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A Look to the Future

September 2, 1999

To The President:

In June of last year, you and Vice President Gore presided over the National Ocean Conference in Monterey, which drew together for the first time the full array of ocean interests – from government to industry, science to conservation. Among the many initiatives you and the Vice President launched at that historic gathering were new steps to restore coastal reefs, rebuild marine fisheries, preserve freedom of the seas, provide public access to military data and technology, enhance the competitiveness of America's ports, and protect our national marine sanctuaries from oil drilling.

*Our
report reflects a
broad national consensus
on the vital importance of
the oceans to our
nation's future.*

In your address to the Conference, you also directed your Cabinet to report back to you with additional recommendations for a coordinated, disciplined, long-term federal ocean policy. Today, on behalf of the Cabinet and independent agencies with responsibility for ocean affairs, we are pleased to submit this report with our recommendations for a comprehensive policy to guide federal efforts into the 21st century.

The national dialogue begun in Monterey reflects the diverse, sometimes competing values inherent in our oceans. The seas are not only a source of economic benefit and a major avenue of world trade, but they are also a vital component of our national defense, a natural treasure to be preserved, and a fascinating frontier with secrets yet to be discovered. Our recommendations build on the broad consensus among Conference participants on the vital importance of the oceans to our nation's future – our economy, our security, our health and well-being – and the challenges we face in ensuring that all the oceans' many resources are protected and sustained.

There is growing awareness among Americans of the many ways the oceans

influence our daily lives. Farmers in the nation's heartland depend on weather systems driven by the interaction of the oceans and atmosphere to nourish their crops. Citizens who have never seen an ocean may benefit from energy and food from the waters off our coasts. Marine organisms provide the cure for many diseases and the promise of many more cures. Ocean-going vessels carry the bulk of our world trade, linking us to the global marketplace and keeping our economy strong. Our naval forces, which preserve the international freedoms of navigation so crucial to maritime commerce and global stability, use ocean data daily in their worldwide operations. A strong national security is essential to our nation's ocean policy.

At the same time, we have come to understand that the "boundless" oceans have limits. They cannot provide unlimited fish to feed the growing populations of the world, nor can they absorb unlimited wastes from human activities. We also are beginning to realize the importance of preserving the oceans' complex and delicate balances. Non-native species discharged from ships' ballast tanks into U.S. waters can irrevocably alter an ecosystem. Toxic algal blooms are degrading many coastal areas; knowing how they form will be key to preventing future outbreaks. And unchecked coastal development risks destroying ocean habitats that sustain economic activity and the natural splendor that for ages has drawn us to the sea.

One thing is clear: if we truly are to protect our oceans – and the many benefits they provide – we first must better understand them. We only recently discovered whole colonies of previously unknown types of life surviving at great ocean depths, drawing their life energy – not from the sun like other known life forms – but from chemicals under the seafloor. We have discovered that life exists in every drop of sea water, and we have



©Darlyne Murawski/
NGS Image Collection



refined our understanding of the way the oceans drive climatic patterns like El Niño, which shape the weather across the globe. Yet, despite such advances, the seas remain largely unexplored. More ocean data and research are critical for identifying new resources and economic opportunities, maintaining our military readiness, and ensuring healthy oceans for future generations.

In developing the recommendations contained in this report, we have been guided by the following core principles:

SUSTAINING THE ECONOMIC BENEFITS OF THE OCEANS – Future generations deserve to inherit healthy, bountiful oceans.

STRENGTHENING GLOBAL SECURITY – Freedom of the seas is integral to the strength and security of our nation.

PROTECTING MARINE RESOURCES – Strong protection of our ocean and coastal environment, using a precautionary approach and sound management, is no longer a choice, but a necessity.

DISCOVERING THE OCEANS – Exploring and understanding the oceans is critical to our well-being and survival.

In the pages that follow, we offer specific recommendations in twenty-five subject areas. For example:

To sustain economic benefits, we recommend working with coastal communities on plans for sustainable development; creating new incentives to reduce overfishing and develop guidelines for environmentally sound aquaculture; and increasing support for identifying and harvesting marine resources with pharmaceutical benefits.

To strengthen global security, we recommend working with the U.S. Senate to ensure early ratification of the Law of the Sea Convention; improving our ability to detect and deter maritime threats before they reach our shores; expanding efforts to maintain and exercise traditional freedoms of navigation and overflight around the world; and extending to 24 nautical miles the “contiguous zone” for enhanced federal law enforcement purposes.

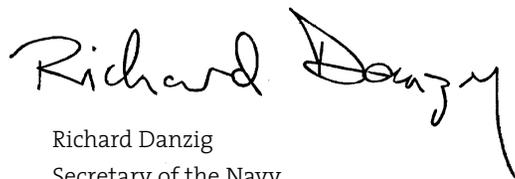
To protect marine resources, we recommend coordinating federal efforts with state and local “smart growth” initiatives in the coastal zone; taking new steps to reduce urban and agricultural runoff; strengthening efforts to protect and restore essential fish habitat; and exploring the concept of marine wilderness areas.

To better understand and use the oceans, we recommend expanding coastal, open-ocean, and seafloor observations; integrating satellite, buoy, and other observing networks; advancing basic and applied research to increase our knowledge of ocean and coastal areas; supporting exploration in underwater areas; and establishing a coordinated effort to promote ocean science education.

To ensure a coordinated, focused, federal effort to implement this report, we recommend establishment of a high-level task force composed of undersecretaries of relevant agencies and departments to be chaired by the Deputy National Security Advisor and the Chair of the Council on Environmental Quality.

We believe this report makes an important contribution to the national dialogue begun last year in Monterey. We look forward to working with you in developing and implementing a comprehensive federal policy to explore, protect, and sustain our oceans in the new millennium.

Sincerely,



Richard Danzig
Secretary of the Navy



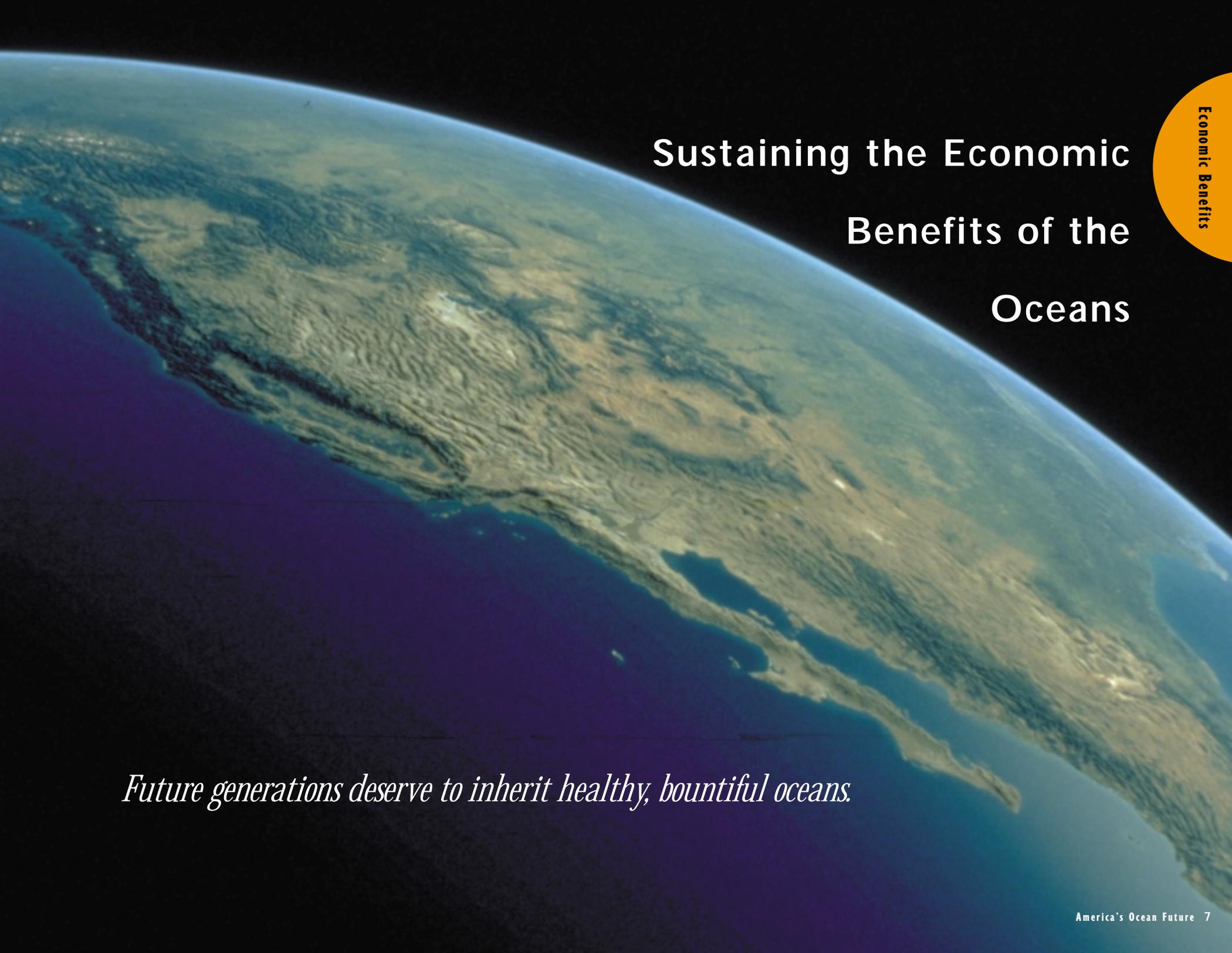
William M. Daley
Secretary of Commerce



*Today
we offer recommenda-
tions for a comprehensive
federal policy to explore, pro-
tect, and sustain our oceans
in the new millennium.*

“Seventy-one percent of our planet is ocean, and seventy-one percent of our body is salt water. . . . There is this extraordinary connection between who we are as human beings and what happens in this magnificent body of water.”

