“The Global Ocean Refuge System is critical to saving the biodiversity of our oceans. It makes so much sense, we all should have thought of it a long time ago.”

~ Sylvia A. Earle, PhD
Board member, Marine Conservation Institute
Founder, Mission Blue
Explorer-in-Residence, National Geographic Society
About Us

Marine Conservation Institute is a team of highly experienced marine scientists and environmental policy advocates dedicated to saving ocean life for us and future generations. The organization's goal is to help create an urgently needed worldwide system of strongly protected areas — the Global Ocean Refuge System (GLORES) — a strategic, cost-effective way to ensure the future diversity and abundance of marine life. Founded in 1996, Marine Conservation Institute is a US-based nonprofit organization with offices in Seattle, near San Francisco and in Washington DC. For more information, please go to: www.marine-conservation.org.

Marine Conservation Institute created SeaStates G20 2014 using MPAtlas.org, an interactive resource to learn more about marine protected areas around the world that includes specifics about their protection status, general history, human-use information and contact details. Previous to SeaStates G20 2014, Marine Conservation Institute published SeaStates US 2013, the first ever quantitative, scientifically rigorous national ranking of US states’ protection of their ocean waters. SeaStates US 2014 expanded the analysis to waters of the broader US exclusive economic zone and found that most states and territories are failing to safeguard US marine life, seafood and coasts.

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For More Information

Please visit http://marine-conservation.org/seastates and www.mpatlas.org
Why Protect Marine Areas?

From the frozen seas to the sunlit tropics, estuarine, coastal and oceanic ecosystems are home to millions of marine species. Unfortunately, far reaching impacts from human activities are significantly straining the ocean's capacity to sustain us. We now risk mass extinction in the seas and severe reductions in the important benefits we get from the oceans, such as fresh seafood, breathable air and a livable climate. Protecting marine life in their ecosystems is the best way to maintain biological diversity, abundance and resilience.

Because ocean ecosystems contain diverse species, protecting a large area is the most effective method for safeguarding marine life. Protecting marine ecosystems allows animals to grow larger and their populations to increase in size. Beyond the protected boundaries, healthy populations can spread out into adjacent areas improving the biomass surrounding those protected areas. These refugia strengthen ecosystems by keeping natural processes intact and providing resiliency for the animals that live there. Strategically created networks of marine protected areas can help our important and valuable oceans survive the uncertainty of global climate change.

What is a Marine Protected Area?

Generally speaking, the phrase “protected area” refers to a place that is both recognized for some high level of biodiversity or natural health and is in some way managed through the use of restricted activities. One of the most challenging aspects of an international comparison is differing use of terminology. The International Union for the Conservation of Nature (IUCN) offers a comprehensive classification system to determine the baseline level of protection as well as the intended function of a protected space. Marine Conservation Institute calls for strong protection for at least 20% of all marine ecosystems through its Global Ocean Refuge System (GLORES).

Unfortunately, not all marine protected areas are created equal. There are thousands of places governments call “marine protected areas” that are very poorly protected, and can be considered “parks only on paper,” or “POOPs.” To receive the most important benefits from marine protected areas, protection needs to be strong to be effective.

Why No-Take Reserves?

Many marine protected areas protect against only a few threats, and most allow people to fish in them. No-take reserves are the strongest form of marine protected area as they safeguard marine life from the harmful effects of overfishing and other extractive uses, such as drilling for oil and gas.

Scientific studies have repeatedly shown increases in diversity, size of marine life and the overall abundance of animals in no-take reserves. Reserves also replenish fish and invertebrate populations outside their boundaries, a good outcome for both fish and fishermen. Additionally, strong protection allows female fishes and invertebrates to live longer, grow larger and produce far more eggs than the same number of younger females.

As of November 2014, only 0.83% of the ocean is protected in no-take reserves.
“It is immensely important to protect ocean life, even if only for the most selfish of reasons. The oceans make up over 95% of the living space on this planet. That means they are overwhelmingly important in keeping our world habitable. We ignore this simple fact at our peril.”

~ Callum Roberts, PhD

Professor, Environment Department, University of York
Pew Fellow in Marine Conservation

Photo: James Watt
In conservation, it is often said that those with larger financial resources should be better stewards than those whose money is spread more thinly. The G20 countries are not only obligated to protect the environment because of their financial ability; the majority of these countries are signatories on international agreements, such as the Convention on Biological Diversity’s Strategic Plan for Biodiversity 2011-2020. This Strategic Plan consists of a biodiversity target, Aichi Target 11, which states by 2020, 10% of coastal and marine areas will be conserved through effectively managed, ecologically representative and well connected systems of protected areas, and integrated into the wider landscapes and seascapes.

