

ISSUE BRIEF

RESILIENT SEAS: WHY WE NEED TO PROTECT 30 PERCENT OF AMERICA'S OCEAN BY 2030

The ocean provides us with so much—including food, jobs, and recreation—but it is experiencing tremendous strain. Already under pressure from decades of overexploitation and habitat destruction, marine life is now struggling to adapt to the impacts of climate change. We must take real and immediate action to help the ocean recover and thrive.

Scientists are calling for the global protection of at least 30 percent of the ocean and 30 percent of our lands and inland waters by 2030 in order to help safeguard our air and water quality, protect our food supply and health, and prevent mass wildlife extinctions. America must support this worldwide goal and lead the way at home.

The United States can provide these protections in U.S. waters by designating fully or highly protected marine protected areas, or MPAs, the sea's equivalent of a Yellowstone or Grand Canyon National Park.¹ MPAs provide safe havens where ocean life can rebound from stresses and flourish without pressure from industrial activities. They are an effective tool for preserving biodiversity and strengthening the ocean's resilience to climate change and other threats.

Protecting 30 percent of America's ocean areas by 2030 not only will help marine life rebound but will also support our coastal communities—and the millions of jobs and billions of dollars in economic activity—that depend on a healthy ocean.



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A HEALTHY OCEAN BENEFITS EVERYONE

Protecting ocean health means protecting American jobs and recreation, the food supply, and our climate. About 40 percent of the U.S. population lives in coastal counties, and millions of Americans head to the coasts each year for a break from everyday life.² In 2016 ocean-based tourism and recreation contributed about \$124 billion to the economy and employed almost 2.4 million Americans, more than the real estate industry.³ Americans also consume billions of pounds of seafood every year.⁴ In 2016 the U.S. commercial fishing industry brought in 9.6 billion pounds of fish and shellfish with revenue reaching \$5.3 billion, and U.S. recreational fishing activities supported more than 470,000 jobs and contributed \$38.7 billion to the nation's

gross domestic product.⁵ These industries rely on a healthy ocean, clean beaches, and abundant fish and other wildlife.

Ocean life is increasingly a source of medical discoveries, contributing to new drugs that treat everything from cancer to heart disease.⁶ In fact, one of the medicines used to treat individuals with COVID-19 comes from sea sponges.⁷ Additionally, horseshoe crabs currently play a special role in medical research. The animals' milky-blue blood is the only natural source of limulus ameocyte lysate, a substance used to detect bacterial toxins in test drugs and vaccines.⁸

Ocean ecosystems also naturally protect us against the ravages of climate change. Coastal wetlands help shield homes and businesses from increased flooding, storm surges, and coastal erosion.⁹ For example, wetlands prevented an estimated \$625 million in direct flood damages from Hurricane Sandy in 2012.¹⁰ Additionally, the ocean's "blue carbon" ecosystems like seagrasses and mangrove forests store large amounts of carbon dioxide that would otherwise enter the atmosphere.¹¹



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FIGURE 1: BENEFITS OF A HEALTHY OCEAN¹²

A HEALTHY OCEAN PROVIDES



THE AIR WE BREATHE

The ocean supplies half of the Earth's oxygen—literally every other breath we take.



CLIMATE REGULATION

The ocean covers more than 70% of the planet, and its currents store and release heat across the globe, playing a key role in stabilizing our climate. Additionally, blue carbon ecosystems like salt marshes and seagrasses can store large amounts of carbon in plant material and sediment.



COASTAL RESILIENCE

Coastal wetlands and other natural barriers help shield homes and businesses from flooding, storm surges, and coastal erosion.



ECONOMY

Approximately 2.5 million U.S. jobs rely on a healthy ocean. Ocean-based tourism and recreation alone contributes roughly \$120 billion to the U.S. economy each year.



RECREATION

From swimming and boating to kayaking and surfing, millions of Americans along the coasts enjoy spending time in the ocean and at the beach.



FOOD

Americans consume—on average—16 pounds of seafood annually.



MEDICINE

Important medicines used to fight cancer, heart disease, COVID-19, and more come from the ocean.

