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THE AUSTRALIAN NATIONAL REPRESENTATIVE SYSTEM OF MARINE PROTECTED AREAS AND THE MARINE ZONING SYSTEM: A MODEL FOR THE UNITED STATES?

Jennifer L. Schorr[†]

Abstract: Marine Protected Areas (“MPAs”) are increasingly recognized as a critical component of marine conservation. MPAs are areas of the marine ecosystem set aside for special protection and management in order to conserve biological or cultural resources. MPAs manage the use of marine resources by limiting or controlling activities within the area. Marine reserves, the most restrictive type of MPA, severely limit or forbid all extractive activities. Scientific research has demonstrated that MPAs, especially marine reserves, can have rapid and long-term benefits for biological diversity, lead to recovery of specific species, and may have a “spill over” effect that benefits adjacent unprotected areas. As a result, MPAs are rapidly becoming a widely used tool for marine conservation.

Australia has the largest number of MPAs of any country in the world. It has also developed a significant national representative system of MPAs, covering approximately seven percent of Australian waters as of 2002. Australia’s national representative system has been established through national legislation and cooperative agreements between the Commonwealth and the states. In addition, Australia has adopted a uniform zoning system so that all MPAs are designated and managed based on the same zones, to encourage consistency.

In contrast, the current system of MPAs in the United States involves federal, state, and local areas and is inadequate, disorganized, and fractured. The United States has only recently begun to develop a national representative system of MPAs. The United States should model the structure of its national representative system of MPAs on the framework now used by Australia. The United States should also adopt a uniform zoning system to be applied universally to the federal MPA system, and to those MPAs implemented under the national representative system. A standardized zoning system would ease implementation and management of MPAs, particularly those in adjacent state and federal waters, and add consistency to the currently disorganized system of management.

I. INTRODUCTION

As significant harm to the world’s ocean ecosystems becomes more evident, marine protected areas (“MPAs”) and marine reserves are receiving increasing attention from government leaders, policymakers and scientists. MPAs are areas of the marine ecosystem set aside for special protection and management in order to conserve biological or cultural resources. MPAs

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manage the use of marine resources by limiting or forbidding human activities within the area. Marine reserves, also known as “no-take” MPAs, are the most restrictive type of MPA and prohibit all extractive activity. Recent scientific research has demonstrated that MPAs, and especially marine reserves, can have rapid and long-term benefits for the marine ecosystem. Benefits include protection of biological diversity and recovery of specific species. MPAs and marine reserves also have a “spill over” effect that benefits adjacent unprotected areas. As a result, MPAs have become a popular and widely accepted ocean management tool around the world.

Currently, however, less than one percent of the world’s oceans are protected by MPA status and less than one-hundredth of one percent are designated as marine reserves.¹ Scientists, ocean and coastal managers and members of the marine conservation community increasingly recognize that new or additional protective management measures are necessary to ensure the conservation of marine resources and ecosystem services.² As a result, the designation of MPAs has accelerated rapidly in recent years.³ MPAs are fast becoming a mainstream management tool for biodiversity conservation in almost all of the world’s oceans.⁴ In particular, so called “representative” MPA systems—systems that include all different types of marine ecosystems in order to protect the functions of each respective ecosystem—are now utilized in some regions of the world. However, in most places, including the United States, there are still significant shortcomings in MPA systems.

Australia is at the forefront of developing extensive networks of MPAs and marine reserves in its oceans.⁵ In the early 1990s, Australia began establishing an extensive “national representative system” of MPAs.⁶ Australia manages all of its MPAs, both those in the national representative system and others, based on a zoning system that classifies them into different levels of protection ranging from strict protection with no consumptive use allowed (“no take” zones), to areas that permit multiple

¹ Lydia K. Bergen & Mark H. Carr, *Establishing Marine Reserves: How Can Science Best Inform Policy?*, ENV'T, Mar. 2003, at 10.

² NATIONAL RESEARCH COUNCIL, MARINE PROTECTED AREAS: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, xi (Academy Press 2001) [hereinafter MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS].

³ Bergen & Carr, *supra* note 1, at 10.

⁴ Tundi Agardy et al., *Dangerous Targets? Unresolved Issues and Ideological Clashes around Marine Protected Areas*, 13 AQUATIC CONSERVATION: MARINE & FRESHWATER ECOSYSTEMS 353, 354 (2003).

⁵ Graeme G. Kelleher, *A Global Representative System of Marine Protected Areas*, at <http://www.atse.org.au/publications/focus/focus-Kelleher.htm> (last visited Apr. 2, 2004).

⁶ Natural Heritage Trust, *Australia's Marine Protected Areas: Protecting our Coasts and Oceans*, available at <http://www.deh.gov.au/coasts/mpa/nrsmmpa/protect/pubs/protect.pdf> (last visited May 21, 2004) [hereinafter *Protecting our Coasts and Oceans*].

uses, including extractive activities such as fishing or shell collecting.⁷ This zoning system is applied uniformly across all MPAs in the Australian national representative system as well as those outside the system.

In contrast, the United States currently lacks a comprehensive national system of MPAs or marine reserves. Rather, the over 300 MPAs in the United States are designated and managed through a complex system of federal, state, local and tribal regulations.⁸ Moreover, the United States lacks an overall scheme for managing current MPAs. Even within the federal system of MPAs, there is no standardized zoning system used to designate and manage MPAs. The MPA system in the United States has recently been described as failing to provide protection for existing MPAs, and an executive order intended to strengthen and increase MPAs in the United States is having minimal regulatory effect.⁹

This Comment argues that the United States should look to Australia's national representative system of MPAs as a successful model for establishing its own national representative system of MPAs and marine reserves. It also recommends that the United States adopt a uniform zoning system for MPAs similar to that used by Australia. Part II of this Comment provides background on MPA and marine reserve uses and discusses the benefits and controversies related to each. Part III demonstrates how Australia has implemented its national representative system of MPAs, including its zoning system, by using specific policy and legal mechanisms. Part IV discusses the U.S. National Marine Sanctuaries Act and Executive Order 13158, which provides for the establishment of a national system of MPAs in the United States. Finally, Part V discusses potential policy and legal mechanisms that the United States could utilize to implement a national representative system of MPAs that utilizes an effective zoning system.

II. UNDERSTANDING MARINE PROTECTED AREAS AND MARINE RESERVES

MPAs are being utilized more frequently in several countries as a strategy to protect specific ecosystems in response to increasing threats to and degradation of marine ecosystems.¹⁰ MPAs are specific areas that

⁷ Department of the Environment and Heritage, *About Australian Marine Protected Areas*, available at <http://www.deh.gov.au/coasts/mpa/about/australian.html> (last visited May 21, 2004).

⁸ Jeff Brax, *Zoning the Oceans: Using the National Marine Sanctuaries Act and the Antiquities Act to Establish Marine Protection Areas and Marine Reserves in America*, 29 *ECOLOGY L.Q.* 71, 77 (2002).

⁹ Donald C. Baur et al., *Putting "Protection" Into Marine Protected Areas*, 26 *Vt. L. R.* (forthcoming 2004).