— First Lady Hillary Rodham Clinton

A satellite view of Earth from space, showing the Americas and the surrounding oceans. The landmasses are in shades of green and brown, while the oceans are a deep blue. The curvature of the Earth is visible against the black background of space.

Sustaining the Economic Benefits of the Oceans

Future generations deserve to inherit healthy, bountiful oceans.

Marine Transportation

Build the world's most technologically advanced, safe, secure, efficient, effective, accessible, globally competitive, dynamic, and environmentally responsible system for moving goods and people.



Our marine transportation system – which consists of waterways, ports and their intermodal connections, vessels, vehicles, and system users – supports our economy and national security through dependable all-weather transportation for the movement of goods and people. It is the most flexible, most cost-effective, and safest mode of domestic and international freight transportation, providing competitive access to suppliers and markets in an increasingly global economy. It enables the swift mobilization and supply of America's military, both through military assets and through the sealift and logistical support provided by the private commercial U.S. flag merchant fleet. And it also provides recreational value to millions of boaters, fishermen, and cruise passengers.

By 2010, U.S. foreign trade in goods is projected to more than double today's value, reaching \$5 trillion in constant dollars, with the volume of foreign trade cargo increasing by more than 30% to 1.7 billion metric tons. This rise in marine trade is expected to fuel demand for increasingly flexible and less expensive marine transportation services. This demand, as well as increases in recreational use, high-speed ferry transportation, cruise ship traffic, commercial fishing, and expanded U.S. military needs for force projection and supply, will strain the marine transportation system's services and infrastructure. However, the ability of today's system to handle tomorrow's emerging needs is severely challenged.

In response to a Congressional mandate, the Coast Guard, the Maritime Administration, the Army Corps of Engineers, the National Oceanic and Atmospheric Administration, the Environmental Protection Agency, and nine other federal agencies collaborated with stakeholders to assess the marine transportation system and present their findings in a report to Congress. The report of the Marine Transportation System Task Force addresses several concerns and recommendations to be implemented by the combined efforts of the private, local, state, and federal sectors. Highlights of the report are presented here.

Ongoing Concerns

- Many federal agencies, state and local governments, port authorities, private industries, and labor groups share responsibilities for managing safety, security, and environmental protection, making coordinated responses to challenges and opportunities very difficult to achieve.
- Innovative U.S. financing, regulatory changes, and tax mechanisms may be needed over the long run to spur the substantial public and private capital investments needed to meet growing demands.
- The marine transportation system infrastructure and supportive information systems may be stretched to their limits to cope with projected increases in both the system's users and the size, speed, and diversity of vessels.
- Growth in vessel traffic will increase risks to sensitive ocean, coastal, and inland environments.

Recommendations

- Facilitate coordination among all stakeholders by establishing a federal Interagency Committee for the Marine Transportation System, a nonfederal Marine Transportation System National Advisory Council, as well as regional and local committees.
- Explore funding strategies that coordinate public funding processes and maximize the effectiveness of public and private investments.
- Improve competitiveness and safety by establishing infrastructure and information systems that streamline vessel inspection, reporting and port clearance procedures, and that improve the marine transportation system traffic forecasts.

- Create a national cooperative marine transportation system research program.
- Achieve environmental protection and safety through improving local coordination, ballast water management, and design and system management of dredged channels.
- Establish supporting information management and infrastructure in: hydrographic and weather information; tracking cargo, passengers, and vessels; and waterways traffic management information.
- Meet national security objectives by balancing commercial demands with safeguards and inspections to protect against security threats and support military mobilization.

For more information

- <http://www.uscg.mil>
- <http://www.marad.dot.gov>
- <http://www.nos.noaa.gov>
- <http://www.usace.army.mil>
- <http://www.epa.gov/owow/oceans>

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Safe Navigation

Provide tools for safe navigation to eliminate deaths, injuries, and environmental and property damage.

Premised on mutual respect and shared commitment by government, industry, and labor, the Coast Guard's **Prevention Through People** program promotes marine safety and environmental protection by addressing the human element – the root cause of approximately 80% of marine accidents. Through this program, the Coast Guard works with mariners to develop innovative, non-regulatory solutions to human element issues, such as publishing advisory risk management guidelines and other “lessons learned” documents.

<http://www.uscg.mil/hq/g-m/nmc/ptp/>

The recent rapid expansion of trade, wealth, and recreational opportunities has led to a corresponding growth in vessel traffic and in the potential for accidents. About 3,500 ships are involved annually in accidents on our nation's waterways, and 50% of waterborne cargo contains hazardous materials. Human error is the cause of approximately 80% of those accidents. Educating mariners, pilots, crew, and rescuers about navigational concerns and maintaining a continuing dialogue among marine user groups will facilitate the creation of a safer operating environment.

To reduce the risk of accidents and spills, U.S. mariners and harbor pilots need information derived from new integrated electronic technologies, such as seafloor mapping, detailed large-scale digital vector charts, precise positioning systems, and real-time and predicted oceanographic and meteorological data. Expanded overseas charting services are also needed to support U.S. military and commercial navigation in foreign waters.

Because most of the nation's harbors and channels are not naturally deep enough to accommodate modern vessels, the U.S. dredges an average of 275 million cubic yards of sediment a year to maintain and improve the 299 deep-draft (greater than 14 feet) and 626 shallow-draft navigation projects. However, routine dredging can be environmentally destructive, and many of America's greatest seaports have contaminated sediment that cannot be dredged without harm to the environment. The nation's need for safe, efficient marine transportation must be balanced with the priority of healthy coastal waters.

Ongoing Concerns

- The rapid advance in the technological capabilities of navigational aids has outpaced the government's ability to provide the quality-controlled, standardized data streams needed to “fuel” new navigation products and systems.

