriction of DFMPAs in the Pacific Islands.

Missile Facility at Barking Sands, Kaula Rock and Kahoolawe Island (see Box 16). The waters off Barking Sands are no access year round due to the presence of the world’s largest instrumented multi-environment range, capable of supporting surface, subsurface, air, and space operations simultaneously. A site in Tinian, CNMI safeguards ships that are configured to transport supplies for the U.S. Marine Corps. Known as the Maritime Prepositioning Force, the ships were built or

modified beginning in the mid-1980s and are forward-deployed to the western Pacific Ocean, the Indian Ocean and the Mediterranean Sea. The ships contain nearly everything the Marines need for initial military operations -- from tanks and ammunition to food, water, fuel, spare parts and engine oil.

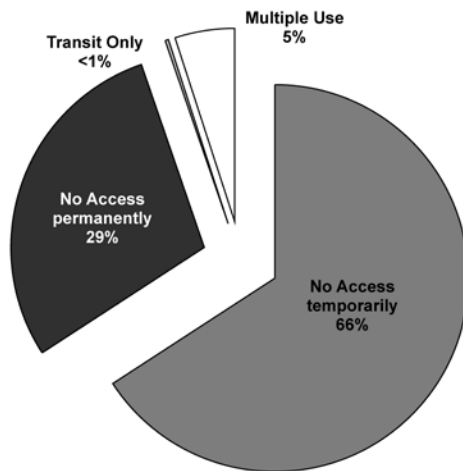
A small portion (5%) of the DFMPA area in the Pacific Islands is multiple use. The largest sites in the Pacific Islands are the CNMI Regulated



Box 16 Kahoolawe Island danger zone

In 1920, the U.S. Army and Navy began using Kahoolawe for target practice and began routine bombardment. In 1939, the territorial government leased the southern tip of the island to the Army for use as an artillery range. After the Japanese attack on Pearl Harbor, martial law was declared and the Navy took full control. The inhabitants were ordered off the island. For 30 years, the island was used for gunnery and bombing training by the Navy, and was routinely subjected to torpedo bombing. The largest crater, some 50 meters (165 feet) in diameter, resulted from the then most powerful non-nuclear bomb. In 1976, Native Hawaiians laid the groundwork for restoring Hawaiian control over the island, filing suit to stop the Navy's use of Kahoolawe for military training. In 1981, the island of Kahoolawe was placed on the National Register of Historic Places, and an island cleanup was initiated. Bombing of Kahoolawe was stopped by President George H. W. Bush in 1990. In 1993, the U.S. Government approved a \$400 million clean-up fund, and in 1994 Kahoolawe was officially returned to Hawaiians. Bombing was permanently prohibited. Today, a no take marine protected area exists around portions of the island. Kaho'olawe is surrounded by an extensive reef system, which is relatively intact. Because these waters are off-limits to fishing and commercial activities, this region acts as a fish sanctuary that works to replenish fish stocks throughout the islands.

Graph 31 (R)
Pacific Islands DFMPA area by level of restriction.



for military training. As such, most of this area is used freely for fishing, boating and recreational activities. A small portion (< 500 km²) is off limits year round, an area roughly equivalent to half the size of Volcanoes National Park, on the Big Island of Hawaii (Map 35). The remaining no access year round DFMPAs in the Pacific Islands are all small (<1 km²) and are spread throughout the Hawaiian Islands, except for one site in Tinian in CNMI.

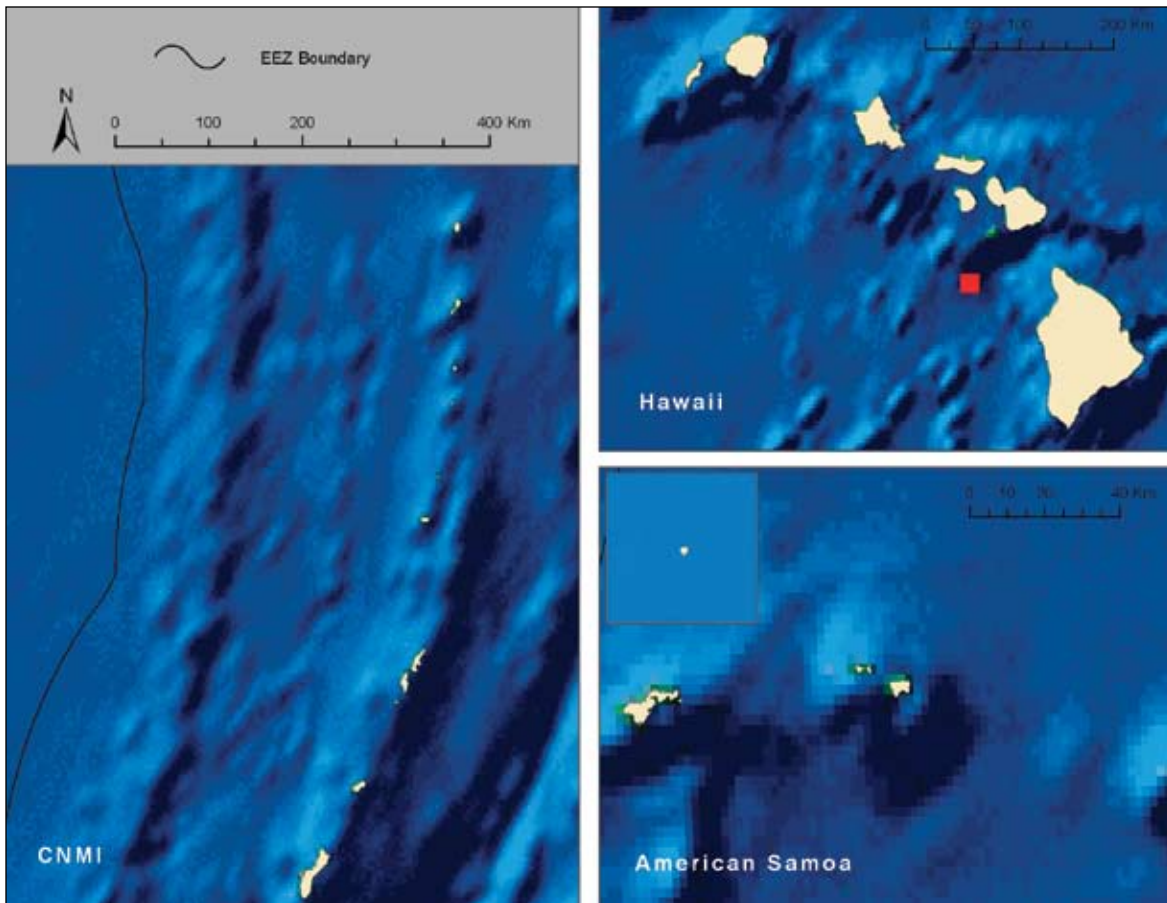
Navigation Areas in Saipan and Guam, which were designated to provide safe navigation for cargo ships moving supplies into the islands. The remainder of the multiple use sites are anchorage zones located in the harbors of Oahu, Maui, Guam, and Saipan, with the exception of Barber's Point Restricted Area, which provides security for underwater installations submerged there.