¹⁰ Agardy et al., *supra* note 4, at 354.

manage human activities, usually through a multi-use approach.¹¹ Marine reserves are the most protective type and limit or preclude all extractive or other human activities.¹² The scientific benefits of MPAs and marine reserves are widely recognized and include multiple ecological benefits.¹³ MPAs are frequently managed under a zoning system that designates different uses and management strategies for different areas of the MPA.

Both Australia and the United States have a relatively significant number and area of MPAs and are in the process of further developing their respective systems. Australia, however, has taken a more proactive approach to marine protection than the United States by establishing both more and larger areas of MPAs. However, there is controversy associated with the designation and management of MPAs, particularly marine reserves. This controversy has been apparent in both Australia and the United States.

A. *Threats to Marine Ecosystems Require the Use of MPA Protections*

Marine resources around the world are under increasing pressure from a variety of human activities, yet less than one percent of the world's oceans are currently protected in any manner.¹⁴ The marine environment is increasingly recognized as facing a crisis that, if not addressed, may have long-term negative impacts on the biodiversity and health of marine ecosystems.¹⁵ Marine scientists argue that current fisheries and marine management systems are "failing to sustain the productivity, biological diversity and ecosystem services of marine ecosystems."¹⁶ Commercial fishing practices such as trawling, dredging, and using underwater explosives can cause severe damage to the marine environment.¹⁷ Derelict fishing nets also can create severe marine ecosystem damage, including entrapping marine animals and breaking off coral.¹⁸ These problems are

¹¹ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 1.

¹² *Id.*

¹³ Benjamin S. Halpern, *The Impact of Marine Reserves: Do Reserves Work and Does Reserve Size Matter?* 13(1) ECOLOGICAL APPLICATIONS S117 (2003) [hereinafter *The Impact of Marine Reserves*].

¹⁴ Less than One, at www.lessthanone.org (last visited Apr. 18, 2004).

¹⁵ Major threats to the oceans include: non-point and point source pollution; invasive species; aquaculture; coastal development; overfishing; habitat alteration; bycatch from commercial fishing; and climate change. PEW OCEANS COMMISSION, AMERICA'S LIVING OCEANS: CHARTING A COURSE FOR SEA CHANGE (2003) [hereinafter AMERICA'S LIVING OCEANS].

¹⁶ Richard Kenchington et al., *The Benefits of Marine Protected Areas* 3 (2003), available at <http://www.deh.gov.au/coasts/mpa/wpc/pubs/benefits-mpas-technical.pdf> (last visited May 21, 2004).

¹⁷ Bergen & Carr, *supra* note 1, at 11.

¹⁸ For instance, due to ocean currents derelict fishing nets accumulate in the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve. Since 1996, just over 330 metric tons of marine debris

evident in the United States. A recent study by the U.S. Commission on Ocean Policy found that major changes in ocean management in the United States are “urgently needed.”¹⁹ MPAs and marine reserves can help alleviate some of these threats and impacts on the marine environment by protecting habitat and preserving or enhancing biological and ecosystem functions.²⁰

B. *Defining Marine Protected Areas and Marine Reserves*

There have been multiple attempts to develop definitions for MPAs and marine reserves.²¹ The most commonly used definition of MPA is “an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and managed through legal or other effective means.”²² In the United States, MPAs have been defined as “any area of the marine environment that has been reserved by federal, state, territorial, tribal or local laws or regulations to provide lasting protection for part or all of the natural or cultural resources therein.”²³ For example, under the federal National Marine Sanctuary Program, MPAs may be established to protect areas of high biodiversity or cultural artifacts such as shipwrecks.²⁴

MPAs provide varying levels of protection and levels of use under a variety of management schemes.²⁵ Most MPAs permit certain human recreational or commercial activity and some extractive activities such as fishing or shellfish harvesting, while at the same time prohibiting other activities such as drilling for oil or gas.²⁶ Over 1000 MPAs exist in many

(predominantly derelict fishing gear) has been collected in the Reserve. Coral Reef Ecosystem Division of National Oceanic and Atmospheric Administration Fisheries Pacific Islands Fisheries Science Center, *Synopsis of the 2003 Marine Debris Field Season* (on file with author).

¹⁹ U.S. COMMISSION ON OCEAN POLICY, PRELIMINARY REPORT OF THE U.S. COMMISSION ON OCEAN POLICY, GOVERNORS’ DRAFT (2004) [hereinafter U.S. COMMISSION].

²⁰ Bergen & Carr, *supra* note 1, at 10-11.

²¹ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 11.

²² Agardy et al., *supra* note 4, at 355. The IUCN is a non-governmental body whose mission is to “influence, encourage, and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.” *About IUCN*, available at <http://www.iucn.org/about/index.htm> (last visited May 21, 2004).

²³ Exec. Order No. 13,158, 65 Fed. Reg. 34,909 (May 31, 2000) [hereinafter Executive Order].

²⁴ National Marine Sanctuary Act, 16 U.S.C. § 1433(a)(A) (2004).

²⁵ One such management scheme involves the use of zoning plans to permit different levels of use in different areas of the MPA. For further discussion of zoning plans see *infra* Part II.D.

²⁶ See Jane Lubchenco et al., *Plugging a Hole in the Ocean: The Emerging Science of Marine Reserves*, ECOLOGICAL APPLICATIONS (forthcoming).

countries around the world,²⁷ and “virtually every coastal country” has implemented some form of MPA.²⁸

Marine reserves are a more restrictive subset of MPA.²⁹ Fully protected marine reserves are “areas of the ocean completely protected from all extractive activities” and explicitly prohibit the removal or disturbance of all living or non-living marine resources, except as required for monitoring or research to evaluate reserve effectiveness.³⁰ Marine reserves are established either as an isolated area of the environment or more commonly as a distinct zone within a larger MPA.³¹ Presently, more than twenty countries have established marine reserves of some kind.³²

C. *The Benefits of MPAs Are Broad and Widely Recognized*

Experts recognize MPAs and marine reserves as effective tools for protecting and conserving valuable ocean resources.³³ Potential benefits of marine reserves include enhancing reproductive potential of marine species, maintaining species diversity, preserving habitat, preserving ecosystem function, and supporting fisheries.³⁴ Designation of MPAs may also motivate coastal communities to increase conservation efforts by implementing pollution controls and stricter land use policies.³⁵

Marine reserves are recognized as providing greater benefits than multi-use MPAs.³⁶ Although some criticisms have been directed against both the quantum and quality of data related to the effectiveness of marine reserves, recent studies have led to growing support of reserves by the scientific community.³⁷ In 2001, 161 marine scientists signed the Scientific Consensus Statement on Marine Reserves (the “Statement”).³⁸ Among

²⁷ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 11.

²⁸ Agardy et al., *supra* note 4, at 353.

²⁹ Lubchenco et al., *supra* note 26, at 64.

³⁰ *Id.* Marine reserves are also referred to as “no-take areas,” “fully-protected marine reserves,” or “ecological reserves.” *Id.*

³¹ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 1.