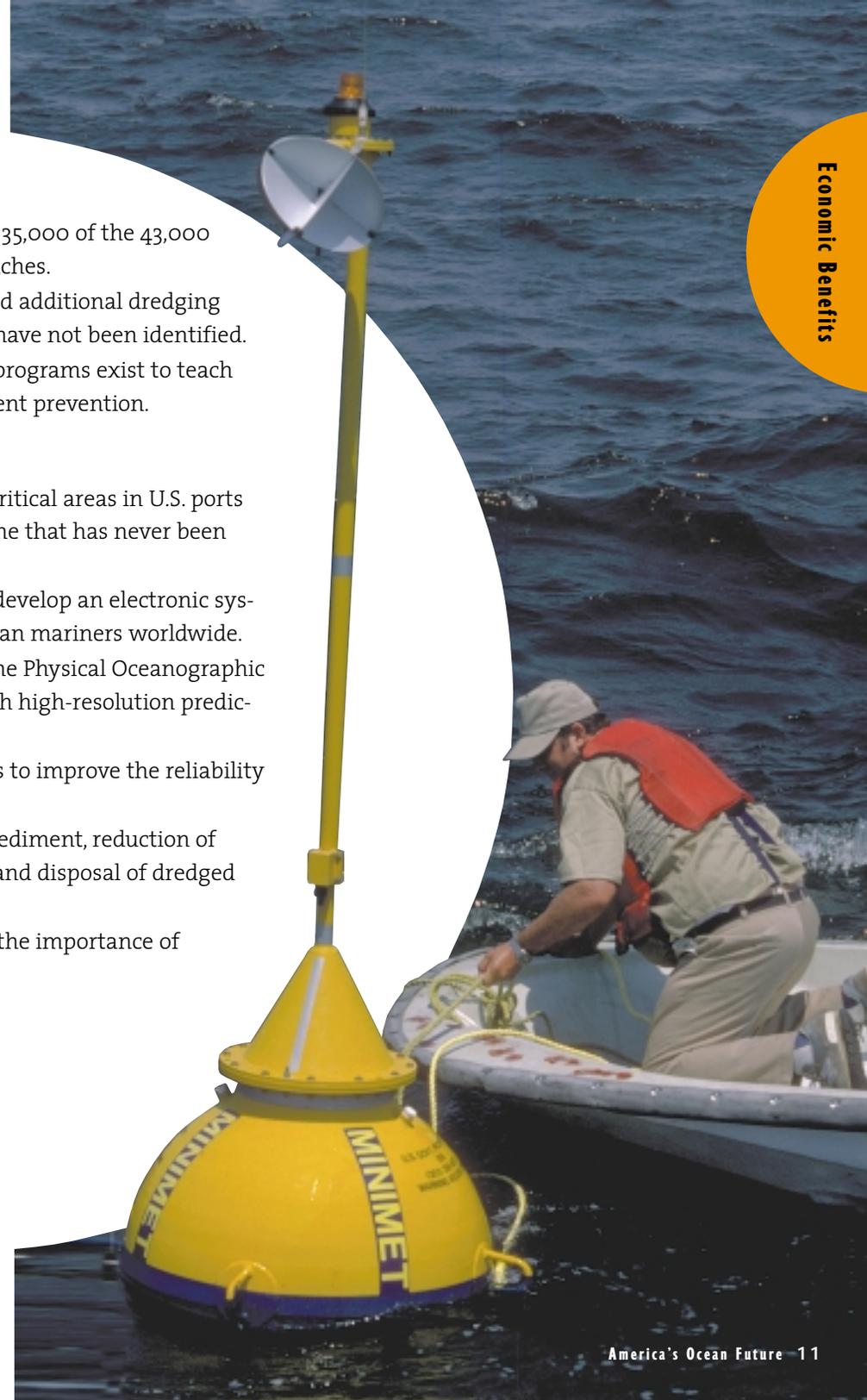
- Many areas of U.S. coastal waters have not been mapped in 50 years, including 35,000 of the 43,000 square nautical miles identified in 1993 as critical to U.S. ports and their approaches.
- Although increased maintenance dredging for existing navigation channels and additional dredging requirements for port improvements are required, better dredging techniques have not been identified.
- The greatest threat to safe navigation is human error. Yet, too few educational programs exist to teach commercial and recreational mariners the importance of human error in accident prevention.

Recommendations

- Eliminate the hydrographic survey backlog of 35,000 square nautical miles of critical areas in U.S. ports and their approaches, and map the one-third of the 95,000 miles of U.S. coastline that has never been mapped using photogrammetric methods.
- Complete the production of electronic charts for U.S. and overseas waters, and develop an electronic system for disseminating timely updates and corrections to U.S. military and civilian mariners worldwide.
- Deploy real-time environmental observation and prediction systems, such as the Physical Oceanographic Real-Time System (PORTS), in U.S. high-traffic areas, and complement them with high-resolution predictions of all navigationally significant weather and oceanographic conditions.
- Expedite the development of technologies for maintaining navigation channels to improve the reliability and safety of federal navigation projects.
- Conduct research on effective and environmentally sensitive management of sediment, reduction of the flow of sediment into waterways, remediation of contaminated sediment, and disposal of dredged spoil in an environmentally sound manner.
- Develop educational programs to teach commercial and recreational mariners the importance of avoiding human error in accident prevention.

For more information

- <http://chartmaker.ncd.noaa.gov>
- <http://www.usace.army.mil>
- http://www.opsd.nos.noaa.gov/d_ports.html
- <http://www.uscg.mil/>
- <http://marine.er.usgs.gov>
- <http://www.epa.gov/owow/oceans/dmmp>





Coastal Tourism

Create long-term opportunities for coastal tourism through sustainable practices and effective environmental protection.

The travel and tourism industry is the nation's largest employer and second-largest contributor to the U.S. gross domestic product, generating over \$700 billion annually. Coastal tourism and recreation comprise the largest and fastest-growing sector of the U.S. service industry, accounting for 85% of all tourism-related revenues.

Many coastal communities depend on healthy coastal ecosystems and clean coastal waters for their survival. Yet rapidly growing coastal populations, increasing numbers of visitors (180 million annually), and unsustainable coastal development are degrading the water quality and destroying the habitats that are the main attractions of coastal areas. Although tourism and recreation-related development are major factors shaping the use and management of U.S. ocean and coastal resources, this sector has not been regarded as requiring policy, management, planning, and resources. The federal government can help tribes and states, which have key roles in managing coastal tourism, achieve their goals of protecting vital coastal ecosystems while promoting economic growth and economic stability.

Ongoing Concerns

- Federal efforts to help tribal, state, and local partners promote and implement sustainable practices for coastal recreation and tourism are fragmented or limited.
- There is no systematic data collection on the magnitude, value, and impacts of coastal tourism and recreation, which should be the foundation of sound planning and sustainable management.
- Federal efforts to educate tourists and recreational users about safe and sustainable use of coastal resources are expanding, but the lack of coordination and resources significantly limits progress, and key opportunities are missed.
- Current financial and technical resources available to federal, tribal, state, and local entities are inadequate to effectively manage and safeguard many of the

coastal and marine protected areas and other tourism and recreation resources (e.g., national marine sanctuaries, national and state parks, city beaches) that are the foundation of coastal tourism and recreation.

- There are too few areas for marine tourism use.

Recommendations

- Collect and provide access to information on the magnitude, value, and impacts of ocean and coastal recreation and tourism, including information on a coastal-county basis and studies on the dynamics of tourism in coastal and marine areas.
- Build on existing groups to coordinate relevant federal, tribal, state, and other programs dealing with ocean and coastal resource management to foster a sustainable tourism industry.
- Mobilize public/private partnerships to develop coordinated and effective policies and public outreach programs related to coastal recreation and tourism.
- Provide guidance and technical assistance to tribal, state, community, and private-sector partners to help them sustainably manage coastal recreation and tourism.
- Evaluate current federal, tribal, state, and local programs related to recreation and tourism, and develop best management practices as part of general guidelines for managing sustainable recreation and tourism industries in the nation's coastal zones.
- Working with tribal, state, and local governments, create new areas for sustainable marine tourism, and provide access to these areas.

For more information

- <http://state-of-coast.noaa.gov/>
- <http://www.epa.gov/surf2>
- <http://www.mms.gov/intermar/marineac.htm>
- <http://www.whitehouse.gov/PCSD/>

In South Florida, the environment is the economy. A recent study found that over 2.3 million visitors spent \$1.6 billion in 1997 on recreation and tourism in the Florida Keys. The total economic impact of the visitors was \$2.9 billion in output/sales, \$1.7 billion in income, and almost 28,000 jobs. Ninety-four percent of all recreating visitors were concerned about protecting the environment of the Florida Keys.

<http://www-orca.nos.noaa.gov/projects/econkeys/econkeys.html>

CMC ©Don Kincaide

Coastal Communities

Create coastal communities with sustainable economies based on well-planned development and healthy coastal ecosystems.



Our coastal communities are the most densely populated and fastest growing areas in the U.S.: 14 of the nation's 20 largest cities are coastal, over 40% of new commercial and residential development is along the coast, and approximately 3,600 people move to the coast every day. Over 50% of the U.S. population lives by the coast today; by 2025, this figure is expected to reach 75%.

Coastal communities contain some of the nation's most productive and diverse natural resources, including valuable habitats, fisheries, recreational areas, and natural treasures. However, growing demands for access to the coast have resulted in habitat loss, water pollution, increased polluted runoff, and sprawl. Helping communities reduce damage from natural disasters, address contamination sites (e.g., brownfields), and revitalize waterfronts will make better use of existing developed areas and reduce unwise new development.

In addition, some portions of the U.S. coastline are severely eroding, threatening the property and livelihoods of coastal communities. Federal offshore sand resources, which are used for beach nourishment projects, are needed to address erosion problems. However, there are concerns about environmental harm from sand collection and replenishment activities, as well as potential conflicts with other users of the coastal ocean, such as fisheries.

Ongoing Concerns

- Many coastal communities lack the tools, resources, and information to strategically and sustainably address the impacts of rapidly growing coastal populations, including increased runoff from developed areas.
- Some federal and state development policies and practices have unintentionally encouraged suburban sprawl and disinvestment in urban cores, or building in disaster-prone areas.
- Some policies have allowed for public and private investment in coastal areas prone to natural disasters, increasing the risks of loss of life and property and damage to natural habitats.



- No overall management framework exists to ensure that federal offshore sand resources are used in a timely, cost-effective, and environmentally sound manner.