THE PLANET'S BIODIVERSITY CRISIS

Biodiversity—the variety of life on earth—is declining at an unprecedented rate, threatening ecosystems that we depend on for our air, water, food, recreation, and jobs.¹³ Worldwide, one million species on land and in the sea are at risk of extinction, many within decades.¹⁴ In the ocean, destructive fishing practices have had the largest impacts on marine biodiversity.¹⁵ These impacts come from overfishing (fishing beyond a fish population's ability to replenish itself); activities like bottom trawling, which, in sensitive habitats, can be akin to clear cutting the ocean floor; and bycatch, the incidental killing of unwanted fish, marine mammals, sea birds, and sea turtles in fishing gear. With climate change adding to the already significant pressures on ocean life, we must act now to improve ocean protections.

THE MARINE LIFE THAT SUPPORTS US IS STRUGGLING

Globally, two-thirds of the marine environment has been significantly affected by a wide range of human activities, including decades of destructive fishing practices, harmful oil and gas exploration and production, and climate-altering pollution from the burning of fossil fuels.¹⁶ More than one-third of marine mammals and nearly one-third of sharks and reef-forming corals are on the brink of extinction.¹⁷ More than a quarter of seabird species are threatened, and nearly half are known or suspected to be in decline.¹⁸ Worldwide, the percentage of fish stocks harvested at biologically unsustainable levels jumped from 10 percent in 1974 to 34.2 percent in 2017.¹⁹ The number of blue carbon ecosystems is declining due to coastal development, reduced water quality, and climate change impacts like sea level rise—and with their destruction comes a release of stored carbon back into the atmosphere.²⁰

Increasingly, climate change is altering marine ecosystems on a fundamental level. The ocean has absorbed 93 percent of the heat trapped by greenhouse gases since the mid-20th century and is currently absorbing approximately one-quarter of the carbon dioxide emitted yearly from human activities.²¹ This has helped to slow the planet's warming, but at a steep price: The ocean has become warmer and more acidic and holds less oxygen.²² In 2019 global annual surface water temperatures reached the highest level ever recorded.²³

Cold-blooded and temperature-sensitive marine organisms in search of cooler waters have initiated a mass migration beneath the waves. Some species will thrive in this unprecedented reshuffling, but many others will decline or perish.²⁴ “We’re already seeing species disappear from places they’ve been for generations and longer,” says Malin Pinsky, a marine ecologist at Rutgers University.²⁵ Changes in the ocean can have a cascading effect, spreading devastation across regions and species like dominoes. For example, when sea otters disappeared from areas around the Aleutian Islands, the sea urchins there lost their primary predator. Unchecked, the sea urchin population exploded and decimated the local kelp forests, which provide food and shelter for innumerable species.²⁶

The very chemistry of the ocean is also changing. By absorbing excess carbon dioxide from fossil fuels, our oceans have become 30 percent more acidic than in

preindustrial times.²⁷ Ocean acidification makes it more difficult for some creatures, like oysters, clams, crabs, mussels, and the tiny plankton that form the base of the ocean food chain, to build and maintain the strong shells and skeletons they need to survive.²⁸

Warming waters and changes to the ocean's chemistry have been especially devastating for coral reefs. Ocean acidification prevents reef-forming corals from building a strong skeleton.²⁹ Corals also become stressed and have an increased risk of death when the water is too warm. Such stress often presents as “coral bleaching,” which occurs when warm waters cause corals to expel the algae that provide them with their food and coloring.³⁰ In 2016, 51 percent of all coral reefs globally were impacted by bleaching-level heat stress.³¹ The United Nations' Intergovernmental Panel on Climate Change has warned that if global temperatures rise 2 degrees Celsius above preindustrial levels, we could lose more than 99 percent of the world's living tropical coral reefs, along with the benefits they provide as feeding grounds and shelter for fish and storm protection to coastal communities.³²

U.S. OCEANS ARE SHOWING SIGNS OF STRAIN

U.S. ocean areas are not spared the effects of these stressors, from warming and acidification to fishing impacts and loss of habitat. For example, coral reefs—which pump more than \$3.4 billion into the U.S. economy annually and are crucial to marine life, fisheries, and shoreline protection—are in trouble. Ninety-five percent of the Florida Reef Tract, the only living coral barrier reef in the continental United States, has died.³³