³² These range in size from less than one square mile to hundreds of square miles. Bergen & Carr, *supra* note 1, at 10.

³³ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 2.

³⁴ Bergen & Carr, *supra* note 1, at 10-11.

³⁵ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 14.

³⁶ Lubchenco et al., *supra* note 26, at 65.

³⁷ *The Science of Marine Reserves: How Much of it is Science?*, 5 MPA NEWS 4, Dec. 2003/Jan. 2004; Lubchenco et al., *supra* note 26, at 65.

³⁸ The Statement was written and released at a Symposium entitled “The Science of Marine Reserves” at the 2001 American Association for the Advancement of Science. It represents a rare occasion where a large number of scientists supported a general conclusion (and promoted the use of a specific resource management tool) based on new information. Bergen & Carr, *supra* note 1, at 13. The full text of

others, the Statement drew the following conclusions based on the review of the evidence surrounding the effectiveness of marine reserves: (1) reserve status results in long-lasting and often rapid increases in the abundance, diversity, and productivity of marine organisms; (2) such changes are due to decreased mortality, less habitat destruction and to indirect ecosystem effects; (3) reserves decrease the probability of extinction for marine species present within them; (4) even small reserves have these positive effects, but larger reserve size results in increased benefits; and (5) full marine reserve status—as opposed to multi-use MPA status—is critical to maximize the full range of benefits.³⁹

Other recent studies have also found that marine reserves are effective in conserving habitat and supporting the recovery of overexploited species.⁴⁰ Marine scientists now acknowledge that marine reserves have a significant positive impact on marine ecosystems and that they often generate those benefits quickly.⁴¹ For example, a review of 112 independent measurements of 80 different marine reserves found that they contained higher average values of population density, biomass, average organism size, and species diversity within as early as one year after marine reserve status designation.⁴²

Marine reserves benefit not only the ecosystem within the reserve, but also generate a “spillover” effect into adjacent areas.⁴³ Studies show that the size and abundance of exploited species increases in areas adjacent to marine reserves, and mounting evidence demonstrates that reserves replenish larger regional populations as well.⁴⁴ Several studies have also shown an increase in catch-per-unit-effort in fishing grounds adjacent to MPAs.⁴⁵

Networks of MPAs and marine reserves are viewed as more effective than single or isolated protected areas.⁴⁶ Because a single MPA is frequently

the statement and list of signatories is available at <http://www.nceas.ucsb.edu/Consensus> (last visited May 21, 2004).

³⁹ Lubchenco et al., *supra* note 26, at 65.

⁴⁰ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 175. A recent review of studies found that the density, biomass, size of organisms, and diversity of vertebrate organisms were all significantly higher inside reserves than outside. Halpern, *The Impact of Marine Reserves*, *supra* note 13, at 361.

⁴¹ Janet Raloff, *Underwater Refuge*, 159 SCIENCE NEWS, Apr. 28, 2001, 2001 WL 8796060.

⁴² Benjamin S. Halpern & Robert R. Warner, *Marine Reserves Have Rapid and Lasting Effects*, 5 ECOLOGY LETTERS 361 (2002).

⁴³ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 84.

⁴⁴ Replenishment occurs both through spillover of adults or juveniles out of reserves, as well as through the export of larvae or eggs that drift from the reserve to adjacent areas. STEPHEN R. PALUMBI, PEW OCEANS COMMISSION, MARINE RESERVES: A TOOL FOR ECOSYSTEM MANAGEMENT AND CONSERVATION 27 (2002).

⁴⁵ *Id.* at 25-26.

⁴⁶ *Id.* at 29.

insufficient to meet the numerous needs of a particular region, several sites may be necessary to complement and support each other based on their connectivity.⁴⁷ Networks can provide an overall increase of egg and larval production within a region.⁴⁸ Networks are more resilient to human impact than isolated MPAs or reserves, and offer the same type of environmental protection at the regional level that individual MPAs offer on a local level.⁴⁹ Networks also spread the risk of habitat loss caused by disturbances such as oil spills by creating greater numbers of marine reserves.⁵⁰ Individual MPAs and networks can be managed effectively through the use of zoning plans to manage use of the protected area(s).

D. Zoning of MPAs

Zoning plans are common in larger MPAs to accommodate different uses in different areas of the MPA. For example, an MPA may provide a core reserve where only non-consumptive uses are permitted, surrounded by a multiple use zone at the edges of the MPA where many activities are permitted. Zoning plans are necessary for all but the smallest MPAs because they help avoid unnecessary use restrictions and facilitate cooperation between managers and users.⁵¹ The primary objectives of zoning plans are normally to separate conflicting human uses and to provide protection for critical or representative habitats, ecosystems, and ecological processes.⁵² Zoning is also used to protect the natural and cultural aspects of the MPA, while permitting a variety of reasonable human uses.⁵³ Zoning also functions to preserve certain areas of the MPA in their natural state except for research or educational purposes.⁵⁴ Finally, zoning reserves suitable areas for certain human uses while minimizing the impact of those uses on the marine ecosystem.⁵⁵

Zones within an MPA can accommodate broader use and management of an ecosystem and can ease management and enforcement of multiple-use MPAs. If consistent zones are applied to adjacent waters under the control

⁴⁷ MPAS: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 5.

⁴⁸ Palumbi, *supra* note 44, at 29.

⁴⁹ *About the National Representative System of Marine Protected Areas*, available at <http://www.deh.gov.au/coasts/mpa/nrsmipa/about.html> (last visited May 21, 2004).

⁵⁰ Palumbi, *supra* note 44, at 29.

⁵¹ MPAS: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 118.

⁵² Jon C. Day, *Zoning – Lessons from the Great Barrier Reef Marine Park*, 45 OCEAN & COASTAL MGMT. 139, 141 (2002).

⁵³ MPAS: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 118.

⁵⁴ *Id.*

⁵⁵ *Id.*

of different jurisdictions, it is easier for the public to understand the system and enforcement is typically more efficient because there is less of a need for enforcement officers to prove exact jurisdictional boundaries.⁵⁶ In addition, clear zoning provisions provide consistent expectations about what activities are permitted within each zone.⁵⁷

It is common to have an area or areas of marine reserves within a larger multi-use MPA.⁵⁸ Fully protected marine reserves within a larger MPA provide a high level of protection to critical or core areas such as sites important to threatened species or sensitive habitats.⁵⁹ Zoning plans can establish reserves in these areas, while also separating incompatible activities and providing defined management areas to help protect ecosystem functions.⁶⁰

E. Controversy and Challenges Related to MPAs and Marine Reserves

Although the benefits of MPAs and marine reserves are widely recognized, implementation is often highly contested. The historical open access to the sea and marine resources frequently gives rise to viewing MPAs as impermissibly “fencing the sea.”⁶¹ Competing marine ecosystem users such as commercial and recreational fishers, divers, farmers, and developers frequently contest the designation of MPAs or use restrictions within existing MPAs.⁶² Stakeholders often resent losing access to customary fishing grounds, and may distrust managers and scientists or perceive inequities in the distribution of privileges in a MPA.⁶³ Due to the restrictive nature of marine reserves, they are one of the most hotly debated ocean management tools among managers, scientists, and stakeholders.⁶⁴

There is also concern over polarization of views related to different MPA management approaches. A recent study states that this has caused an ideological divide among scientists, policymakers, and managers and may limit the ability of MPAs to achieve their full potential given the divisive nature of these differences of opinion.⁶⁵ Implementation of large areas of MPAs also faces management challenges related to coordination between

⁵⁶ Day, *supra* note 52, at 153.