Recommendations

- Promote comprehensive management by helping tribal, state, and local governments adopt and implement sustainable development management plans for coastal zones.
- Examine and revise policies and programs, such as flood insurance subsidies, that promote unsustainable or hazardous development.
- Increase support for tribal, state, and local efforts to plan for and mitigate the impacts of natural hazards on communities and natural resources; to redevelop brownfields appropriately and revitalize waterfronts in coastal communities; and to reduce the flow of polluted runoff into coastal watersheds, bays, and estuaries.
- Work with tribes, communities, states, nongovernmental organizations, and across federal agencies to produce useful indices of sustainable development to measure and track progress at local, regional, and national levels.
- Work with tribes, communities, states, nongovernmental organizations, and across federal agencies to create a coordinated “digital coast” electronic information system for coastal decision makers that provides easy access to comprehensive data on such topics as community vulnerability to natural hazards, impacts of land-use changes, and maps and descriptions of coastal habitats.
- Form closely coordinated partnerships among the federal government, tribes, coastal states, and communities to develop

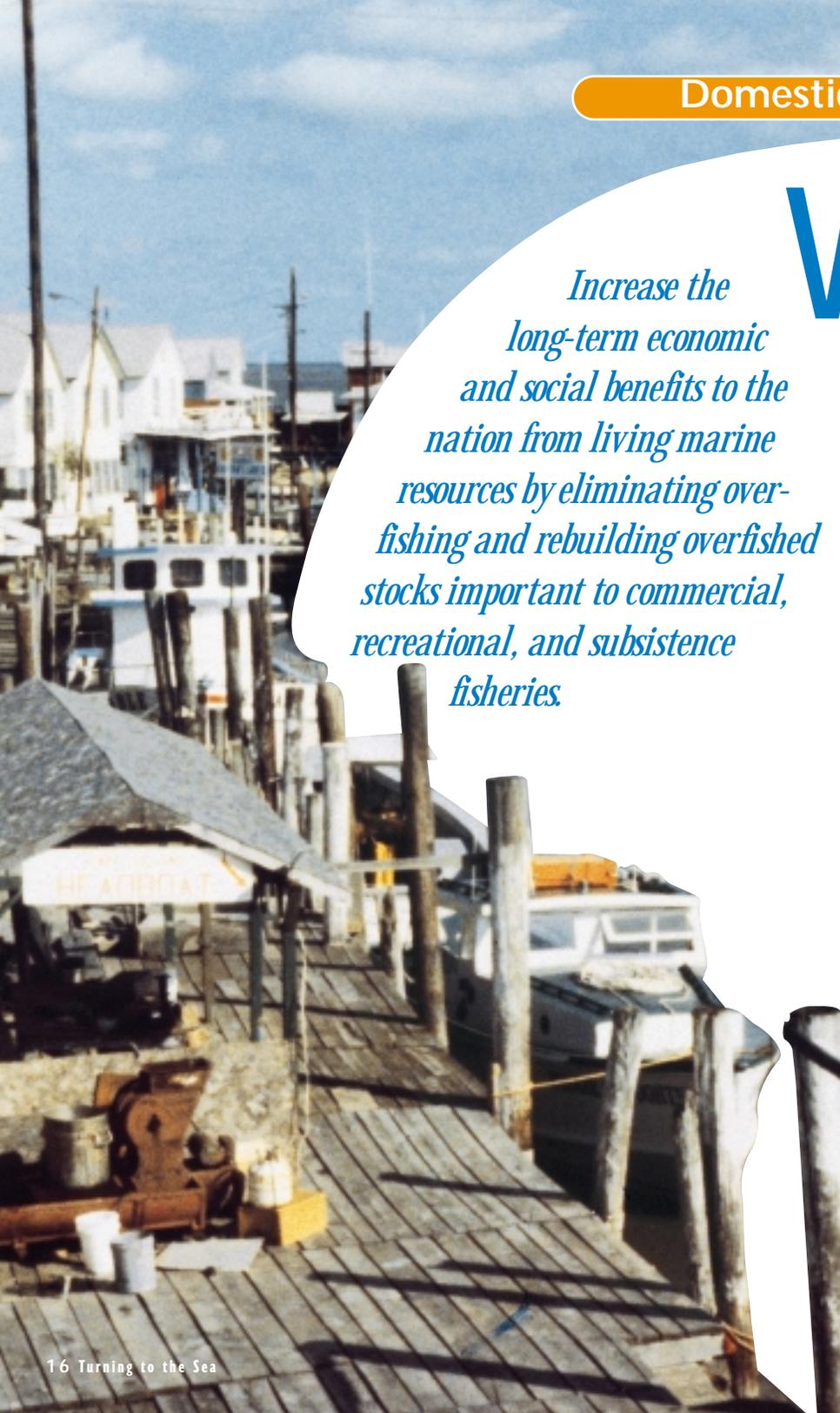
Thirty-three of the thirty-five U.S. coastal states and territories now have **coastal zone management** plans to help coastal communities improve long-term planning and sustainable use of their natural resources. This state-federal partnership helps communities implement pollution controls, land-use planning, waterfront revitalization, education and other efforts to address growing coastal populations and to reduce habitat destruction, harmful algal blooms, runoff pollution, and vulnerability to storms and other hazards. For example, in Florida, coastal management is helping revitalize waterfront areas, and plan and implement the **South Florida Ecosystem Restoration Initiative**, the largest coastal restoration project in history.

<http://www.nos.noaa.gov/Programs/ocrm.html>

regional sand management initiatives; analyze the potential impacts associated with the use of federal sand resources; and identify possible mitigation measures to offset these impacts.

For more information

- <http://state-of-coast.noaa.gov/>
- <http://www.mms.gov/intermar/marineac.htm>
- <http://www.epa.gov/win>
- <http://www.epa.gov/surf2/>
- <http://marine.er.usgs.gov>
- <http://www.whitehouse.gov/PCSD/>
- <http://www.livablecommunities.gov>



Domestic Fisheries

Increase the long-term economic and social benefits to the nation from living marine resources by eliminating overfishing and rebuilding overfished stocks important to commercial, recreational, and subsistence fisheries.

Waters under U.S. jurisdiction contain more than one-fifth of the world's most productive marine areas. However, fisheries resources in these waters, the ecosystems that support them, and the communities that depend on them are under increasing pressure to meet a growing demand from consumers, who spend about \$46 billion a year on fish products.

In the past, U.S. government subsidies fostered increases in capacity in the fisheries sector, and until recently, many fisheries in the U.S. had unrestricted access. As a result, too many boats were chasing too few fish. Several other factors have exacerbated the problems facing domestic fisheries. Bycatch (the incidental capture of nontarget species) has significantly harmed many species of fish and endangered sea turtles, marine mammals, and birds. In addition, much of the bycatch is discarded because it is less valuable than the target species. Other human stressors, such as coastal development, pollution, anchoring on coral reefs, and some types of fishing gear, have substantially degraded habitat essential for fish productivity.

With strong management in recent years, such as the federal implementation of programs controlling access to fisheries, many stocks are beginning to recover. Several fisheries have also begun to address the bycatch issue by requiring turtle- and fish-excluder devices, and the regional Fishery Management Councils are involving broader communities in the management of the nation's fisheries. But even with current efforts, 33% of federally managed fish stocks are overfished, and it will take ten years or more before some fisheries fully recover and become commercially viable and sustainable. New fisheries management practices will require a more broad-based ecosystem approach.

Ongoing Concerns

- Fishing overcapacity continues to exist in many U.S. fisheries.
- Bycatch of nontarget species, although declining, continues to threaten marine biodiversity and reduce economic opportunities in other fisheries.
- Current harvest restrictions may have to be even more stringent to

eliminate overfishing and rebuild stocks to achieve sustainable economic benefits.

- The status of 65% of federal marine fisheries stocks is unknown, hampering our ability to manage fisheries sustainably.
- There are major data gaps on bycatch levels in many fisheries and on the impacts of fishing activities on most essential fish habitats.
- The short-term effects of much-needed marine conservation measures may severely strain the economies of local communities.
- Consumers are unaware of how their consumption drives fishing pressure, and are unable to distinguish between sustainably and nonsustainably harvested fisheries products.