There are only three transit only areas all year round in the Pacific Islands, all of which occur in Hawaii. Barber's Point Non-Anchorage areas A, B and C (see Box 17).

Summary

A small portion of the Pacific Islands occurs in DFMPAs, most of which is used periodically

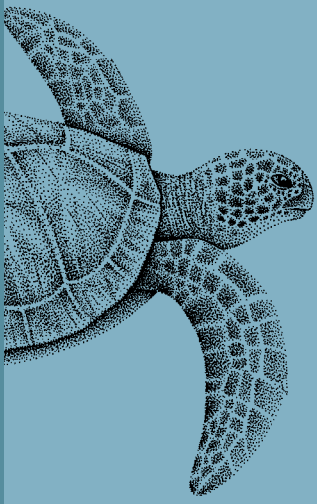




Map 35
 Aggregate no access year round area in the Pacific Islands. Red dot does not indicate the location of a specific DFMPA. Rather, it indicates the total no access year round area for all DFMPAs in the Pacific Islands.

Box 17 Barbers Point

The Navy’s last naval air station in the Hawaiian Islands has now closed, ending 57 years of service. Barbers Point--the “Crossroads of the Pacific,” carved out of brush and coral on the leeward side of Oahu early in World War II--was turned over to the state of Hawaii and is being conserved as a historical site. Barbers Point was named for Henry Barber, master of the Arthur, a 100-foot British brigantine that ran aground on the point of Oahu during a storm in 1796. Construction of the airfield began in November 1941, but was temporarily suspended after the Japanese attack on Pearl Harbor so that construction crews could rapidly complete Marine Corps Air Station Ewa. Barbers Point was still not complete when it was established as a naval air station on 15 April 1942.



CARIBBEAN ISLANDS DE FACTO MPAS



AT A GLANCE

- Majority of sites are danger zones, but most were recently decommissioned (90% reduction of DFMPA area)
- Controversial hand-over of land and marine jurisdiction is occurring in Puerto Rico
- Navy controlled more DFMPA area, but U.S. Army will soon manage more DFMPA than any other agency
- Remaining DFMPAs are anchorages

Background

Less area exists in DFMPAs in the Caribbean than any other region in the U.S., though 22 individual sites occur. These DFMPAs are distributed throughout the islands of Puerto Rico, Vieques and Culebra, where 14 individual DFMPAs occur. Around the U.S. Virgin Islands of St. Croix and St. Thomas eight DFMPAs are located. No DFMPAs exist off the island of St. John, U.S. Virgin Islands. As in the South Atlantic region, almost the entire DFMPA area is dedicated to the



military, with seven large danger zones located in the region (Map 36). DFMPAs off the eastern side of Vieques, Puerto Rico (a danger zone) and another large site off the island of Culebra, Puerto Rico make up the bulk (85%) of the total DFMPA area in the region. Historically access was limited in these areas, due to dangerous training operations that occurred here. However in 2003, the U.S. Navy withdrew from the region and many DFMPAs were decommissioned. While these sites remain in the federal register, effectively the sites do not exist since they are never activated and the Navy has no plans to use them in the future.

The Naval danger zones were located in some of the best coral reef ecosystems of the U.S. territories, and although small portions of the DFMPAs were used as bombing areas, large sections were left untouched by humans. Consequently, considerable portions of the danger zones served as refugia for seagrass beds, coral reefs, juvenile reef fishes, groupers, snappers, conchs, lobster and whelks. Populations and