Scientists predict that rising ocean temperatures will force hundreds of ocean fish species to travel deeper or move northward, sometimes hundreds of miles, to cooler waters.³⁴ Already black sea bass, once common off the coasts of North Carolina and Virginia, now concentrate off New Jersey, creating new challenges for fishermen as they struggle to maintain their usual catch levels of fish that are now found farther from their homes.³⁵

The number of extreme ocean heat events is also on the rise. Marine heat waves are 30 percent more common now than in the 1920s.³⁶ Recently in the Gulf of Alaska, a multiyear marine heat wave dubbed “the Blob” caused steep declines of Pacific cod, which resulted in a shutdown of the federal cod fishery for the 2020 season.³⁷

Rising ocean temperatures—along with more frequent heavy rains that wash toxic pesticides and other materials into the water—also contribute to larger, longer-lasting harmful algal blooms like the red tides seen in coastal regions of Florida and Texas.³⁸ Algal blooms create “dead zones,” areas of low oxygen that can kill marine life, threaten human health, and hurt local economies.³⁹ For example, a 2015 outbreak of toxic algae shut down the \$200-million-a-year Dungeness crab fishery on the West Coast.⁴⁰

Additionally, more acidic waters threaten the future of our shellfish harvests in coastal communities around the United States.⁴¹ On the West Coast, where acidification has already caused massive oyster die-offs in the Pacific Northwest shellfish hatcheries, about half of total fishery revenue comes from species vulnerable to ocean acidification.⁴² Acidification is expected to progress faster and more severely in the waters off Alaska than in lower latitudes, mainly because colder water absorbs more carbon dioxide.⁴³ The changes in the ocean’s chemistry there threaten to disrupt the shellfish industry, which is vital to the state’s economy and its culture.

Scores of marine species are already struggling to survive from a combination of human pressures. In the United States, more than 165 marine species are listed as endangered or threatened, including all six species of sea turtles that inhabit U.S. waters.⁴⁴ In the Gulf of Mexico, there are now fewer than 100 Gulf of Mexico (Bryde’s) whales—the government puts the number at 33—after sustained losses from offshore oil and gas development and spills, vessel strikes, chronic ocean noise, and entanglement in lobster gear.⁴⁵ And on the East Coast, the North Atlantic right whale is at risk of extinction from

vessel strikes and lobster gear entanglement.⁴⁶ Fewer than 400 right whales survive, including less than 100 breeding females.⁴⁷ These are just a few examples of the species we must fight to save.

Even with efforts to promote sustainable fishing practices, fishing gear is a persistent threat, entangling and unintentionally catching vulnerable species and degrading marine habitats.⁴⁸ Some fishing gear, like weighted nets that are dragged across the seafloor, can destroy deep-sea corals that have been growing for thousands of years.⁴⁹ While the United States has made significant progress in reducing overfishing and rebuilding depleted fish stocks, the National Oceanic and Atmospheric Administration reported in 2019 that 19 percent of assessed stocks are still overfished, meaning their populations are dangerously low in most cases, and another 7 percent are being caught at an unsustainably high rate that is likely to lead to an overfished designation.⁵⁰ For example, once-legendary populations of Atlantic cod in the Gulf of Maine were estimated in 2019 to be at 6 percent of historic levels.⁵¹

PROTECTING IMPORTANT MARINE AREAS KEEPS THE OCEAN RESILIENT

Scientists worldwide have called for strong protections for at least 30 percent of the world’s ocean and 30 percent of its lands and inland waters by 2030 (“30x30”) to preserve biodiversity and guard against climate change impacts.⁵² To ensure that future generations can continue to enjoy all that our ocean provides, the United States must take meaningful steps now to reach 30 percent protection of our ocean and safeguard a wide range of habitats where marine wildlife can recover and thrive.



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Our 30x30 protections should encompass a diversity of habitats, with high-biodiversity sites prioritized. These protections must also be strong and actively enforced to ensure ecosystem benefits. Fully or highly protected marine protected areas are the most effective tool we have for preserving ocean ecosystems. By providing sanctuaries for ocean wildlife that are off-limits to extractive activities like commercial fishing, oil and gas drilling, and seabed mining, MPAs protect a number of natural processes that can help ecosystems withstand and recover from disturbances and adapt to climate change.⁵³

WHAT IS A FULLY OR HIGHLY PROTECTED MARINE AREA?