Recommendations

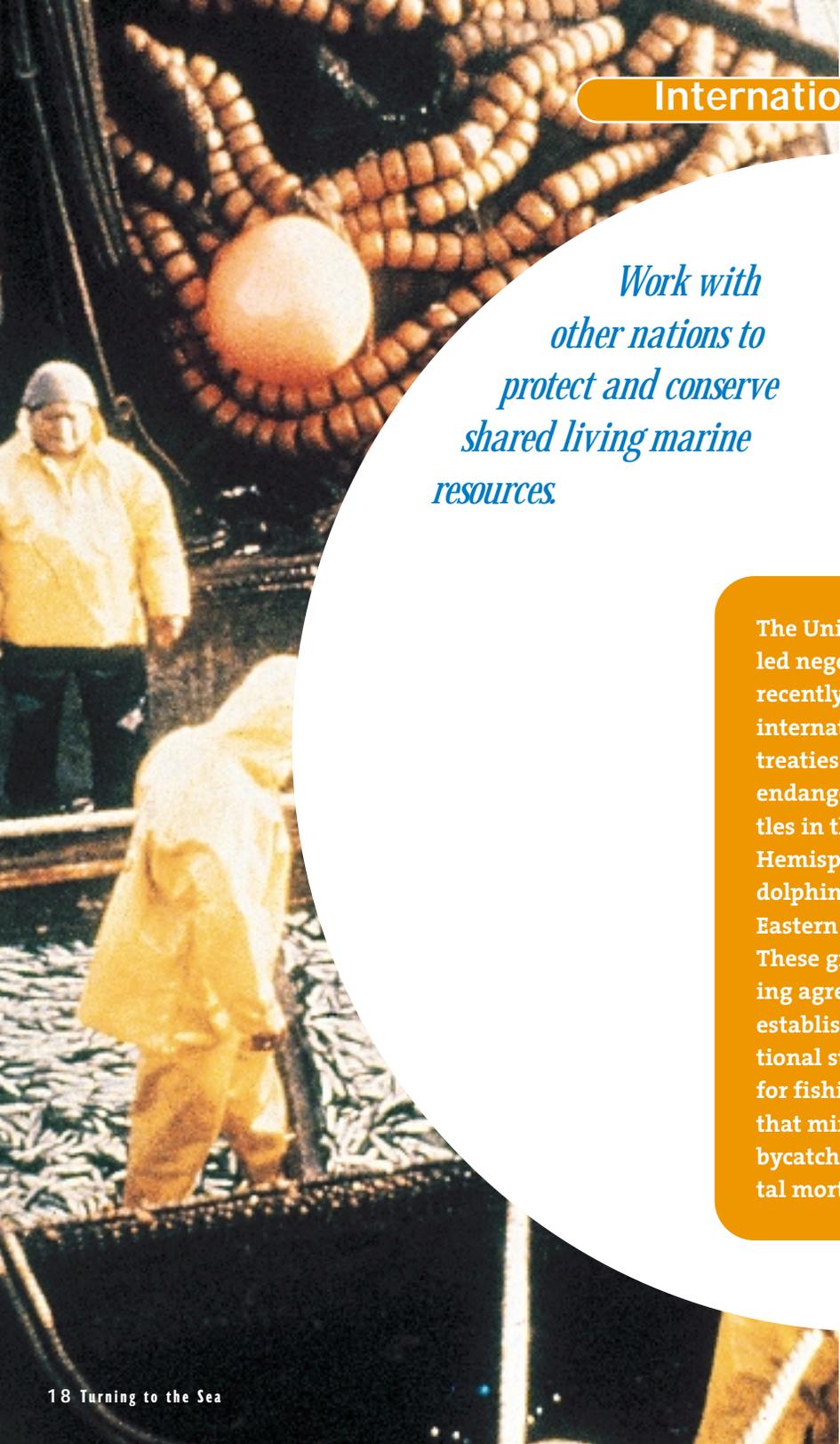
- Evaluate and apply creative measures to reduce fishing overcapacity, including leveraged buy-outs and rights-based fishing.
- Create short- and long-term opportunities to decrease the economic burden on fishing communities by redirecting fishing effort into supporting activities, such as fishery research.
- Provide fisheries managers with the best available technology to survey and properly assess fish stock levels, enabling them to better set appropriate fishing limits.
- Create incentives to reduce adverse effects on nontarget species and marine habitat.

Georges Bank, one of the richest fishing grounds in the world, was overfished first by foreign fleets, then by the build-up of the U.S. domestic fleet. Today, as a result of strong management actions, haddock, cod, and flounder populations and the fishing yields from these stocks are once again increasing. The scallop fishery has recently reopened in a portion of Georges Bank under a pilot project that supports the fishing industry and promotes sustainable harvesting.

- Develop technologies to improve fisheries science and further reduce bycatch and waste.
- Explore the scientific and conservation benefits of marine harvest refugia and other protected areas.
- Support the development of an ecolabelling system that provides consumers with additional information so that they have the option of purchasing sustainably harvested fish.
- Seek Congressional support for the Clinton/Gore Lands Legacy Initiative, which calls for significant funding to help restore U.S. fisheries.

For more information

- <http://www.nmfs.gov>
- <http://www.uscg.mil>
- <http://www.st.nmfs.gov/st1/index.html>
- <http://www.nmfs.gov/councils/>
- <http://www.nmfs.gov/sfa/>



International Fisheries

*Work with
other nations to
protect and conserve
shared living marine
resources.*

The United States led negotiations that recently established international treaties protecting endangered sea turtles in the Western Hemisphere and dolphins in the Eastern Pacific. These ground-breaking agreements establish international standards for fishing practices that minimize bycatch and accidental mortality.

Increasing world population and wealth have led to higher demand for edible fish and excess capacity of fishing boats. The United Nations (UN) Food and Agriculture Organization (FAO) forecasts that by 2010, worldwide demand for seafood will top 110 million tons, but catches will fall short by 40 million tons. Nearly 70% of the world's marine fish stocks are overfished, fully exploited, or rebuilding only under protective management regulation. Pressure to increase production already has the industry fishing farther down the food chain, causing potential imbalances in the ecosystem. The race for fish also leads to high rates of bycatch – of nontarget fish species and vulnerable marine mammals, turtles, and seabirds alike – and wasted discards.

Though a growing number of regional organizations are charged with managing specific fish stocks, the future of the world's fishery resources is uncertain. At the 1992 Earth Summit in Rio de Janeiro, all nations joined in the call for new international agreements and mechanisms to achieve sustainable marine fisheries. The U.S., as one of the world's leading fishing nations, plays a key role in expanding international cooperation to manage and conserve global fishery resources. For example, the U.S. has successfully used trade measures – or the threat of trade measures – to convince exporting nations to end wasteful and destructive fishing methods. Focused effort can be especially effective because only ten countries, including the U.S., account for 70% of total global production.

Ongoing Concerns

- The two key tools for international fisheries management – the 1995 UN Straddling and Highly Migratory Fish Stocks Agreement (Straddling Stocks Agreement) and the FAO Agreement on High-Seas Fishing Vessel Compliance (FAO Compliance Agreement) – have yet to enter into force. Also, the FAO Code of Conduct for Responsible Fisheries (Code) is not yet widely implemented by

fishing nations.

- Nations continue to subsidize their fishing industries, leading to overcapitalization of fishing fleets and increasing pressure to maximize harvest.
- Conservation and management schemes are undermined by illegal, unregulated, and unreported fishing. A number of nations also offer “flag of convenience” registry to fishing vessels with no accompanying oversight of their fishing practices.
- Conservation and management schemes have not always been successful in averting overfishing or allowing for the rebuilding of depleted stocks.
- Parties to international agreements and regional fishery management organizations often exceed agreed-upon quotas or are out of compliance with those organizations’ conservation and management regimes.

Recommendations

- Promote ratification by signatory nations of the Straddling Stocks Agreement and the FAO Compliance Agreement, and implementation of the FAO Code at all appropriate bilateral meetings.
- Develop proposals to implement key provisions of the above agreements, such as a precautionary approach and transparency (openness in the decision-making process), through regional fishery organizations and arrangements.
- Increase bilateral pressure to foster agreements to rebuild overfished species and to deter illegal, unregulated, and unreported fishing. Participate actively in FAO initiatives to develop an international plan of action to address such fishing practices.

- Take a leading role in implementing the new FAO action plan on fishing fleet overcapacity.
- Strongly encourage the members of the World Trade Organization to eliminate subsidies that lead to overcapacity as part of the new round of negotiations set to begin in November 1999.
- Support and develop means (including trade-based means) bilaterally and through regional fisheries organizations, to ensure compliance with fishery management initiatives. Identify and negotiate new regional, multilateral agreements to eliminate destructive fishing practices.
- Work with other countries to evaluate vulnerable marine species, and take an active role in international decision-making on listing new marine species under the Convention on International Trade in Endangered Species of Wild Flora and Fauna.

For more information

- <http://www.nmfs.gov>
- <http://www.state.gov/www/global/oes>
- <http://www.uscg.mil/>
- <http://www.fao.org/waicent/faoinfo/fishery/>



Aquaculture

Promote the development of environmentally safe and sustainable aquaculture to meet the growing national and global needs for protein from seafood and to relieve pressure on wild fish stocks.

Expected increases in world population are projected to intensify the global demand for edible seafood. The aquaculture industry, which propagates and rears aquatic plants and animals, can provide consumers with high-quality, safe, and affordable seafood and other important fish products, and thereby reduce pressure on wild stocks and help their recovery.

The global aquaculture industry, whose production is valued at nearly \$1 billion in the U.S. and \$40 billion worldwide, currently supplies less than 10% of the nation's seafood demands. Improving U.S. aquaculture production can simultaneously provide more seafood to domestic markets and help offset the U.S. trade deficit in edible seafood products, which has increased by 139% since 1992 and now stands at \$6 billion annually – the largest for any agricultural commodity. Aquaculture can also make major contributions to U.S. local, regional, and national economies by creating business opportunities both here and abroad and by providing employment in a new and diverse industry.