There are several other important agreements, including the United Nations Framework Convention on Climate Change and the Durban Accord that followed from the 2004 IUCN World Parks Congress, that have set gradual and tangible marine conservation goals for world economic leaders. The above mentioned international agreements were designed to hold countries accountable for the health of their marine ecosystems by 2030.

With the exception of Saudi Arabia, all G20 nations have signed the Convention on Biological Diversity’s Strategic Plan for Biodiversity 2011-2020. With a little over five years left to meet Aichi Target 11, Marine Conservation Institute has created the SeaStates G20*2014 analysis. We want to know how the countries with our world’s twenty largest economies compare as leaders in marine conservation and whether or not they have kept their standing promises to protect our oceans. They have the means, are they doing their part?

*Although the European Union is considered a member of the G20 group, member countries are not included in this analysis, although France, Germany, and Italy are included as G20 countries in their own right.

### Tracking No-Take Marine Reserves

Accurately tracking no-take marine reserve coverage can be difficult. The International Union for Conservation of Nature has established global categories for all protected areas (terrestrial and marine). These categories are recognized by international bodies, such as the United Nations, and by many national governments as the global standard for defining and recording protected areas.

Unfortunately, inconsistencies in the application of, and reporting on, the categories reduce the efficacy and use of the system as a global classification scheme, and their application to marine sites remains inconsistent despite guidelines to help apply them to marine areas. Making assumptions about IUCN category determination based on the name of a protected area (i.e. National Park, Sanctuary, etc.) rather than actual management objectives is a common problem with these designations.

Therefore, marine protected area sites and regulations were researched and compared to the stated IUCN categories for this report. Marine protected areas lists were reviewed to identify actual no-take areas to produce more accurate numbers than those which simply rely on IUCN categories. There may be areas included that unknowingly do not meet no-take requirements, either due to poor management or enforcement, but areas were selected based on published regulations and intent. There are also very good fisheries management areas that are closed to fishing but are not considered to be marine protected areas by Marine Conservation Institute or by the IUCN, as they do not provide long-term protections or have nature conservation as a primary aim. The results presented in this report provide a clear depiction of how well countries are strongly protecting their coastal and marine waters.
Methods

We carefully combed through the marine protected areas of the G19 countries analyzed (excluding the EU) and compared publically available management plans and reports to determine which sites formally fit the criteria of no-take areas. While some areas might have been unintentionally missed or overestimated, this report provides a reasonable estimate of the overall numbers for comparison. We restricted our analysis to protected areas where management plans and regulations are currently in effect. While Australia’s 2012 Commonwealth Marine Reserves are currently included in the World Database on Protected Areas, the regulations are currently suspended while a public review process commences. Similarly, the new very large marine protected area that encompasses most of the waters of New Caledonia was not included in this analysis as management plans and regulations are not yet in effect.

For most marine reserve zones we had geospatial boundary data to determine the coverage of the marine area. For some sites only a point and an area estimate were known. In these cases, we constructed a circle with an area matching the provided area estimate. In both cases, we clipped the constructed boundaries by a global high resolution coastline data set to remove terrestrial components. For sites that were only indicated to be partial no-take and when the size of no-take area was available, but not the specific internal no-take zone boundaries, we scaled the size of the remaining marine area to match the known no-take area value. In these cases there is no definite way to know where the no-take zones are, but we still capture the right amount of ocean as no-take. Alternatively, if we know the site is partially no-take but do not have any size estimate, we assume the no-take zones comprise ten percent of the total area. This still offers some credit when no other information is known.

We compared the no-take coverage for each country within their exclusive economic zone and territorial waters - all waters out to 200 nautical miles (nm) - assessing core home-nation waters, overseas territories, and remote holdings. In the Mediterranean we used the 12nm territorial seas boundaries rather than the 200nm exclusive economic zone boundaries, as the central part of the basin is considered high seas.

Photo: Amanda Pollock / USFWS | US Pacific Remote Islands Marine National Monument
Results

Of the G20 economies, only five have protected more than 1% of their oceans in no-take reserves. The United States leads with 9.88% of waters strongly protected, and is closely followed by the United Kingdom with 9.73% protection. South Africa comes in third, at 4.46% protected, with Australia next at 4.13%, and Saudi Arabia in fifth, with 2.14% protected.

The remaining G20 group members have strongly protected less than 1% of their oceans: Russia, Republic of Korea, Indonesia, Italy, Canada, China, Mexico, India, Brazil, Turkey, France, Argentina, Japan, and Germany.

In sum, G20 member countries are the most financially able countries in the world; collectively their economies account for approximately 85% of the gross world product. Yet their commitment to protecting their coastal waters is lacking, and capacity is clearly not the issue.