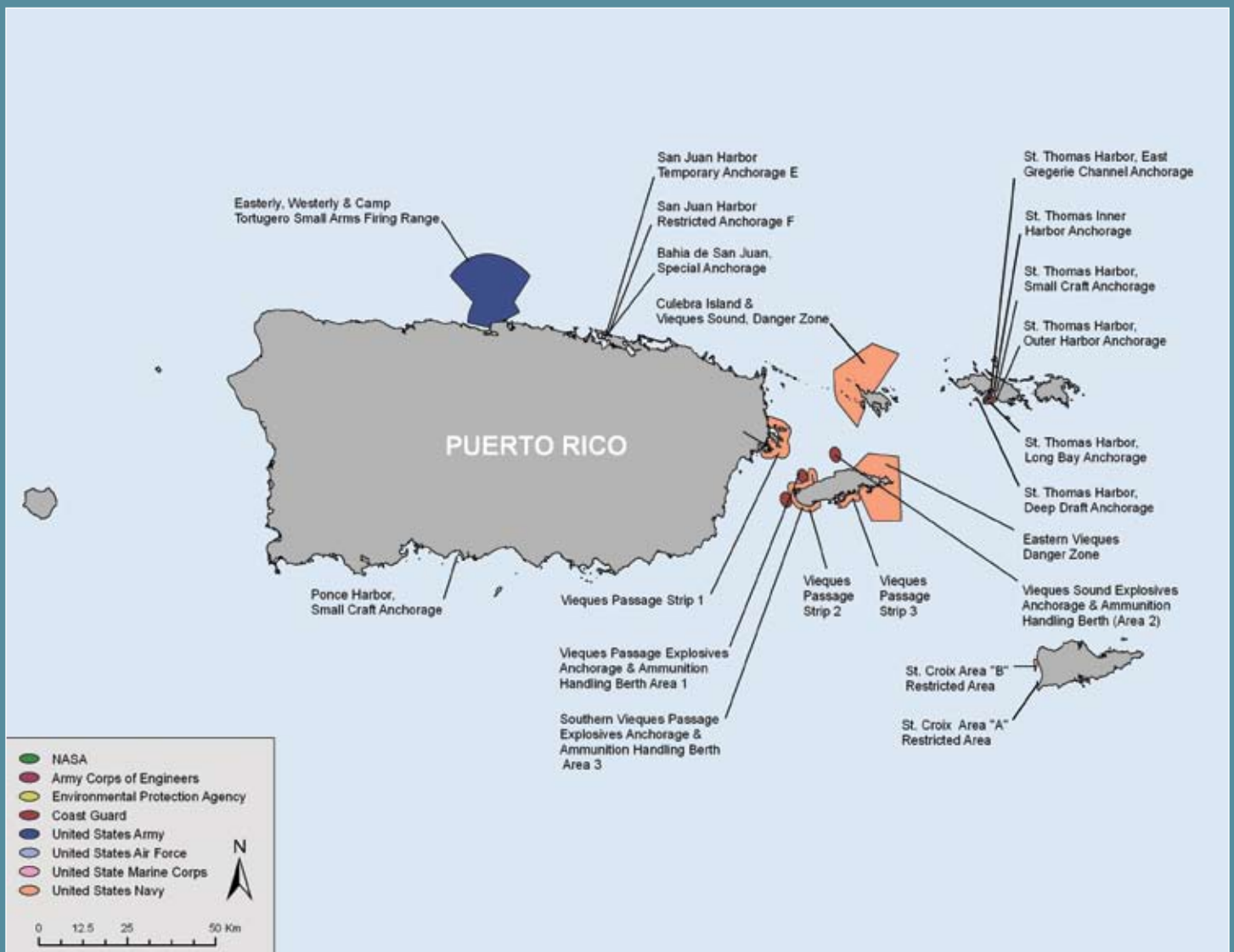
MAP BELOW:

The majority of DFMPAs in the Caribbean Islands are located on the islands of Puerto Rico, including Vieques, and on St. Thomas in the U.S. Virgin Islands. Several DFMPAs occur on the north shore of Puerto Rico around San Juan Harbor and on the eastern portion of the island where vessels transit to the neighboring islands of Vieques and Culebra. The western portion of Vieques was used as an anchorage and ammunition handling berth and the eastern portion of Vieques was formerly used by the military for target practice. A large danger zone also occurred on the northwestern coast off the island of Culebra. In the U.S. Virgin Islands, DFMPAs are located only around the island of St. Thomas, and most are associated with Charlotte-Amalie Harbor on the southern shore.

SUMMARY STATS

- < 0.001% of regional waters
- 22 DFMPAs
- < 0.1% of total U.S. DFMPA area
- 829 km²

Map 36 DFMPAs by management agency in the Caribbean Islands with names of individual sites.



the average size of individuals of these species increased, and marine habitats thrived in the areas untouched by humans. But, in 2004, the U.S. Navy handed over terrestrial portions of the Vieques Naval base to the U.S. Fish and Wildlife Service. The marine portions of Vieques may be handed over to the Commonwealth of Puerto Rico after thirty years of strict protection, however, while the future of these areas is being decided, these areas have been opened to fishing and exploitation. Locals and visitors to the region have boasted of the abundance of marine life within the danger zone areas. The U.S. Navy continues to clean-up unexploded ordnances in some portions of the danger zones, but does not use its authority to regulate fishing or habitat destruction.

Once all of the Vieques Naval DFMPAs are decommissioned, the DFMPA area in the Caribbean region will be cut by 90%. Once this occurs, anchorages will be the dominant DFMPA type in the region. Anchorages are primarily designated by the U.S. Coast Guard and used by the Caribbean cruise ship fleet, which visits San Juan and St. Thomas regularly. Other anchorages

are designated for the large sailing community that frequents this area. The smallest DFMPA is St. Thomas Harbor, Long Bay Anchorage, an area for inter-island ferries and cargo transport. The only significantly-sized DFMPA remaining in the region will be the Easterly, Westerly and Camp Tortugero Small-arms Range, which was established by the U.S. Army as a target firing area. This site is extremely large (just under 400 km²) and occurs on the northern shore of Puerto Rico in a secluded tropical dry forest region. The arms range flanks the northern coast and seagrass beds and fringing reef lies just offshore. In the 1990s, NASA conducted research (called the Coqui II experiments) on the behavior of the upper atmosphere by releasing Trimethylaluminum (TMA) at high altitudes (50-100 miles). Studies determined that rashes developed by swimmers may have been the consequence of lead fallout. No further ionospheric testing is planned. This site will be the only site managed by the military in the region, after the evacuation and clean-up of the Naval sites is complete.