The U.S. has the opportunity to lead the world in developing sustainable aquaculture technologies based on renewable resources and advancing international guidelines for the industry, which provides 25% of the world's fish supplies. However, the continued growth of aquaculture in land-based systems and coastal environments and any expansion of aquaculture into the U.S. Exclusive Economic Zone must be conducted in an environmentally sound manner. Although coastal environments are primarily under state control, the federal government can play a significant role in assisting tribal and state aquaculture efforts through research and the regulatory process.

Ongoing Concerns

- U.S. aquaculture development is restricted by a lack of species ready for commercial culture, sophisticated engineering requirements, sparse information on diseases and ways to treat them, and marketing and distribution concerns.
- Concern exists about the potential environmental impacts of some aquaculture

operations, especially genetic and disease consequences for wild stocks, introduction of nonindigenous species, coastal habitat alteration, effluent effects on habitat, and interactions with marine mammals and endangered species.

- No comprehensive regulatory framework exists for permitting aquaculture operations.
- Although aquaculture has proven to be a valuable tool to increase salmon populations, its effectiveness remains unknown for other fish and shellfish stocks.

Recommendations

- Support research and develop pilot projects for hatchery and nursery development, closed-system production techniques, processing, and marketing.
- Work with stakeholders to develop guidelines for environmentally sound and sustainable aquaculture by the end of the year 2000, and promote domestic and international compliance with them.
- Work with stakeholders to create an integrated regulatory framework for coastal or inland aquaculture.
- Develop a comprehensive federal permitting and certification process for the open-ocean aquaculture industry in the U.S. Exclusive Economic Zone, consistent with the U.S. policy on non-indigenous species.

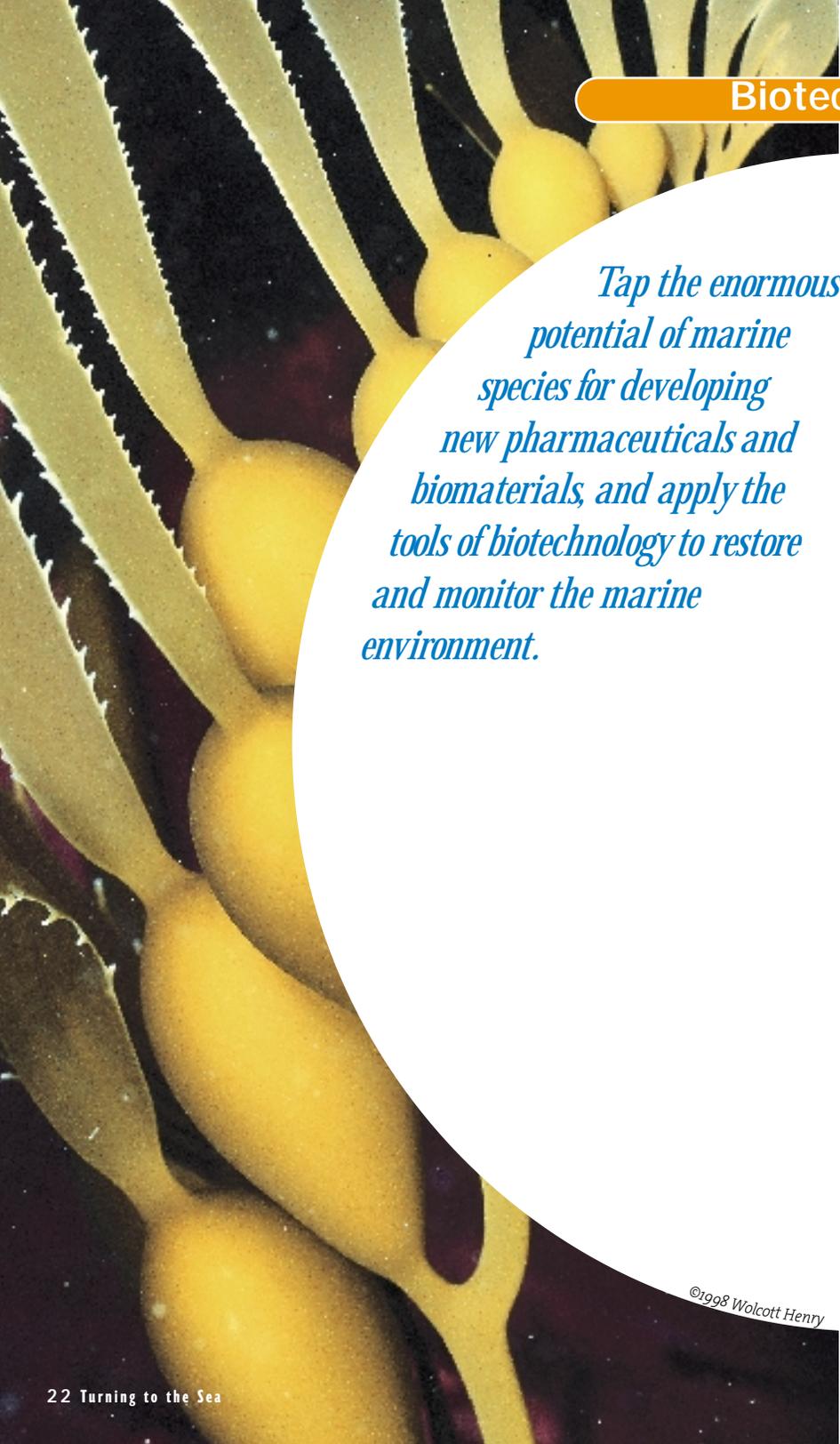
Aquaculture research continues to pay off. As a result of **Sea Grant** research, a small, local soft-shell crab industry has grown to a multi-million-dollar investment extending from New Jersey to Florida. Working with the fishing industry, researchers, students, and others, aquaculture specialists have provided seed oysters and expertise to rebuild oyster bars in the Chesapeake Bay. And in New England, many community partnerships are underway to develop small-scale, low-impact economic opportunities in shellfish aquaculture for local fishermen using new information and technologies.

<http://www.nsgo.seagrants.org/research/aquaculture/index.html>

- Integrate aquaculture development with wild stock management and environmental stewardship.
- Evaluate wild stock enhancement through aquaculture as a method to accelerate recovery of depleted stocks, and implement stock enhancement programs where practicable.
- Through the Joint Subcommittee on Aquaculture, improve coordination of U.S. government aquaculture research and assistance to tribal, state, and local governments, and industry.

For more information

- <http://swr.ucsd.edu/fmd/bill/aquapol.htm>
- <http://www.susdev.noaa.gov/aquacult.html>
- <http://www.fao.org/waicent/faoinfo/fishery/>



Biotechnology

Tap the enormous potential of marine species for developing new pharmaceuticals and biomaterials, and apply the tools of biotechnology to restore and monitor the marine environment.

In 1990, leading scientists predicted that the application of the modern tools of biotechnology and molecular and cellular biology to marine organisms and ecosystems would create a revolution in the ocean sciences that would be fundamental in nature, exponential in pace, and unprecedented in its scientific and economic impacts. In the decade that has followed this prediction, stunning results have been reported as the tools of marine biotechnology have been applied to solve problems in the areas of public health and human disease, seafood safety and supply, new materials and processes, and marine ecosystem restoration and remediation.

Many classes of marine organisms demonstrate a wide variety of compounds with unique structural features that suggest medicinal, agricultural, and industrial applications. However, even though 80% of all life forms on Earth are present only in the oceans, their enormous potential as the basis for new products remains largely unexplored. The U.S. government has traditionally invested less than 1% of its total biotechnology research and development budget in marine biotechnology. Productive new avenues for the commercial development of marine-derived compounds will enhance the use of aquatic resources and contribute to the global economy.

Ongoing Concerns

- There may exist potential risks related to the release of genetically altered species within the marine environment.
- Current technology is inadequate both to access remote marine biotechnology sites and to commercially develop marine biotechnology products.
- A lack of information about baseline conditions of the marine environment makes it difficult to assess the environmental impacts of biotechnology.
- There is no mechanism currently in place to ensure that profits derived from publicly owned resources will be shared with the public and used appropriately.

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Recommendations

- Increase support for sustainable harvesting and testing of marine compounds by both government agencies and commercial pharmaceutical companies as possible treatments for AIDS, inflammatory or infectious diseases, and cancers.
- Assess the potential risks of genetically modified marine organisms to human health, marine diversity, and the environment, and communicate any concerns to the public.
- Develop investment incentives to encourage partnerships with academia and industry in marine biotechnology.
- Support research on the environmental effects of extracting marine organisms for biotechnology purposes.
- Support the application to marine sciences of modern biotechnology tools commonly used in the biomedical arena.
- Develop technologies to access and develop marine biotechnology sites, such as remote and manned submersibles, and techniques to screen products and commercially reproduce chemical compounds without requiring more raw material.
- Focus on organisms found in extreme environments to identify unique products with high commercial potential.
- Consider establishing a federal marine environment fund to benefit from royalties and payments from commercial uses of federally owned resources.