⁵⁷ *Id.* at 144.

⁵⁸ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 118-19.

⁵⁹ *Id.* at 72.

⁶⁰ *Id.* at 119.

⁶¹ *Id.* at 1.

⁶² *Id.* at 14.

⁶³ *Id.*

⁶⁴ Bergen & Carr, *supra* note 1, at 10.

⁶⁵ *Id.*

different agencies and authorities that have responsibility for different aspects of coastal and ocean management.

Controversy has been apparent during implementation of MPAs or marine reserves in the United States and Australia. For example, during the designation process for the Florida Keys National Marine Sanctuary, viewed as the most contentious of U.S. sanctuaries, local residents who opposed the designation hung a sanctuary manager in effigy and placed "Say no to NOAA" bumper stickers on their vehicles.⁶⁶

Controversy related to implementation and zoning of MPAs and establishment of marine reserves is also apparent in Australia. During the recent rezoning of the Great Barrier Reef Marine Park, over 31,000 public comments were made on the plan and the fight to increase no-take areas was labeled a "huge battle" by conservationists.⁶⁷ The Australian government recently released the Southeast Regional Marine Plan, which sets out a management framework for two million square kilometers of ocean.⁶⁸ So far, however, none of the states affected by the plan have signed on to it.⁶⁹ Despite the difficulties in both countries, Australia has managed to implement both a larger number and area of MPAs and marine reserves than the United States.⁷⁰

III. THE LEGAL, POLICY, AND MANAGEMENT FRAMEWORKS OF AUSTRALIAN MPAS

Australia recognizes the importance of MPAs in marine conservation and management, and is a world leader in the development of a national representative system of MPAs. In Australia, MPAs are designated pursuant to specific legal authority and are supported by specific policy and management frameworks that enable effective management of protected areas. Australia's Offshore Constitutional Settlement provides the framework for the division of responsibility for ocean management between the Commonwealth and State governments.⁷¹ MPAs in Australia may be

⁶⁶ Robin Kundis Craig, *Taking Steps Toward Marine Wilderness Protection? Fishing and Coral Reef Marine Reserves in Florida and Hawaii*, 34 MCGEORGE L. REV. 155, 229 (1999). "NOAA" is the National Oceanic and Atmospheric Administration, the agency responsible for the National Marine Sanctuaries Program. For an extensive overview of problems associated with designation of national marine sanctuaries see Brax, *supra* note 8.

⁶⁷ Phil Dickie, *Great Barrier Breakthrough*, THE AUSTRALIAN, Dec. 4, 2003.

⁶⁸ Andrew Darby, *Just a Drop in the Ocean*, THE AGE (Melbourne), July 19, 2003, at 4.

⁶⁹ *Id.*

⁷⁰ Kelleher, *supra* note 5.

⁷¹ Donald R. Rothwell, *The Legal Framework for Ocean and Coastal Management in Australia*, 33 OCEAN & COASTAL MGMT. 41, 51 (1996).

designated at the Commonwealth, State, or territorial level and are managed by the government that designates the MPA.⁷² In recognition of the need to protect all types of ecosystems, in the early 1990s Australia implemented a national system of representative MPAs. The national representative system has rapidly grown to encompass a large number and area of MPAs. Australia also utilizes a standardized zoning framework that applies to all Australian MPAs, regardless of the government that makes the initial MPA designation.

A. Introduction to Australian MPAs

Australia is widely recognized as a world leader in the development and management of the marine environment, including an extensive system of MPAs.⁷³ Over the past decade, Australia has designated more than seventy-eight new MPAs⁷⁴ and now has more MPAs than any other country in the world.⁷⁵ Australia also has the world's largest multiple-use MPA, the Great Barrier Reef Marine Park, as well as the largest fully protected marine reserve in the world, the Heard Island and McDonald Islands Marine Reserves.⁷⁶ Australia is also in the process of designating large areas of new marine reserves.⁷⁷

Australia's marine environment has an enormous impact on the economy, and the country has made protection of the marine environment a high priority for both economic and biological reasons. Australian tourism is worth AUD\$ 4.2 billion and employs 47,000 people, while commercial fishing employs 641 people and is worth AUD\$ 123 million.⁷⁸ Australia recognizes that there is a "special responsibility for the conservation and management of its marine and coastal environments and their resources" and

⁷² *Australian Marine Protected Areas*, available at <http://www.deh.gov.au/coasts/mpa/about/australian.html> (last visited May 21, 2004).

⁷³ Kelleher, *supra* note 5.

⁷⁴ *Id.*; *Protecting our Coasts and Oceans*, *supra* note 6.

⁷⁵ Kelleher, *supra* note 5.

⁷⁶ The Great Barrier Reef Marine Park was established separately from other MPAs and reserves through specific legislation. *Terrestrial and Marine Protected Areas in Australia (1997)*, available at <http://www.deh.gov.au/parks/nrs/capad/1997/paaust/legis.html> (last visited May 21, 2004). The Heard Island and McDonald Islands Marine Reserve was established in 2002 and protects 6.5 million hectares in remote Sub-Antarctic waters. Commercial fishing, mineral and petroleum exploration, and most human activities are banned in the reserve. *Australia Creates the World's Biggest Marine Reserve*, available at http://www.iucn.org/themes/wcpa/newsbulletins/news_dec02.html#marine (last visited May 21, 2004).

⁷⁷ For example, the recent rezoning of the Great Barrier Reef Marine Park will increase the area of no-take full reserves from five percent to twenty-five to thirty percent of the park. *Getting into the Zone*, TOWNSVILLE BULLETIN/TOWNSVILLE SUN (Austl.), Mar. 22, 2003, at 55.

⁷⁸ Dickie, *supra* note 67.

has enacted legislation, promulgated regulations, and established policy to protect the marine environment using MPAs and marine reserves.⁷⁹ Due to the high priority placed on conservation and management of the marine environment, combined with similarities between the systems of government, Australia provides an excellent example of how the United States might attempt to improve and develop its MPA system. The MPA system in Australia benefits from strong support both within different levels of government and from the general public.⁸⁰

B. Legal Framework for Designation and Management of Australian MPAs

Under the jurisdictional division between the Commonwealth and the states, MPAs may be designated at the Commonwealth, State or Territory level and are managed by the government that designates the MPA, with cross-jurisdictional coordination where appropriate.⁸¹ Australia has adopted the International Conservation Union zoning approach for use in its national representative system of MPAs, meaning that all MPAs are designated and managed under the same plan.⁸² This approach provides a consistent framework for the national system and a useful model for the ways that a zoning plan can be utilized in development of a national representative system.