BOX 18 **Some Of Best Coral Reef Habitats Located In Vieques Naval Station**

Off the island of Puerto Rico lies Vieques, an area which has received international attention as a consequence of a standoff between local residents and the U.S. Navy. Here, two restricted areas and a danger zone occur in some of the region's best coral reef habitat. The danger zone lies on the eastern shore, offshore from the former Navy Atlantic Fleet Weapons Training Facility and includes several areas (e.g., surface impact, live impact, and eastern conservation areas). Open detonation of retrograde munitions occurred and bombing and gunnery practice was conducted periodically. Access was prohibited only during live firing; otherwise the area was open to the public. Two restricted areas occur on the south/central and western side of Vieques. These areas prohibited access to users who were not on official business.

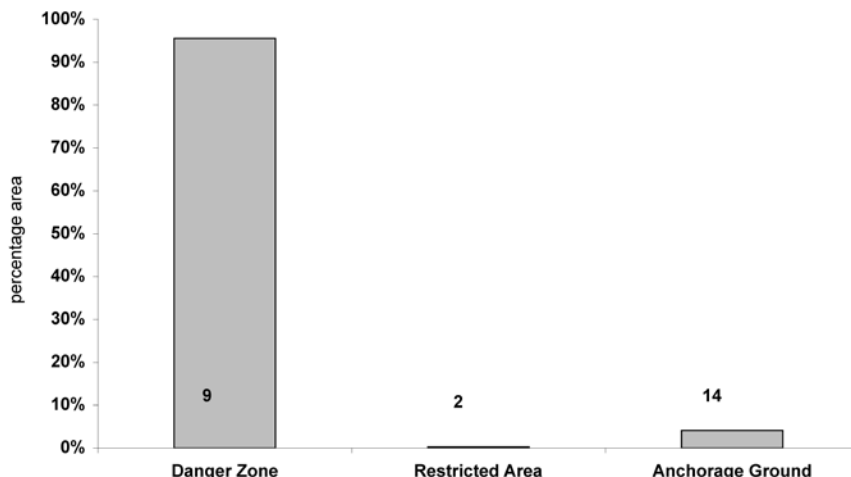
Coincidentally, most of the island's important coral reef habitats occur within these three DFMPAs. All of the mangrove habitat and extensive portions of the island's reef habitat are located within these DFMPAs. Restrictive zoning, enforced by naval officers, likely provided unintended protection to various marine resources and habitats. Access was limited, coastal development was prohibited and harvest of marine organisms was either strictly prohibited or managed. Although damage certainly occurred as a consequence of the military training (e.g., acoustic noise, hazardous materials contamination), certain marine populations may have benefited from protection afforded by these DFMPAs. With the decommissioning of these areas by the U.S. Navy, active management of these areas will cease and the future of these coral reef habitats is unknown.

What types of DFMPAs exist in the Caribbean Islands?

At this time, almost all the DFMPA area (95%) in the Caribbean region occurs in nine danger zones, though only one remains active (Graph 32; Map 37). These sites are distributed primarily in the islands of Puerto Rico, though many are clustered around Vieques. The southern Vieques Passage explosives anchorage and ammunition handling berth (Area 1, 2 &3) used to be areas for loading and unloading hazardous materials. Only one danger zone is currently used for boats that require quarantine.

Fourteen anchorage grounds exist in the region, comprising only 2% of the DFMPA area. Most occur in the U.S. Virgin Islands within the busy cruise ship ports of Charlotte Amalie, St. Thomas and Fredericksted, St. Croix, with several in San Juan, Puerto Rico. These anchorages help to separate commercial and recreational vessels, so that cruise ships have the berth space necessary to safely dock and unload passengers. Coast Guard designated anchorages help to keep recreational boaters out of dangerous commercial boating areas.

Two restricted areas occur in the Caribbean Islands region, both of which are extremely small.



St. Croix Area A and B are sites where anchoring was reserved for Naval vessels coming from Roosevelt Roads. With the decommissioning of Roosevelt Roads, Naval Station, private vessels will be able to use this area freely.

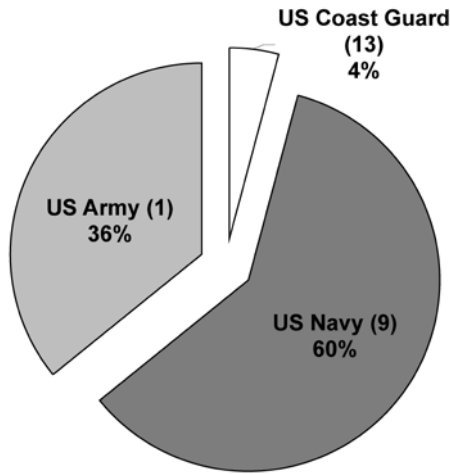
Who manages DFMPAs in the Caribbean Islands?

The U.S. Navy has jurisdiction over more DFMPA area (60%) than any other agency in the region, though with their withdrawal to Mayport, Florida,

Graph 32
Types of DFMPAs in the Caribbean Islands (number and percent total of DFMPA area). The number of sites is indicated in the bar. The percentage of the total DFMPA area for this region is indicated on the y-axis.



Map 37
Types of DFMPAs in the Caribbean Islands.