Dozens of promising sea-based products are being developed, including a cancer therapy made from algae and a painkiller taken from snails. Other products, such as an anti-inflammatory drug extracted from an organism called the Caribbean sea whip, are under review by the U.S. Food and Drug Administration.

http://www.fda.gov/fdac/features/1998/198_deep.html

For more information

- <http://www.imb.nrc.ca/imb/imb.html>
- <http://www.nsgo.seagrant.org>
 - <http://www.umbi.umd.edu/umbi.html>
 - <http://www.biotech.wisc.edu/biotech.html>
 - <http://www.eng.nsf.gov/bes/default.htm>
 - <http://www.geo.nsf.gov/oce/biotheme.htm#tech>
 - <http://www.nucb.org/>

Offshore Oil and Gas

*Maintain safe
and environmentally
sound domestic energy
supplies and alternative
fuel sources.*

To date, offshore oil and gas activity has provided over \$19.7 billion to the nation's **Land and Water Conservation Fund**. Each year, however, Congress does not fully use these funds for conservation. The **Clinton/ Gore Lands Legacy** proposal would ensure that the monies are spent only for their original purpose – improving and protecting our nation's lands and waters.

The outer continental shelf contains significant oil and gas resources that are vital to our domestic energy supplies and national security needs, contributing 22% of domestic oil and 27% of natural gas production. Natural gas reserves in the outer continental shelf are particularly important because natural gas has major environmental benefits over other fossil fuels. Cleaner burning, it is increasingly being used in the conversion of electrical power-generating stations from oil- or coal-fired facilities.

The federal share of offshore oil and gas revenues averages about \$4 billion a year. Much of the existing leasing and development occurs in the central and western Gulf of Mexico. In recent years, the rapid development of deep-water technology has led to a strong move by industry to both lease and operate in ever-deeper waters. Over 4,000 platforms are operating in waters up to 3,900 feet deep, and over 30 rigs are drilling in water deeper than 1,000 feet, including one deeper than 7,700 feet. By the end of 2000, production from Gulf deep-water fields is expected to account for one-half of the total Gulf of Mexico outer continental shelf oil production and one-third of the total outer continental shelf gas production.

Advances in technology have made offshore oil and gas production cleaner and safer than ever. Since 1980, 6.9 billion barrels of outer continental shelf oil have been produced with a spillage rate of less than 0.001%. Despite these advances, however, environmental concerns have led to congressional and executive moratoria since 1981, and many of our coastal areas are now closed to new leasing through the year 2012. In addition, new leases are permanently banned in National Marine Sanctuaries.

Many coastal states and communities object to oil and gas development off their coastlines. One way that coastal states and the public can par-

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ticipate in decisions on federally regulated offshore activity is through the coastal zone consistency process, which allows them to review and comment on proposed projects or permits that may affect state coastal management programs. Federal actions likely to affect any land/water use or other natural resources in the coastal zone must be consistent with the states' enforceable policies.

Ongoing Concerns

- Multiple-use conflicts can arise between outer continental shelf oil and gas activities and other ocean-based activities, such as commercial and sport fishing, tourism and recreation, vessel traffic, military operations, and marine protected areas.
- While outer continental shelf oil and gas development brings employment and revenue to coastal states and communities, it also may result in accelerated coastal development with its attendant problems, including additional demands on infrastructure and the environment.
- Uncertain outer continental shelf boundaries may lead to disputes with other coastal nations regarding ownership of certain oil and gas reserves unless the U.S. joins the United Nations Convention on the Law of the Sea.

Recommendations

- Increase research on methods and technology to minimize risks to human safety and to coastal and ocean environments.
- Through meetings, workshops, and negotiation, work with all stakeholders to ensure environmentally sound and safe outer continental shelf energy extraction.

- Continue efforts to provide states and other stakeholders with early information on proposed outer continental shelf oil and gas exploration and other activities.
- Encourage production of natural gas, as a cleaner source of energy, from areas where production is still permitted under the outer continental shelf moratoria.
- Join the United Nations Law of the Sea Convention.
- Accelerate scientific research on marine gas hydrates (methane and other gases existing in a frozen state below the ocean floor) as a potential long-term energy resource.

For more information

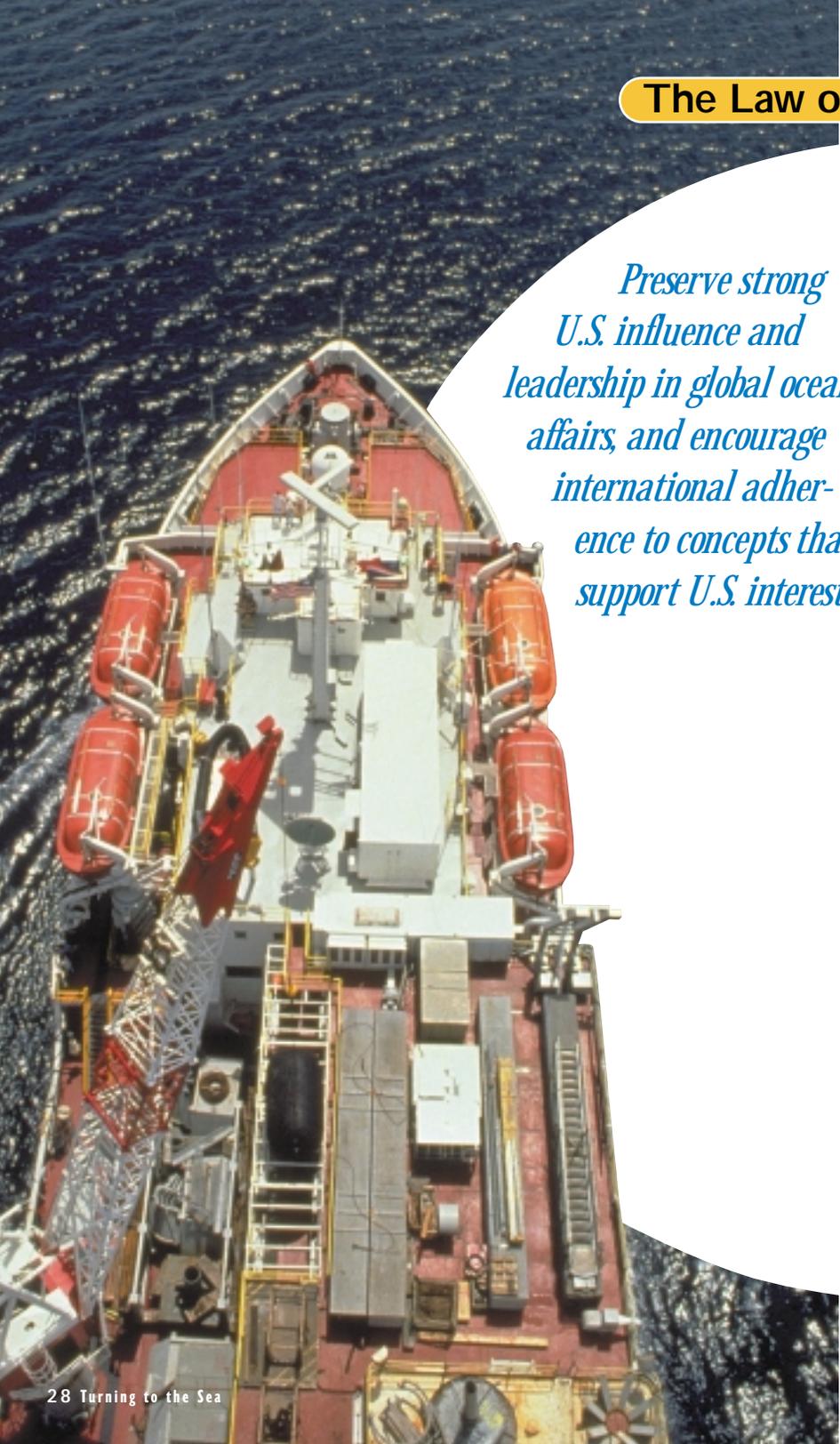
- <http://www.mms.gov>
- <http://marine.er.usgs.gov>
- <http://www.gomr.mms.gov/homepg/regulate/environ/rigs-to-reefs/information.html>

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Strengthening Global Security

Freedom of the seas is integral to the strength and security of our nation.



An aerial photograph of a large red and white ship, likely a research vessel or supply ship, sailing on the dark blue ocean. The ship's deck is visible, showing various structures, ladders, and equipment. The ship is moving towards the viewer, leaving a white wake in the water.

The Law of the Sea Convention

Preserve strong U.S. influence and leadership in global ocean affairs, and encourage international adherence to concepts that support U.S. interests.