1. The Legal Framework for Australia's Ocean and Coastal Management: The Offshore Constitutional Settlement

Due to Australia's federal system of government, it divides responsibility for ocean and coastal management among the Commonwealth, State, and Territorial governments.⁸³ Because the Australian Constitution does not address whether the States or the Commonwealth have exclusive jurisdiction over offshore waters,⁸⁴ the allocation of authority to each of these respective governments caused significant constitutional debate in

⁷⁹ *About Australian Marine Protected Areas*, *supra* note 7.

⁸⁰ *Getting in the Zone*, *supra* note 77.

⁸¹ *Id.*

⁸² *About Australian Marine Protected Areas*, *supra* note 7.

⁸³ Rothwell, *supra* note 71, at 47. For an overview of environmental laws in Australia and the United States see Kenneth M. Murchison, *Environmental Law in Australia and the United States: A Comparative Overview*, 22 B.C. ENVTL. AFF. L. REV. 503 (1995).

⁸⁴ Rothwell, *supra* note 71, at 48.

Australia beginning at the time of federation.⁸⁵ In an attempt to resolve some of the difficulties associated with management of the offshore environment, the Commonwealth, states, and Northern Territory agreed to the Offshore Constitutional Settlement ("OCS") in 1979.⁸⁶

Under the OCS, each state passed legislation requesting the Parliament of the Commonwealth to enact laws related to the management of coastal and offshore areas.⁸⁷ Two central acts form the basis of the OCS, the Coastal Waters Act 1980 ("State Powers") and the Coastal Waters Act 1980 ("State Title").⁸⁸ The OCS provides the states and Northern Territory with certain guaranteed sovereignty and jurisdiction over their respective offshore areas and ensures that a cooperative federal approach will be utilized in the management of offshore areas.⁸⁹ In general, state and Northern Territory governments have primary responsibility for marine environments up to three nautical miles out from the territorial sea baseline and the Commonwealth has jurisdiction from the state or territory limit to the edge of the exclusive economic zone 200 miles out to sea.⁹⁰ Under this framework MPAs can be designated by the government that has responsibility for the territory where the MPA is located.

2. *The Legal Framework for Designation and Management of Commonwealth and State MPAs*

MPAs in Australia can be established at either the Commonwealth level or at the state or territory level. In general, the Commonwealth designates and manages MPAs in Commonwealth waters, while the state or Northern Territory designates and manages MPAs in its own waters.⁹¹ All governments, however, coordinate their MPA-related actions.⁹² There are several examples of Australian MPAs where state or territory and Commonwealth areas are adjacent to each other and form one MPA. For example, the Great Australian Bight Marine Park includes state and Commonwealth waters and is managed concurrently by both jurisdictions.⁹³

⁸⁵ *Id.* at 50.

⁸⁶ *Id.* at 51.

⁸⁷ *Id.*

⁸⁸ Coastal Waters (State Powers) Act, 1980 (Austl.); Coastal Waters (State Title) Act, 1980 (Austl.).

⁸⁹ The Australian Constitution created a Commonwealth comprised of six States, and the Northern Territory is the principle Territory with an interest in coastal and ocean management. Rothwell, *supra* note 71, at 42 & n.4.

⁹⁰ *Protecting our Coasts and Oceans*, *supra* note 6.

⁹¹ *Australian Marine Protected Areas*, *supra* note 72.

⁹² *Id.*

⁹³ *Id.*

Commonwealth MPAs are established and managed under the Environment Protection and Biodiversity Conservation Act 1999 (“EPBC Act”).⁹⁴ Under the EPBC Act, the Governor-General⁹⁵ can declare a Commonwealth marine reserve in an area of sea that is in a “[c]ommonwealth marine area” described above, or outside Australia where Australia has international obligations to protect the area under an agreement with one or more countries.⁹⁶ Prior to a decision regarding designation as a Commonwealth MPA, the following steps are required: (1) scientific assessment of the area; (2) consultation of all interested stakeholders; (3) socio-economic assessment of the impacts of declaring the MPA; and (4) an identification of the conservation objectives to be achieved by the MPA.⁹⁷ Following these processes, the Minister for the Environment and Heritage determines whether to proceed to the statutory declaration process under the EPBC Act.⁹⁸ Once the MPA has been designated, the Director of National Parks is responsible for managing all Commonwealth MPAs under the EPBC Act.⁹⁹

MPAs or reserves established at the state or territory level are implemented using the applicable legislation and process for each state or territory, which varies by jurisdiction. For instance, the Northern Territory’s Territory Parks and Wildlife Conservation Act 1980¹⁰⁰ allows for the declaration of parks, reserves, sanctuaries, and protected areas, including MPAs.¹⁰¹ The Administrator of the Northern Territory may designate such an area upon receiving a report from the Parks and Wildlife Commission.¹⁰² Under the Northern Territory’s Fisheries Act 1998, the Northern Territory Fisheries Division of the Department of Primary Industries and Fisheries is

⁹⁴ The Act came into operation on July 16, 2000. Prior to the EPBC Act, Commonwealth MPAs were established and managed under the National Parks and Wildlife Conservation Act of 1975 (Austl.). Commonwealth reserves that were established under the original Act continue as Commonwealth MPAs under the EPBC Act. *Commonwealth Marine Protected Areas Program*, available at <http://www.deh.gov.au/coasts/mpa/Commonwealth/program/pubs/program.pdf> (last visited May 21, 2004).

⁹⁵ The executive power of the Commonwealth is vested in the Queen—the Governor-General exercises this power as the Queen’s representative. When exercising the executive power of the Commonwealth, the Governor-General acts on the advice of Ministers who are responsible to the Parliament. *Governor-General’s Role*, available at http://www.gg.gov.au/html/fset_role.html (last visited May 21, 2004).

⁹⁶ *Commonwealth Marine Protected Areas Program*, *supra* note 94, at 9.

⁹⁷ *Id.* at 8.

⁹⁸ For an overview of the declaration process *see id.*

⁹⁹ Environment Protection and Biodiversity Conservation Act 1999, ch. 6, pt. 19 (Austl.).

¹⁰⁰ The Parks and Wildlife Commission Act, 1995 (Austl.) replaced the previous Act and established that parks or reserves are held by the Conservation Land Corporation. *Terrestrial and Marine Protected Areas in Australia (1997)*, *supra* note 76.

¹⁰¹ *Id.*

¹⁰² *Id.*

responsible for managing and conserving fish and aquatic life resources.¹⁰³ This includes responsibility for the declaration of managed areas for the protection or use of any fish or aquatic life.¹⁰⁴ If a park or reserve is declared jointly under the Territory Parks and Wildlife Conservation Act and the Fisheries Act of 1998, it is managed jointly under both sets of legislation.¹⁰⁵ Two Northern Territory cooperative management plans are implemented to cover both areas of responsibility, with the Fisheries Act managing fish and aquatic life and the Territory Parks and Wildlife Conservation Act regulating conservation, boating, tourism, and commercial development other than fishing.¹⁰⁶

The federal system of government in Australia divides jurisdiction for coastal management between the Commonwealth and the states, in a manner similar to the system in the United States. Although each level of government may establish MPAs in its own waters, there is coordination of MPA activities between each level. This permits designation of a large number of MPAs while ensuring that management is efficient and effective across jurisdictions.