Graph 33
Caribbean Islands DFMPA area by management agency (number and percent area). The number of sites is indicated in parentheses.

they will be effectively absent from these areas (Graph 33). While the nine DFMPAs that they currently manage will legally remain in the CFR during clean-up and evacuation, their future remains uncertain. It is likely that their existence will remain in place in case of a new military threat that requires operations in the Caribbean, although the sites will be effectively abandoned until such time that they are deemed necessary.

The U.S. Army controls a considerable portion (36%) of the DFMPA area of the Caribbean Islands in a single site, Easterly, Westerly and Camp Tortugero Small-arms Range. A few times a year, a warning to mariners is issued to leave the area

while vessels tow targets through the water while shore-based operations actively engage in practice firing on this remote stretch of coastline.

As with most other regions in the U.S., the U.S. Coast Guard manages more individual sites than any other agency. Thirteen individual sites exist, and all of these were designated to provide safe anchoring. With the relocation of the U.S. Navy, the U.S. Coast Guard and U.S. Army will be the only agencies actively managing DFMPAs in the region.

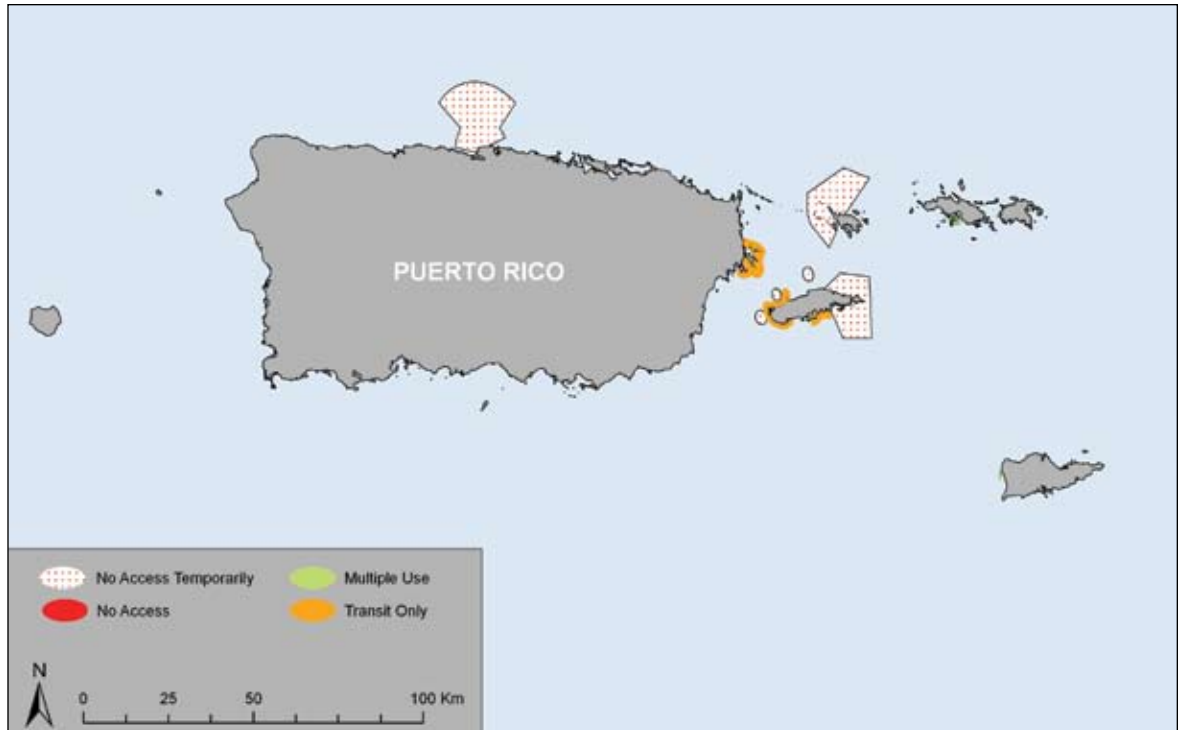
Can people access DFMPAs in the Caribbean Islands?

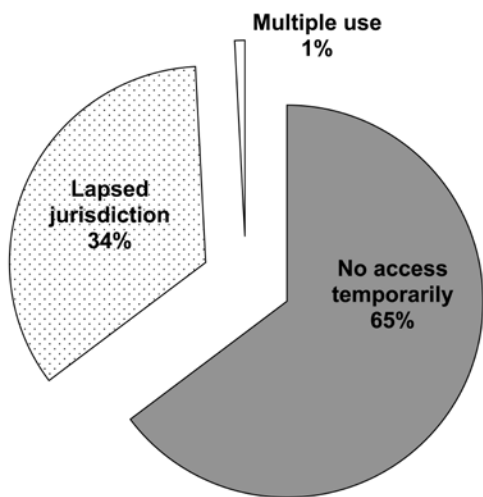
There is little, if any, active regulation or restriction, on human activities within DFMPAs in the region (Graph 34; Map 38). The U.S. Army Camp Tortugero is the only site where access is limited, and this occurs only a few times a year, if at all. Rather, the Caribbean region has the distinction of being the only region in the U.S. where no portion of the DFMPA area is off limits year round. Most of the DFMPA is, or will soon be, lapsed and unused.

Summary

While 22 individual DFMPAs presently occur in the Caribbean region, significant changes are

Map 38
Level of restriction of DFMPAs in the Caribbean Islands.