The United Nations Convention on the Law of the Sea provides a comprehensive international legal framework governing the world's oceans. Currently, 131 nations are party to the Convention, including all of the major maritime powers (except the U.S.), most of our key allies, and many important nonaligned states. The Convention supports the full range of U.S. interests in ocean activities, law, and policy. It preserves our rights of military mobility in the world's ocean and coastal waters; ensures free movement of global maritime commerce; secures our national jurisdiction over living and nonliving resources off our shores; clarifies our high-seas freedoms for laying cables to support communications; establishes an internationally agreed-upon framework for national efforts in maritime law enforcement, marine environmental protection, and marine scientific research; and creates a framework for settling international disputes.

In the late 1980s, there was widespread agreement among the industrialized nations that the Convention's deep-seabed mining regime required basic changes. Recognizing that the Convention would soon enter into force without the U.S. and other major western powers as parties, the Secretary General convened informal negotiations aimed at amending Part XI of the Convention. These negotiations concluded in 1994 with an Implementing Agreement that amends the formerly flawed Part XI and meets all of the specific objections previously expressed by the U.S. and other industrialized nations to the Convention's deep-seabed mining provisions. All sectors of the U.S. ocean community represented at the National Ocean Conference affirmed their support of the Convention, and the President, in his June 12, 1998, keynote speech at the Conference, reasserted that accession to the Convention and ratification of the Implementing Agreement is a high-priority objective of U.S. ocean policy.

Ongoing Concerns

- Though the Law of the Sea Convention and its reforming agreement have been placed in the highest priority category of agreements requiring Senate action, the Senate Foreign Relations Committee has not scheduled hearings. Thus, the Senate has been unable to review the Convention and support the U.S. becoming a party to it.
- The U.S. position as a nonparty to the Law of the Sea Convention is increasingly undercutting U.S. influence over other nations' implementation and adherence to the provisions that support our interests. Examples of excessive maritime claims that are counter to U.S. interests are extended boundary claims that could affect U.S. access to offshore resources, and requirements for coastal state permission to transit through territorial seas or international straits.
- The U.S. position as a nonparty often slows or complicates approval for U.S. ship and aircraft access to conduct marine scientific research in foreign jurisdictional waters.
- The U.S. cannot nominate judges for the Law of the Sea Tribunal, optimize U.S. influence on maritime dispute resolution, or participate fully in the International Seabed Authority.
- The U.S. is at risk of losing its influence and leadership position in critical international fora for dealing with the oceans, such as the International Maritime Organization. U.S. proposals for maritime safety and environmental protection guidelines are increasingly met with open skepticism because of the U.S. position as a nonparty to the Law of the Sea Convention.

Recommendation

- The President, the Vice President, and the Cabinet should continue to work with the Senate – and particularly the Senate Foreign Relations Committee – to ensure that the U.S. joins the Law of the Sea Convention as soon as possible.

For more information

- <http://www.state.gov/www/global/oes/oceans/index.html#law>

A large U.S. Navy ship, likely a carrier or cruiser, is shown from a low angle, looking up at its complex superstructure. The ship's hull is white with red and blue stripes. In the foreground, several sailors in white uniforms and caps are visible, some holding a large American flag. The sky is clear and blue.

Freedom of Navigation

Maintain U.S. national and economic security and leadership in promoting global stability and preserving global navigational freedoms.

The U.S. has always recognized and defended the traditional freedoms of navigation and overflight on and over the world's oceans for military and commercial purposes. Internationally agreed-upon freedoms of navigation – key to our ability to import raw materials and export finished products to global markets – are essential to our economic security. Freedom of navigation is also essential for national security, enabling the worldwide movement of U.S. military forces and the sealift and airlift needed for their support.

The complex global political/military environment of the post-Cold War era puts a premium on forces that can move quickly anywhere in the world's oceans, including through more than 250 international straits, to provide military presence for diplomatic purposes without infringing on any nation's sovereignty, to project power from the sea, to enforce United Nations sanctions, or to conduct humanitarian operations. In the past decade, there have been twelve U.S. and coalition military operations that were critically dependent on internationally recognized transit rights and high-seas freedoms of navigation. Forward presence of ocean-based military assets supports U.S. intelligence, surveillance, and reconnaissance activities, providing a better understanding of developing international tensions and potential threats, deterring hostilities, and promoting global stability and security.

The customary international freedoms of navigation that are critical to economic, national, and international security are codified in the Law of the Sea Convention. Continued exercise of our navigational rights and freedoms is essential to the future strength of our nation and to global stability.

Ongoing Concerns

- Continued failure to join the Law of the Sea Convention could diminish U.S. influence and leadership in international ocean affairs and undercut our ability to resist excessive maritime claims worldwide.
- Failure to conduct our domestic ocean affairs and global operations consistent with the Convention could restrict U.S. navigational rights and freedoms critical to our economic and national security.
- Many nations make maritime claims and other proposals – such as military exclusion zones or nuclear-free zones – that could have the effect of limiting or denying U.S. military and commercial ship mobility in critical areas of the world’s oceans.
- Domestic and international ocean initiatives and the U.S. military’s ability to test, train, exercise, and operate in the marine environment have the potential to conflict.

Recommendations

- The President, the Vice President, and the Cabinet should continue to work with the Senate – and particularly the Senate Foreign Relations Committee – to have the U.S. join the Law of the Sea Convention.
- Expand the U.S. freedom of navigation program using Navy, Coast Guard, and other national assets to exercise openly the traditional freedoms of navigation and overflight in areas of unacceptable claims.
- Work within an interagency structure to coordinate initiatives to maintain freedom of navigation and national security.

For more information

- <http://www.navy.mil>
- <http://www.defenselink.mil>

Maritime Law Enforcement

Maintain the security of U.S. coastal borders, ports, and harbors through improved maritime law enforcement.

The U.S. is a world leader in the enforcement of laws concerning drug and illegal immigrant smuggling, customs regulations, harvesting of living marine resources in our Exclusive Economic Zone, and marine safety and environmental protection. International maritime criminal activities pose clear threats to our borders, our economy, our environment, and our national security and require strong offshore law enforcement. Additionally, the post-Cold War era has brought emerging threats, such as terrorism, arms trafficking, evasion of international trade sanctions, and piracy, each with potential maritime components. Critical U.S. ports and waterways infrastructure, commercial carriers moving U.S. military cargo, and large numbers of U.S. citizens aboard cruise ships may be at risk.

The marine transportation system is especially vulnerable to illegal and terrorist activities because its scale, complexity, and pace of activity often overwhelm local, state, and federal detection and enforcement capabilities and private-sector protective measures. Increased cooperation with our international partners is needed to disrupt illegal activity before contraband is loaded onto vessels destined for the United States. Enforcement efforts must also take full advantage of maritime transportation choke points and challenge suspect vessels before they reach U.S. ports. As governments remove barriers to trade and travel, U.S. officials need more information on the cross-border flow of people and goods and on other maritime activities to better identify criminal and other illegal actions.

Ongoing Concerns

- International criminal and terrorist threats are constantly changing and adapting to current law enforcement capabilities. Today's communications and integrated intelligence systems lack the

sophistication to support real-time monitoring of vessels, people, and cargo movements.

- High-level awareness of the emerging threats to the marine transportation system is required, along with the interservice, inter-agency, and international coordination needed to address them.
- The U.S. currently claims a 12-nautical-mile contiguous zone, yet customary international law, as reflected in the United Nations Convention on the Law of the Sea, allows states to claim a 24-nautical-mile contiguous zone.

Recommendations

- Improve cooperation at the inter-agency, interservice, and international levels to address threats to our maritime interests, including collecting and sharing key information, and developing and integrating real-time intelligence systems for tracking cargo, personnel, and commercial vessel operations.
- Improve U.S. capability to conduct surveillance, detection, identification, classification, and interdiction of maritime threats before they reach U.S. coasts and harbors.
- Acknowledge the low level of current security awareness

Strong maritime law enforcement is critical to discourage people from violating the law by providing consequences for those who do. Fisheries enforcement boardings have increased by 50% over the last four years, providing critical support to rebuilding and maintaining fish stocks threatened by overfishing. In addition, drug interdiction efforts in 1998 resulted in the seizure of more than 80,000 pounds of cocaine, keeping some 374 million “hits” with a value of \$2.9 billion off of our streets and out of our schools.

in the marine transportation system, and initiate a national education campaign to improve federal, state, and local awareness of the growing threats.

- Declare a 24-nautical-mile contiguous zone consistent with international law, as reflected in Article 33 of the Law of the Sea Convention.

For more information

- <http://www.uscg.mil/hq/g-o/gopl/lawweb2/homepage.htm>
- <http://www.whitehouse.gov/drugpolicy.gov>
- <http://www.uscg.mil/deepwater/data/threats/forword.htm>
- <http://www.navy.mil>