C. *Australia's Comprehensive Management Approach: The National Representative System of Marine Protected Areas and the Intergovernmental Agreement on the Environment*

In recognition of a pressing need to protect its marine resources, Australia has taken the lead in establishing a national representative system of MPAs. Australia's national representative system encompasses Commonwealth, state, and Northern Territory MPAs, coordinates their management,¹⁰⁷ and has quickly developed to protect a large area of Australia's marine environment.¹⁰⁸ The national representative system is critical to protecting all types of marine ecosystems in Australia and ensuring that an adequate system of MPAs and marine reserves exists to recognize the benefits. The national representative system established by Australia provides an excellent model for the effective, relatively rapid development of such a system.

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* This publication includes details about the applicable legislation for each State or Territory.

¹⁰⁸ *About the National Representative System of Marine Protected Areas, supra* note 49.

¹⁰⁸ *Id.*

1. *Australia Recognizes the Need for a National Representative System of MPAs*

In the early 1990s Australian governments recognized a need to protect representative examples of all types of marine ecosystems and habitats via a national representative system.¹⁰⁹ Australia acknowledged that proactive steps were necessary to protect marine areas representative of all Australia's major ecological regions and the biodiversity contained in each.¹¹⁰ In 1992 the Commonwealth established the Taskforce on Marine Protected Areas to provide a mechanism for the Commonwealth, states, and Northern Territory to collaborate on developing the National Representative System of Marine Protected Areas ("NRSMPA").¹¹¹ The NRSMPA is a comprehensive system of Australian MPAs that encompasses a full range of marine ecosystems.¹¹² In essence, the NRSMPA serves as a network designed to protect the regional marine environment in the same manner that individual MPAs protect the local marine environment.¹¹³ Protection of the full range of ecosystems is recognized as one of the most effective means for protecting biodiversity, while still allowing sustainable use of marine resources.¹¹⁴

The NRSMPA's primary goals are to "contribute to the long-term ecological viability of marine and estuarine systems, to maintain ecological processes and systems, and to protect Australia's biological diversity at all levels."¹¹⁵ Secondary goals include providing a formal management framework for a wide variety of human activities, and providing for the recreational, aesthetic, and cultural needs of indigenous and non-indigenous people.¹¹⁶ Using the network approach, Australia is working to ensure the existence of adequate MPAs in the NRSMPA to protect the viability of its marine environment. The NRSMPA allows the different forms of managed marine areas to be considered together as a whole. This means that contributions to biodiversity conservation can be recognized and that there is potential for performance indicators to be developed and applied across the

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Protecting Our Coasts and Oceans, supra note 6.*

¹¹² *About the National Representative System of Marine Protected Areas, supra note 49.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *Id.*

range of areas.¹¹⁷ The network approach eases the evaluation of whether the marine resources of a region are adequately protected and whether the protections put in place by the NRSMPA are effective across the region.

2. *Implementation and Current Status of the NRSMPA*

In order to establish an operational framework for the NRSMPA, the Commonwealth entered into the Intergovernmental Agreement on the Environment (the "Agreement") with the states and the Northern Territory governments in 1992.¹¹⁸ The Agreement outlines a commitment to develop a strategic planning approach to protecting and managing the marine environment and establishes the development of the NRSMPA as a key component of this commitment.¹¹⁹ Like the Australian MPAs that are not part of the NRSMPA, the declaration of MPAs in the NRSMPA system can be implemented under Commonwealth, state, or Northern Territory legislation in seas within each government's jurisdiction.¹²⁰ The responsible minister(s) in each jurisdiction decide whether to designate an MPA as part of the NRSMPA.¹²¹ The NRSMPA supports national commitments to implement MPAs and reserves via national actions and strategies such as the National Strategy for Ecologically Sustainable Development¹²² and the National Strategy for the Conservation of Australia's Biological Diversity.¹²³ These strategies establish Australia's commitment to sustainable development and the protection of the country's terrestrial and marine biological diversity, and have been adopted as national policy.¹²⁴ The primary goals of the latter strategy are to protect biological diversity and maintain ecological processes and systems through the establishment of a

¹¹⁷ AUSTRALIAN & NEW ZEALAND ENVIRONMENT & CONSERVATION COUNCIL TASK FORCE ON MARINE PROTECTED AREAS, GUIDELINES FOR ESTABLISHING THE NATIONAL REPRESENTATIVE SYSTEM OF MARINE PROTECTED AREAS (1998) [hereinafter GUIDELINES].

¹¹⁸ Intergovernmental Agreement on the Environment, 1992 (Austl.).

¹¹⁹ *About the National Representative System of Marine Protected Areas*, *supra* note 49.

¹²⁰ *See supra* Part III.B.1.

¹²¹ AUSTRALIAN AND NEW ZEALAND ENVIRONMENT AND CONSERVATION COUNCIL TASK FORCE ON MARINE PROTECTED AREAS, STRATEGIC PLAN OF ACTION FOR THE NATIONAL REPRESENTATIVE SYSTEM OF MARINE PROTECTED AREAS: A GUIDE FOR ACTION BY AUSTRALIAN GOVERNMENTS 13 (1999) [hereinafter STRATEGIC PLAN].

¹²² ECOLOGICALLY SUSTAINABLE DEVELOPMENT STEERING COMMITTEE, NATIONAL STRATEGY FOR ECOLOGICALLY SUSTAINABLE DEVELOPMENT (1992).

¹²³ DEPARTMENT OF THE ENVIRONMENT, SPORT AND TERRITORIES, NATIONAL STRATEGY FOR THE CONSERVATION OF AUSTRALIA'S BIOLOGICAL DIVERSITY (1996). This Strategy was ratified by the Commonwealth and all state and territory governments. *Id.*

¹²⁴ *Principles for Ecologically Sustainable Ocean Use*, available at http://www.oceans.gov.au/content_policy_v1/page_007.jsp (last visited May 21, 2004).

“comprehensive, representative and adequate system of ecologically viable protected areas.”¹²⁵

Australia has designated an extensive area of MPAs under the NRSMPA. As of 2002, the NRSMPA covered approximately seven percent of Australia’s marine jurisdiction, or 64,600,000 hectares.¹²⁶ This area includes 192 marine reserves.¹²⁷ There are also MPAs and reserves in Australia that are not included in the NRSMPA, including indigenous protected areas and areas established to protect fish habitat.¹²⁸ Protected areas within the NRSMPA, combined with numerous MPAs that were designated separately from the NRSMPA, are all designated and managed according to a standardized zoning system.