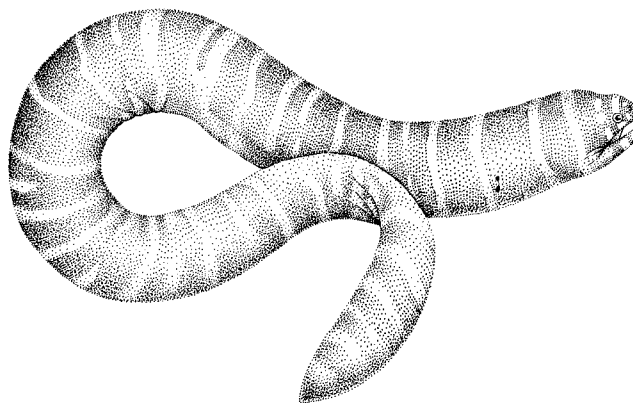


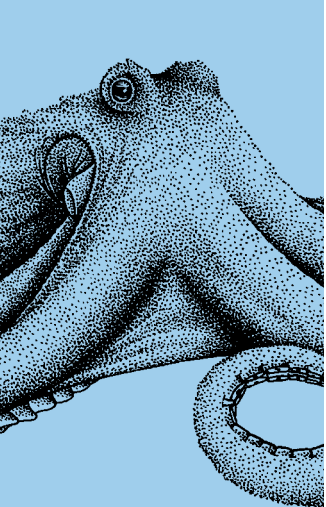


future of most of the marine habitat in these soon defunct DFMPAs remains uncertain. While the Commonwealth of Puerto Rico has considered converting these areas to marine protected areas, the DFMPAs are presently open access to most human activities. Once these areas are decommissioned, anchorages will be the dominant type of DFMPA in the region.

Graph 34 (Above)
Caribbean Islands
DFMPA area by level of restriction.

occurring, which will dramatically reduce the DFMPA area (by 90%). The decommissioning of most of the DFMPA area in the region may represent a tremendous opportunity for conservation. Though the military used portions of these danger zones for bombing, causing significant damage in some areas, much of the area was left unharmed. Furthermore, because protection was strictly enforced, the ecological communities within the dry tropical forest, mangroves, and reef ecosystems thrived. The U.S. Fish and Wildlife Service worked with the U.S. Navy to acquire large parcels of terrestrial habitat and these were converted into a protected area as part of the Vieques National Wildlife Refuge. The





GLOSSARY

Cargo Freight or merchandise on a transportation vehicle (ship or plane), but not passengers.

Exclusive Economic Zone An area contiguous to the territorial sea of the United States, the Commonwealth of Puerto Rico, the Commonwealth of Northern Mariana Islands, and the U.S. overseas territories and possessions and extending 200 nautical miles from the coastline.

Firearm A kinetic energy weapon that fires either a single or multiple projectiles propelled at high velocity by the gases produced by action of the rapid confined burning of a propellant.

Hot Zone A location of active military training

Internal Waters Waters under the exclusive jurisdiction of the State or territory.

Marine A soldier serving on shipboard; a sea soldier; one of a body of troops trained to do duty in the navy

Maritime Situated on or near the sea

Military Aviation Includes any use of aircraft by a country's military, including such areas as transport, training, disaster relief, border patrol, search and rescue, surveillance, surveying, peacekeeping, and (very rarely) aerial warfare.

Multiple Use Allows a variety of human activities

Munitions Often defined as a synonym for ammunition. A slightly broader definition would include bombs, missiles, warheads, and mines.

Nautical Relating to or involving ships or shipping or navigation or seamen

Ordnance Military materiel, such as weapons, ammunition, combat vehicles, and equipment

Regional Waters U.S. waters in the affected region, including the E.E.Z., Territorial Sea, and internal waters. Typically refers to marine waters from 0-200 nautical miles (nm) offshore

Regulated navigation area (RNA) Areas in coastal and marine waters that are designated to control vessel traffic around ports and harbors

Strafing Attack (ground troops, for example)

with a machine gun or cannon from a low-flying aircraft

Territorial Sea The territorial sea of the United States is a maritime zone extending beyond the land territory and internal waters of the United States over which the United States exercises sovereignty and jurisdiction, a sovereignty and jurisdiction that extend to the airspace over the territorial sea, as well as to its bed and subsoil (0-12nm).

Transit Make a passage or journey from one place to another

U.S. Waters Include the Exclusive Economic Zone (3-200nm), Territorial Sea, and internal waters

Vessel Traffic Service A program that provides marine traffic management of an advisory nature, and occasional emergency control, to reduce collisions and strandings in heavily trafficked ports.

Warning Areas Typically refers to an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times. A specified area above, below, or within which there may be potential danger. Such areas are not included in the De facto MPA database, as they typically do not have jurisdiction over marine areas.

Appendix I

Methods and Classification Scheme

Criteria – The criteria to establish whether or not an area is a de facto MPA were designed to be consistent and complimentary with the existing MMA Inventory effort and include:

- **Area** Must have legally defined boundaries
- **Reserved** Established by or currently subject to law or regulation
- **Restrictions** Access and activities are more highly regulated or restricted within the area than surrounding waters
- **Duration** Restrictions enacted for a minimum of ten years duration. Within a calendar year, a minimum of three days restriction (does not need to be continuous)
- **Marine** An area of ocean or coastal waters or the Great Lakes

There are two main types of MPAs, those that limit entry or restrict activities within their boundaries (for the purposes of this paper, we will call these Type I) and those that only specify speed or other provide non-extractive guidance for mariners (Type II).

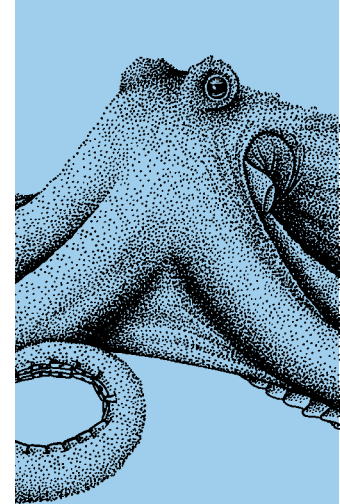
Classification System – Outlined below are five fundamental design characteristics used to classify de facto MPAs.