The strongest marine protected areas are like the sea's equivalent of a national park. These MPAs provide safe havens where ocean life can rebound from stresses and flourish without pressure from industrial activities. Strong MPAs may include light extractive activities like certain types of recreational fishing.

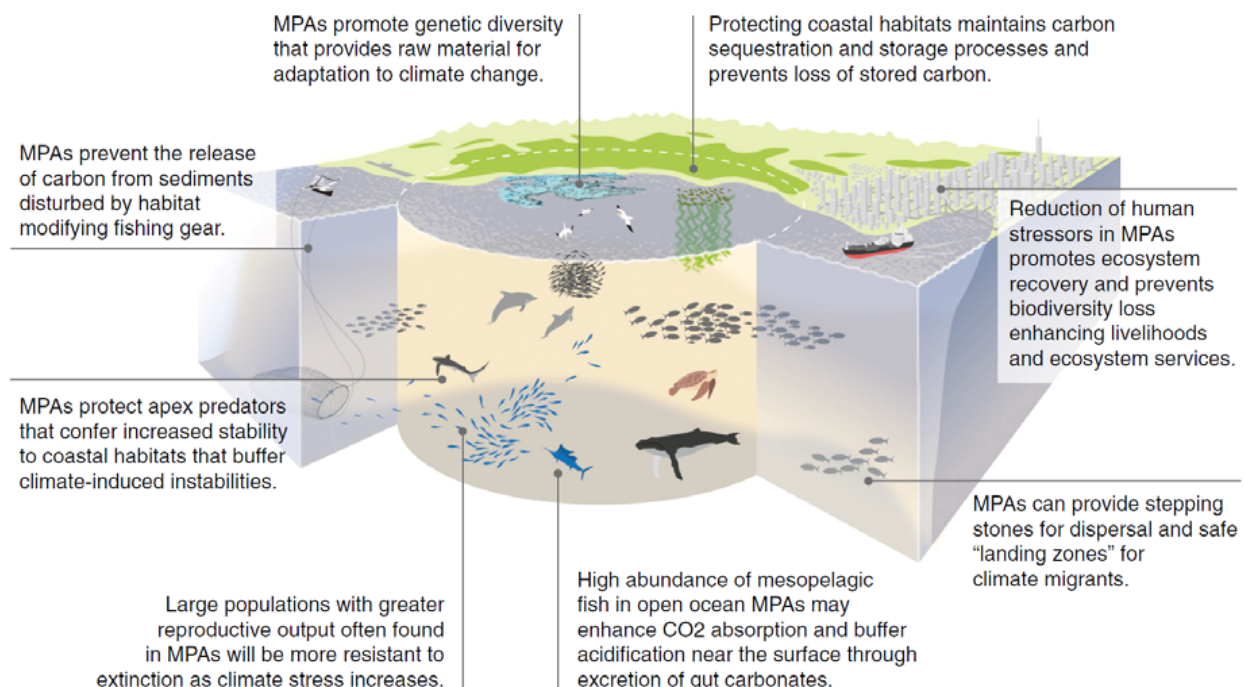
- **Fully protected areas** do not allow extractive or destructive activities; all abatable impacts are minimized.
- **Highly protected areas** allow only light extractive activities, with all other abatable impacts minimized.⁵⁴

Fully or highly protected MPAs help encourage greater species abundance, size, and reproductive output; restore ecosystem health; and promote increased resilience and adaptation to climate and other changes.⁵⁵

Strong MPAs contribute to ocean health by:

- **Building community-level resilience by protecting intact ecosystems with a diversity of species.**⁵⁶ Species-rich communities are likely to be more resilient to climate and other human-related disturbances because in such a system, there is a higher chance that at least some species will survive.⁵⁷ Protecting diverse, intact ecosystems is similar to a money manager investing in diverse groups of assets to minimize risk in a fluctuating market. In one of the longest-established and best-enforced MPA networks, the Great Barrier Reef Marine Park, the diverse marine communities within the MPAs were more resistant to change and recovered 20 percent faster following disturbances than the communities outside the MPA boundaries.⁵⁸
- **Providing refuge to keystone species,** which play an outsize role in maintaining species balance. These include predators that help keep high-impact prey species in check so that other species can flourish. For example, algae-grazing parrotfish are keystone species in tropical coral reefs, helping slow-growing corals to survive and compete with faster-growing algae.⁵⁹
- **Helping marine life adapt to climate change by preserving genetic diversity.**⁶⁰ By harboring large populations and individuals in a variety of age groups, MPAs help to maintain genetic variation, which is the raw material for evolution.⁶¹ Populations that lack this genetic richness are more vulnerable to environmental change and at higher risk of extinction.

FIGURE 2: MPAS HELP COMBAT CLIMATE CHANGE IMPACTS⁶²



Scientific studies have shown that MPAs can benefit both the larger environment and the economy.⁶³ Areas adjacent to MPAs can experience an increase in fish biomass as populations of certain fish species increase their numbers and productivity, resulting in larvae or adults “spilling over” beyond the protected area to the benefit of fishermen and ecosystems outside the MPA boundaries.⁶⁴ For example, the MPA in the northern Channel Islands of Southern California not only saw bigger and more abundant sea life after only five years, but also saw an average biomass increase outside its boundaries.⁶⁵ Protected areas can also boost tourism. Hawaii’s Hanauma Bay, which was designated for special protection by the state in 1967, draws an average of 3,000 visitors a day, or about one million a year, to see its diverse and abundant marine life.⁶⁶

PROTECTING THE OCEAN HAS STRONG SUPPORT

Polling shows that Americans overwhelmingly support the creation of marine protected areas, and a majority say they don’t think the government is doing enough to protect the ocean.⁶⁷

U.S. presidents have been using their authority to protect ocean areas for decades. Most recently, both George W. Bush and Barack Obama established MPAs while in office. President Bush created four marine national monuments in the Pacific Ocean to protect coral reefs, marine life, and biological hot spots.⁶⁸ President Obama expanded two of those monuments and established the Northeast Canyons and Seamounts Marine National Monument, about 130 miles off Cape Cod.⁶⁹ It features underwater canyons as deep as the Grand Canyon and underwater mountains rising higher than any mountain east of the Rockies. The area is home to more than 1,000 species.⁷⁰

WE CAN PROTECT OUR OCEAN IF WE ACT NOW

Creating fully and highly protected marine areas is in keeping with our country’s history of conserving our natural wonders. Just as cherished American treasures like the Grand Tetons and Great Smoky Mountains National Parks preserve special places on land, we need to protect the “wonderworld of the seas.”⁷¹



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Committing to the 30x30 target is an important first step. Here in the United States, lawmakers in the House and Senate have introduced the “Thirty by Thirty Resolution to Save Nature” to establish a national goal of conserving at least 30 percent of U.S. land and 30 percent of U.S. ocean by 2030.⁷² A wide range of organizations support this critical effort.⁷³ In addition, the House Ocean-Based Climate Solutions Act sets a goal of protecting at least 30 percent of the U.S. ocean by 2030 and establishes a process for achieving that goal.⁷⁴

Currently, the U.S. fully or highly protects roughly 23 percent of ocean areas from commercial exploitation and harmful activities.⁷⁵ But these areas are almost entirely in the western Pacific and northwestern Hawaii, leaving unique, biologically rich, and highly vulnerable areas off the continental U.S. coasts unprotected.⁷⁶ Determining which areas to designate as marine protected areas will require a science-based assessment and a public engagement process providing for public input and the involvement of tribal and local communities. Ultimately, protected areas should represent the diversity of America’s marine ecosystems.

Additionally, President Donald Trump in mid-2020 rolled back protections for the Northeast Canyons and Seamounts Marine National Monument by opening it up to commercial fishing.⁷⁷ It is critical that strong ocean protections be restored to this area and also extended to other areas. We can and must do more.

The ocean is an invaluable part of our natural heritage. Protecting 30 percent of America’s ocean area will help protect our valuable and vulnerable marine life from industrial harm and safeguard the health and well-being of our families and future generations.

There’s no time to waste. We must act to protect our ocean now.

ENDNOTES

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