D. *Classification of Australian MPAs: The International Conservation Union Zoning Approach*

In order to provide consistent management between and among different MPAs, Australia has adopted the zoning classification system developed by the World Conservation Union (“IUCN”).¹²⁹ The IUCN system was adopted by Australia for management of MPAs through legislation in the Environment Protection and Biodiversity Conservation Act.¹³⁰ The IUCN system is based on the protected area management categories¹³¹ developed by the Commonwealth to form a basis for preparing a national protected area system.¹³² Protected areas are established to meet objectives consistent with management goals, and then labeled with an IUCN category according to those management goals.¹³³ Categories are based on the primary management objective for the protected area.¹³⁴ The system is designed for use in all countries and provides a mechanism for

¹²⁵ *About the National Representative System of Marine Protected Areas*, *supra* note 49.

¹²⁶ The Australian Antarctic Territory is excluded from this area. *Id.* One hectare equals .004 square miles.

¹²⁷ *Id.*

¹²⁸ GUIDELINES, *supra* note 117, at 4.

¹²⁹ *About Australian Marine Protected Areas*, *supra* note 7.

¹³⁰ Environment Protection and Biodiversity Conservation Act, 1999 (Austl).

¹³¹ See IUCN COMMISSION ON NATIONAL PARKS AND PROTECTED AREAS, GUIDELINES FOR PROTECTED AREA MANAGEMENT CATEGORIES 8 (1994) [hereinafter IUCN COMMISSION].

¹³² *About Australian Marine Protected Areas*, *supra* note 7.

¹³³ *Id.*

¹³⁴ IUCN COMMISSION, *supra* note 131, at 7.

international comparison of protected areas, although national names for protected areas in the same category may vary from country to country.¹³⁵

There are six IUCN categories, ranging from completely protected to multiple use.¹³⁶ Each category is based on specific management objectives and selection guidelines. For instance, category "Ia" is designated as a strict nature reserve, a protected area managed mainly for preservation or science.¹³⁷ Category IV is designated as Habitat/Species Management Area, a protected area managed mainly for conservation through management intervention.¹³⁸

Based on the primary management objective of the MPA, Australia assigns the MPA to one of the six categories. Although an MPA may contain zones that have objectives other than the primary objective, at least three-fourths of the MPA must be managed for the primary objective, and management of the remaining area may not conflict with the primary objective.¹³⁹ For instance, an MPA designated as a Category IV may contain one or more Category Ia Strict Nature Reserves, which prohibit any taking of marine resources, as well as the Category IV Habitat/Species Management Area, which permits a variety of human activities including extractive uses. In order to be included in the NRSMPA, the MPA must be able to be classified into one or more of the six IUCN categories.¹⁴⁰ The relevant Commonwealth, state, or territory agency determines the IUCN category or categories for MPAs in their jurisdiction.¹⁴¹ The Commonwealth plays a coordinating role to ensure consistent interpretation and application of the IUCN categories.¹⁴²

Australia places a high priority on MPAs and the development of the NRSMPA in Australia has been a relatively rapid process with effective coordination between different levels of government. Adoption of the IUCN categories provides consistency in the designation and management of MPAs, and assists with evaluation of the adequacy and effectiveness of the NRSMPA. The system used by Australia for the NRSMPA stands in contrast to the current status of the MPA system in the United States.

¹³⁵ MPAs: TOOLS FOR SUSTAINING ECOSYSTEMS, *supra* note 2, at 238. The numbering system for the IUCN system is different than that applied by the EPBC Act to MPAs in Australia but the categories are essentially the same as the IUCN categories. *About Australian Marine Protected Areas*, *supra* note 7.

¹³⁶ IUCN COMMISSION, *supra* note 131, at 7.

¹³⁷ *Id.* at 17.

¹³⁸ *Id.* at 21.

¹³⁹ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 238.

¹⁴⁰ GUIDELINES, *supra* note 117, at 5.

¹⁴¹ *Id.*

¹⁴² *Id.*

IV. U.S. MARINE PROTECTED AREAS AND THEIR FRAGMENTED LEGAL FRAMEWORK

Unlike the system in Australia, in the United States there is currently no single framework that provides consistency in designating and managing MPAs. U.S. MPAs are designated through a variety of federal, state and local methods.¹⁴³ MPAs are established, managed, and zoned according to the specific MPA site and the uses of the MPA, as opposed to a standardized framework that provides consistency. Although MPAs in federal waters are designated under the National Marine Sanctuaries Act, the Act is not appropriate to facilitate the development of a national representative system. Executive Order 13158 established the framework for the United States to develop a national representative system of MPAs, but has significant shortcomings that may hinder the development and implementation of a consistent system of MPAs in the United States.

A. *MPAs in the United States*

The current management of MPAs in the United States has been described as “decentralized, disjointed, and dependent upon the proper application of dozens of different federal laws by a variety of separate agencies.”¹⁴⁴ The majority of U.S. MPAs have been selected and designed without scientific justification and with very little consideration of a network-based approach.¹⁴⁵ MPAs in the United States are implemented by federal, state, and local governments to protect marine habitats and cultural or natural resources from overexploitation, and to conserve biological diversity, habitats and species.¹⁴⁶ Currently U.S. MPAs employ no standardized zoning, even within the federal National Marine Sanctuaries System.¹⁴⁷ As a result, different MPAs are managed on an ad hoc basis with

¹⁴³ In the United States, as in Australia, states generally claim title to the submerged lands within three nautical miles of the coast. Edward A. Fitzgerald, *The Tidelands Controversy Revisited*, 19 ENVTL. L. 209, 212 (1988). See The Submerged Lands Act, 43 U.S.C. §§ 1301-1315 (1982 & Supp. IV 1986).

¹⁴⁴ Brax, *supra* note 8, at 77.

¹⁴⁵ Marine Conservation Biology Institute, *Safeguarding America's Seas: Establishing a National System of Marine Protected Areas*, available at <http://www.mcibi.org/marineprotected/safeguardingseas.pdf> (last visited May 21, 2004).

¹⁴⁶ *The National Marine Protected Areas Initiative*, available at http://mpa.gov/information_tools/archives/initiative.html (last visited May 21, 2004).

¹⁴⁷ Telephone Interview with Sean Hastings, Policy Program Specialist, Channel Islands National Marine Sanctuary (Feb. 24, 2004).

no consistency among MPAs.¹⁴⁸ Finally, there are currently very few fully protected marine reserves in the United States.¹⁴⁹

Marine reserves and MPAs in the United States also have a significant economic impact. For instance, in 1990 approximately two million tourists visited the Florida Keys, the site of the Florida Keys National Marine Sanctuary, with a direct spending impact of close to US\$ 800 million.¹⁵⁰ One study indicated that the asset value of the Keys for water-related recreation is approximately US\$ 22 billion in 1990 dollars.¹⁵¹ In general, coastal tourism and recreation spending in the United States directly supports more than 1.5 million jobs.¹⁵²

B. *The National Marine Sanctuaries Act*

The National Marine Sanctuaries Act (“NMSA”)¹⁵³ is the most important law used to establish MPAs in the United States, and provides a framework for establishing a federal system of MPAs.¹⁵⁴ The NMSA permits the U.S. Secretary of Commerce to designate federal marine sanctuaries in areas of special national significance for the purpose of preserving or restoring marine areas for their “conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or aesthetic qualities.”¹⁵⁵ Thirteen national marine sanctuaries have been established under the NMSA.¹⁵⁶ National marine sanctuaries encompass close to 18,000 square miles and are managed to accommodate multiple uses.¹⁵⁷

Although generally managed for multiple use to the extent compatible with resource protection, recent efforts have been made to incorporate

¹⁴⁸ Baur, *supra* note 9.