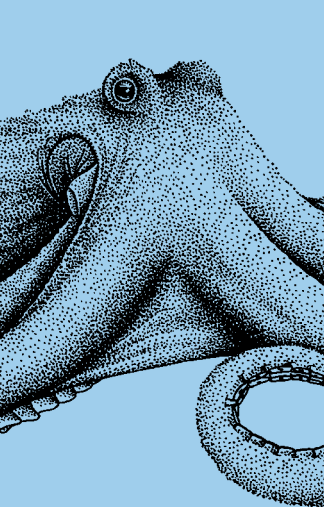
Primary Purpose - Many de facto MPAs in US waters have been established, especially in light of increased Homeland Security concerns after 9/11/2001, for the protection of government (often military) property or operations. Many have been established to protect critical private interests such as energy exploration and extraction and communications. Still others are established for issues of public health or safety. Sites classified as (1) Military are established to protect military vessels and installations as well as the public from military exercises. Examples include naval bases,

target ranges, missile ranges, mine laying and detection practice, and degaussing areas. Sites classified as (2) Public and Private Infrastructure are established to protect government property and privately owned facilities from sabotage and to protect the public from operations that might endanger health or safety. Examples include nuclear power facilities, and mineral or energy extraction platforms. Sites that are classified as (3) Public Health or Safety are established to protect the public from environmental hazards or government activities. Examples include many anchorage areas, traffic separation schemes and prohibited lightering areas.

Level of Restriction - De facto MPAs vary in their level of protection, from no access through varying levels of restricted access including recommendations for mariners in areas of high traffic or to address other concerns. Sites classified as (1) No Access indicate no entry allowed to unauthorized personnel. Entry is only allowed for enforcement purposes. Examples include waters adjacent to nuclear power facilities, some naval bases, and some testing and targeting areas. Sites that are classified as (2) Restricted Use indicate that access and/or activities are restricted for some or all of the calendar year. These restrictions are stronger than regulations governing surrounding waters and are intended to protect public and private property and human life. Examples include some testing and targeting areas, traffic separation schemes, some danger zones. Sites that are classified as (3) Transit Only provide access for transit only; access is allowed but only to pass through the area. It is a specific type of restricted access. Examples include some danger zones, degaussing areas, and some restricted areas.

Duration of Restriction - De facto MPAs vary in the duration of their restrictions from a few hours irregularly to 24 hours a day, 365 days a year. The permanence of the regulations controlling a specified area will affect the possible conservation benefit and impact on the public of those areas. Sites classified as (1) Permanent Year-round are de facto MPAs whose legal authorities restrict access or activities to a given area permanently, 365 days a year. Examples include nuclear power facilities,





some naval bases, and some testing and targeting areas. Sites classified as (2) Permanent Seasonal or Fixed are de facto MPAs whose legal authorities restrict access to a given area in perpetuity but only at predictable times of the year. Examples include some testing and targeting areas and some restricted areas. Sites classified as (3) Permanent Periodic are de facto MPAs whose legal authorities restrict access to a given area in perpetuity but only at irregular, announced intervals throughout the year. Examples include many testing and targeting areas and some restricted areas. Sites that are classified as (4) Lapsed or Uncertain are areas that are still designated on charts but which have no current enforcement authority or are in the process of being de-listed. Examples include defunct targeting areas and decommissioned bases.

Restricted Extractive Uses - De facto MPAs may allow certain extractive activities, such as fishing or mineral or energy extraction. Indeed, some restricted areas are to protect submarine mineral and/or energy extraction facilities. Others specifically state that commercial and/or recreational fishing is not to be adversely impacted.

The authority to prescribe danger zone and restricted area regulations must be exercised so as not to unreasonably interfere with or restrict the food fishing industry. Whenever the proposed establishment of a danger zone or restricted area may affect fishing operations, the District Engineer will consult with the Regional Director, U.S. Fish and Wildlife Service, Department of the Interior and the Regional Director, National Marine Fisheries Service, National Oceanic & Atmospheric Administration (NOAA). (33 CFR 334.4)

Extractive activities that are of particular interest to MPA practitioners are fishing and mineral and gas extraction. Sites that are classified as (1) All Extractive Activities are those sites that limit or prohibit all extractive activities within their boundaries. Sites that are classified as (2) No Extractive Activities indicate that the de facto MPA does not control or prohibit extractive activities. The regulations may limit non-extractive uses of the area, such as navigation or anchoring

Sites that are classified as (3) Bottom Impact allow for most uses but specify that any activity that would impact the bottom is prohibited. Sites that are classified as (4) Mineral or Energy Extraction only restrict fixed or floating structures specifically related to mineral or energy extraction. Sites that are classified as (5) Other have regulations that do not directly prohibit extractive use, but may limit it through other means, such as a site that prohibits fish traps or fish-pound stakes.

Penalty - Most de facto MPAs provide for a penalty for non-compliance. A Yes indicates the de facto MPA provides for a penalty for non-compliance through fine, incarceration or forfeiture of vessel. A No indicates the de facto MPA does not provide for a penalty for non-compliance. Currently, no de facto MPA fits this definition.