One trend that stands out is that strong protection of large, remote areas makes up the vast majority of the no-take protection for the leading G20 countries. For example, the United Kingdom has only three small no-take areas in surrounding waters, with the vast majority of their no-take area occurring in British Overseas Territories.

In fact, the United States*, the United Kingdom, and South Africa all have the vast majority of their no-take reserves in remote waters far from centers of population (i.e. the Pacific Remote Islands, South Georgia, and the Prince Edwards Islands). These countries will need to improve protection of the heavily used waters closer to home, in order to ensure protections across all ecosystems and habitats.
South Africa, Australia, and the US state of California have all designated no-take marine reserves closer to home and demonstrate that domestic coastlines can be effectively protected.

Removing remote areas from the analysis, the top four countries for strong marine protected areas in order are Australia, Saudi Arabia, Russia and Germany, although all of them still have under 4% of their waters protected in no-take reserves. When remote areas are removed, only Australia and Saudi Arabia protect more than 1% of their waters and each of the other top three countries (United States, United Kingdom and South Africa) drop to less than 1%.

*Pelagos sanctuary included in total MPA coverage for Italy and France.

*Papahānaumokuākea and the Pacific Remote Islands Marine National Monuments are included in this analysis as remote waters due to their distance from the mainland United States.

Any additional information regarding marine protection in specific regions to include in the MPAAtlas database is warmly welcomed. Interested parties are encouraged to consider becoming an MPAAtlas partner and contribute more directly to the accuracy of our database.
No-Take Reserves

- 5 - 10%
- 1 - 5%
- < 1%
Marine Protected Areas (MPAs) are a recent introduction in Argentina, where the National Congress, in consultation with stakeholders and scientists, designates protected areas. MPAs are generally zoned for multiple uses, and can emphasize biodiversity protection, sustainable eco-tourism, or fisheries management. Currently, only a tiny fraction of waters are protected by no-take reserves, and Argentina has a long road ahead if it intends to help achieve global protection targets.

Notwithstanding current controversies, Australia has produced a vibrant network of MPAs, with over 4% of its waters protected in no-take reserves. A national Marine Reserves Review process is underway to evaluate the current placement and management of MPAs. The recent announcement of a network of new marine sanctuaries in South Australia gives hope that more will follow across the country.

Brazil's first MPA was established in 1979, and since then more than 300 additional protected areas have been used as tools for both conserving biodiversity and managing fisheries. Two types of MPAs exist: no-take reserves free from human interference, and sustainable use areas managed for human use. Governance of these areas falls to the Chico Mendes Institute of Biodiversity Conservation, a federal agency.

Canada's Oceans Act tasks the Minister of Fisheries and Oceans to lead and coordinate the development and implementation of a national network of marine protected areas. International commitments to establish networks of marine protected areas have been made, but with global no-take reserve coverage at 0.1%, much work remains. Considering that Canada has the world's longest coastline, the country has a vested interest and responsibility in insuring a healthy marine future.
The number of MPAs in China has increased since the 1980s, and they now collectively cover some 3.93 million hectares of coastal and marine areas. Designation and management of these areas often falls to provincial lawmakers and local stakeholders, rather than the central government. Unfortunately, MPAs in China suffer from a distinct lack of coordinated management and strong enforcement, often failing to live up to conservation objectives.

France aims to cover 10% of national waters in MPAs by 2015, but current no-take reserves cover less than 0.01% of the country's oceans. Encouragingly, pending implementation of an MPA in New Caledonia, encompassing 1.3 million km², will include no-take reserves.

In May 2004, Germany was the first EU Member State to nominate a comprehensive set of 10 Natura2000 marine sites to the European Commission, covering 31.5% of its offshore Exclusive Economic Zone in the Baltic and North seas. Conflict between fishing activities and conservation objectives continue to pose a problem across the Natura2000 sites, and there remains only two "zero-use" reserves in the country's waters.

MPAs in India fall in a complicated system of protection levels, ranging from National Parks which ban all human activities (unless there is a conservation benefit, such as tourism or research), to sanctuaries which may allow fishing and other extractive activities. A growing population continues to exert increasing pressure on the country's marine environments.
### Indonesia

**0.12% No-Take Reserves**

6,845 km²

With the world’s second longest coastline and the greatest coral reef area of any country, Indonesia has established over 200 MPAs. In 2008, Indonesia fulfilled its commitment to the Convention on Biological Diversity’s Program of Work on Protected Areas to create 10 million hectares of protected area by 2010. However, these MPAs are often managed for sustainable fishery extraction rather than conservation objectives. Lack of sufficient enforcement and management is problematic.