Most data were collected using publicly available data. The Code of Federal Regulations (CFR) (available online as e-CFR at: <http://ecfr.gpoaccess.gov/>) was used as a primary data source. The e-CFR website is authorized and maintained by the National Archives and Records Administration's (NARA) Office of the Federal Register (OFR) and the Government Printing Office (GPO). The material in the e-CFR is updated frequently to incorporate changes or Federal Register notices. "The Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government" (CFR, website checked 9/15/05). The official, published copy of the CFR is updated once a year. The authority to establish de facto MPAs and the rules for violation of the regulations published in the CFR are codified in the United States Code (USC). An electronic version of these volumes can be found at: <http://straylight.law.cornell.edu/uscode/html/>. Other supplementary documentation and information was culled from Department of Defense (DoD) websites, including information on the Base Realignment and Closure (BRAC) process, as of this writing still underway (Official BRAC website can be found at: <http://www.defenselink.mil/brac/index.html>).

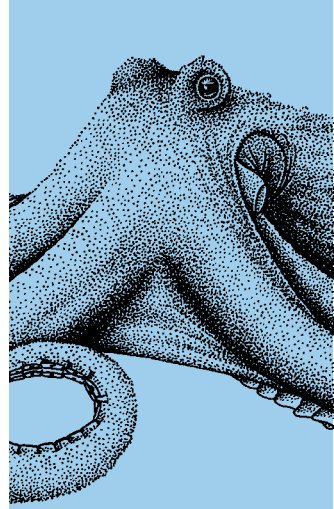
GIS boundaries for de facto MPAs were

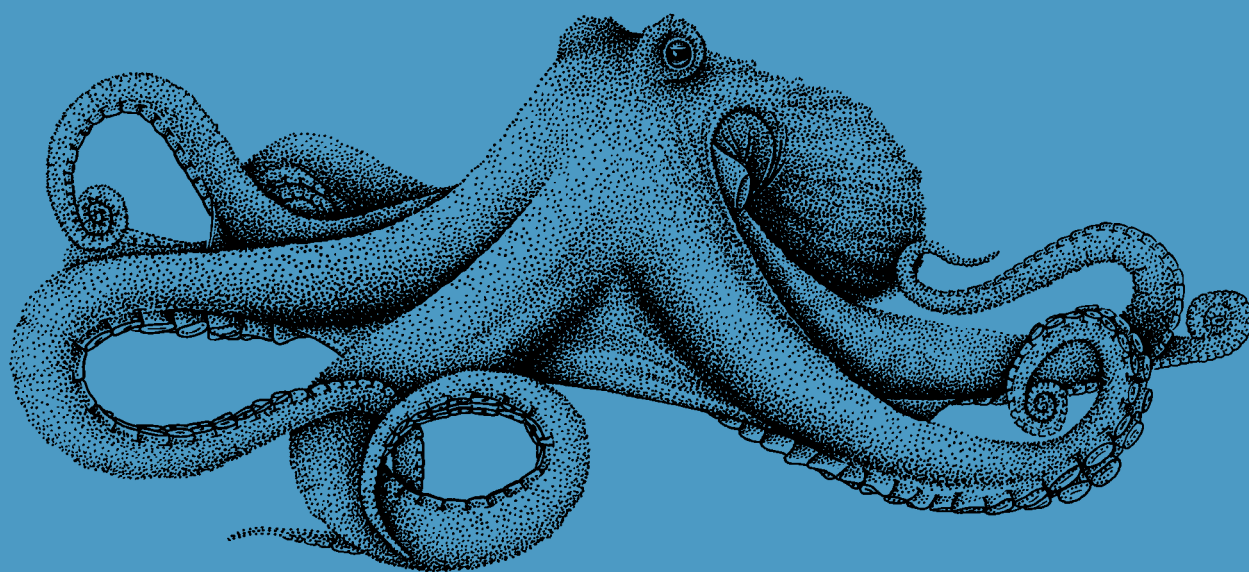
created or collected in a variety of ways. NOAA's Office of Coast Survey (OCS) provides an ever-growing number of charts in Electronic Navigational Chart (ENC) format. These are vectorized forms of the NOAA Paper Nautical Charts (<http://nauticalcharts.noaa.gov/mcd/ccatalogs.htm>) with Notice to Mariners and other updates included (<http://nauticalcharts.noaa.gov/MCD/enc/index.htm>). Notice to Mariners is a weekly publication that corrects errors on charts and announces hazards and other important navigational information (http://pollux.nss.nima.mil/untm/untm_j_options.html?class_flag=N). OCS now provides ENC files in a direct-to-GIS format (<http://ocs-spatial.ncd.noaa.gov/website/encdirect/viewer.htm>). For many port and harbor areas in the U.S., electronic boundaries are already available for de facto MPAs. For some areas, the National Geospatial-Intelligence Agency (NGA) has electronic boundaries available (<http://www.nga.mil/portal/site/dnc/>). These Digital Nautical Charts (DNCs) use NOAA Paper Nautical Charts as well as other sources, and are available in some areas where ENCs have not yet been created. In most cases, boundaries had to be built from scratch. In many cases, the latitude and longitude coordinates from the CFR were used to build precise boundaries matching the federal record. In some cases, however, the CFR is either vague, does not provide coordinates, or otherwise is insufficient to build boundaries for de facto MPAs. Where coordinates were not provided, raster forms of the NOAA Nautical Charts were used to digitize boundaries directly from the paper charts.

For more information on guidelines adopted for creating the marine boundaries, please refer to Esch, G.G. (2006) Marine managed areas: best practices for boundary making. Federal Geographic Data Committee Marine Boundary Working Group, NMFS, June 2006.

Appendix II Acronyms

- CFR** Code of Federal Regulations
- DFMPA** De facto marine protected area
- MMA** Marine managed area
- MPA** Marine protected area
- RNA** Regulated navigation area
- TSS** Traffic separation scheme





A REPORT BY THE NATIONAL MARINE PROTECTED AREAS CENTER



WWW.MPA.GOV