### Italy

**0.11% No-Take Reserves**

101 km²

In 1982, Italy formally began its system of marine protected areas with the passage of a law authorizing the designation of up to 50 MPAs. Italy’s MPAs generally utilize a zoning system, wherein a central or key area of the preserve is off-limits to extractive activities. The surrounding waters form a buffer zone with some fishing restrictions. The remainder of the reserve generally includes only more basic restrictions, such as a prohibition on trawling.

*Note: Only territorial waters were evaluated.*

### Japan

**< 0.01% No-Take Reserves**

1.21 km²

There is no formally established national definition for MPAs in Japan. Protected areas are established both on the national level, through legal action by the Fisheries Agency and the Ministry of the Environment and other federal agencies, as well as on the local level, through NGO or citizen action. MPAs can vary in objective, and consensus-building with local stakeholders is a fundamental part of MPA creation, and many MPAs allow historic fishing practices to continue.

### Republic of Korea

**0.15% No-Take Reserves**

476 km²

MPAs were first introduced to the Republic of Korea in 2006 under the Law on Conservation and Management of Marine Ecosystem. They are designated under the categories of Marine Wetland Areas and Ecosystem Reserves. The number of reserves has been steadily increasing since 2006, but the overall number of no-take reserves is still very small. More work is needed to protect the Republic’s important marine ecosystems.
Mexico began protecting its marine waters in 1962, and since then has designated over 100 MPAs. However, a lack of effective management plans and regulations have severely limited the benefit of many of these designated areas. As each of the states manage their own waters, processes and rules across the country are inconsistent and highly variable.

Russia

MPAs in Russia are designated as national parks, wildlife refuges, and strict nature reserves. They are managed by federal, regional, and local governments. While many of Russia’s land-based reserves contain marine components, the Far Eastern Marine Reserve, created in 1978, is the only protected area that is almost exclusively marine. Lack of funding for enforcement, scientific research, and public outreach is a major threat to the success of Russia’s MPAs.

Saudi Arabia

Saudi Arabia’s marine protected areas are designated solely through the state-established Saudi Wildlife Authority. Many areas have been proposed and suggested for MPA status but still await Royal declaration. Population growth in the coastal zone has increasingly threatened the sustainability of the country’s marine ecosystems, and the large Farasan Islands protected area, established in 1996, still faces continued fishing pressure from area residents.

South Africa

The first South African MPA was established in 1964, and in the intervening 50 years the country has added another 20 MPAs to its roster. Of these, eight reserves are designated no-take areas, which boosts the country to 2nd place in the protection rankings. Unfortunately, the lack of clear management plans and sufficient skilled staff still represent major obstacles that need to be addressed.
Turkey

**0.02% No-Take Reserves**

40 km²

The proposed long-term aim for marine biodiversity conservation in Turkey's territorial sea is a reconfigured Marine and Coastal Protected Area network. This network is designed to protect biodiversity while optimizing its ecological service functions under effective and sustainable adaptive management. Currently, the country's no-take reserve coverage falls far below international targets.

United Kingdom

**9.73% No-Take Reserves**

657,350 km²

Despite a 2004 Royal Commission report that proposed 30% of the UK's waters should be protected in no-take zones and a supporting petition with 500,000 signatures in 2009, minor progress has been made towards no-take reserve creation around the main islands of the UK. To date only three areas, a total of 0.01% of mainland UK waters, have been protected in no-take marine reserves. The majority of the total UK's marine reserve coverage is in remote overseas territories.

United States

**9.88% No-Take Reserves**

1,201,440 km²

With the recent expansion of the Pacific Remote Islands Marine National Monument, the US has taken a tremendous step for conservation through strongly protected marine areas. However, the country still has less than 10% of its vast ocean waters in no-take reserves. Closer to home, the US still has a long way to go before reaching conservation targets, with only 0.03% of the waters surrounding the main 50 states in no-take reserves. For more, please see SeaStates US 2014.

European Union

The European Union is formally considered the 20th member of the G20 country group, but was not evaluated in this analysis as France, Germany, and Italy were already evaluated on an individual basis.

0.03% of Mainland & 23.44% of Remote Waters Protected in No-Take Reserves
“If we don’t speak for the Earth, who will? If we are not committed to our own survival, who will be?”

~ Carl Sagan, PhD 1934-1996

*Former Director, Laboratory for Planetary Studies, Cornell University*
*Former Chairman of the Division for Planetary Science, American Astronomical Society*

Covering about 70 percent of our planet, the oceans are the Earth’s largest life support system.

*Photo: NASA*


“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.”

~ Margaret Mead, PhD 1901-1978
Former Distinguished Professor of Sociology and Anthropology, University of Rhode Island
Former President, American Anthropological Association

Protected areas are a gift to us and future generations.

ABOVE: Photo: Kip Evans
BACK COVER: Clinton Bauder | Cordell Banks