¹⁴⁹ Palumbi, *supra* note 44, at 4.

¹⁵⁰ FLORIDA KEYS NATIONAL MARINE SANCTUARY, FLORIDA KEYS MARINE PROTECTED AREA MANAGEMENT PLAN Vol. 2, 179 (1996).

¹⁵¹ *Id.*

¹⁵² U.S. Commission, *supra* note 19 at xi.

¹⁵³ National Marine Sanctuaries Act, 16 U.S.C. §§ 1431-1445 (2000).

¹⁵⁴ MPAs in federal waters in the United States are not limited to those established by the NMSA; other federal legislation can be utilized to create MPAs. A discussion of such laws is beyond the scope of this paper. For a complete overview of such legislation see Baur, *supra* note 9.

¹⁵⁵ 16 U.S.C. § 1431.

¹⁵⁶ *Welcome to the Marine Sanctuaries*, at <http://www.sanctuaries.nos.noaa.gov/oms/oms.html> (last visited May 21, 2004). The National Oceanic and Atmospheric Administration is the government agency responsible for the National Marine Sanctuary Program.

¹⁵⁷ *Id.* There are other legislative acts that may be used to protect marine ecosystems, but they are based on species management and not ecosystem management, and their value is limited for establishing marine reserves. See Brax, *supra* note 8 (discussing how the Antiquities Act may be useful in designating marine reserves).

marine reserves into existing national marine sanctuaries.¹⁵⁸ The NMSA has served as the platform for considering the creation of new marine reserves in both the Florida Keys and the Channel Islands National Marine Sanctuaries, although the success of implementation of reserves has been limited and designation of reserves has caused intense controversy.¹⁵⁹ The NMSA, however, makes no reference of no-take or marine reserves and does not establish a process for creating them. Neither the legislative history nor statutory language refers to marine reserves. Instead the language of the NMSA focuses on multiple uses of MPAs.¹⁶⁰ Nor is there language in the NMSA regarding the establishment of a national representative system of MPAs. In fact, some scholars argue that the NMSA contains substantial legal barriers for being used to establish a national system of marine reserves.¹⁶¹ These drawbacks meant that a different approach to establishing a national representative system of MPAs was required.

There is also no zoning system used in the designation or management of national marine sanctuaries under the NMSA, which means that the system lacks a consistent zoning framework for the designation and management of federal MPAs. Each sanctuary is responsible for its own independent zoning and each is operated under a different designation document, with no consistent framework between sanctuaries.¹⁶² This means that the management and zoning of each sanctuary depends on the type of ecosystem and the type(s) of human activities in that particular sanctuary.¹⁶³

Designation of a national marine sanctuary is a lengthy process that includes extensive environmental impact studies, consideration of multiple factors, and public comment.¹⁶⁴ The NMSA calls for the Secretary of Commerce to consult with other agencies and officials, appropriate officials of a Regional Fishery Management Council that may be affected by the proposed designation, and "other interested persons,"¹⁶⁵ a process that permits public comment.¹⁶⁶ In addition, prior to designating a sanctuary a draft environmental impact statement is prepared by the National

¹⁵⁸ Craig, *supra* note 66, at 221-34 (1999); Berger & Carr, *supra* note 1, at 15.

¹⁵⁹ Brax, *supra* note 8, at 74. The "ecological reserves" areas of the Florida Keys National Marine Sanctuary—the only zone which is fully a "no-take" zone—constitutes one-half of one percent of the Sanctuary. Craig, *supra* note 158, at 233.

¹⁶⁰ Brax, *supra* note 8, at 104 (2002).

¹⁶¹ For an overview, *see id.*

¹⁶² Telephone Interview with Sean Hastings, *supra* note 147.

¹⁶³ Baur, *supra* note 9.

¹⁶⁴ 16 U.S.C. § 1433; Brax, *supra* note 8, at 85-88.

¹⁶⁵ 16 U.S.C. § 1433.

¹⁶⁶ *Id.* § 1434.

Oceanographic and Atmospheric Administration, which permits for public comment on the draft management plan, draft regulations, and the proposed designation.¹⁶⁷ A public hearing must be held in the area(s) that will be most affected by the designation.¹⁶⁸ Public comment is also accepted during rezoning of existing sanctuaries, which may lead to changes in the rezoning plan and/or the uses permitted in different types of zones.

C. *Executive Order 13158: An Imperfect Step Towards a U.S. National Representative System*

The fragmented system of numerous U.S. MPAs created under the existing system has long been recognized as insufficient to protect the valuable marine ecosystems of the United States. On May 26, 2000 President William J. Clinton issued Executive Order 13158, (the "Order"), in order to help protect marine resources and strengthen the system of MPAs in the United States.¹⁶⁹ The Bush Administration subsequently endorsed the Order on June 4, 2001.¹⁷⁰ The Order was issued following a workshop on MPAs emphasizing the importance of a comprehensive national system of MPAs and calling for establishment of a federal process for such a system.¹⁷¹ The Order goes beyond the National Marine Sanctuary Program to lay the groundwork for a system for coordinating and improving MPAs in federal and state waters, as well as for establishing a national representative system of MPAs.¹⁷² The Order defines MPAs and directs federal agencies to strengthen and expand the management and protection of existing MPAs.¹⁷³ The Order directs federal agencies to avoid causing harm to the resources protected by MPAs in the course of federally conducted, approved, or funded actions, to develop and maintain an inventory of all MPAs in U.S. waters, and to establish a web site and a National Marine Protected Areas Center to assist with coordination of the national initiative.¹⁷⁴

¹⁶⁷ National Environmental Policy Act, 42 U.S.C. §§ 4321-4370 (2004); *Designating a NOAA National Marine Sanctuary*, at <http://www.sanctuaries.nos.noaa.gov/natprogram/npsitedes/npsitedes.html> (last visited May 21, 2004).

¹⁶⁸ 16 U.S.C. § 1434(a)(3).

¹⁶⁹ Executive Order, *supra* note 23.

¹⁷⁰ *Id.*; *Status of NOAA activities under Executive Order #13158*, Oct. 2001, at http://www.mpa.gov/information_tools/pdf/mpa_factsheet_oct_2001.pdf (last visited May 21, 2004).

¹⁷¹ *Safeguarding America's Seas: Establishing a National System of Marine Protected Areas*, *supra* note 145.

¹⁷² Executive Order, *supra* note 23, §§ 1, 4.

¹⁷³ *Id.* §§ 1-2.

¹⁷⁴ *Id.* § 4.

Under the national system contemplated by the Order, designation and management of MPAs would remain with existing authorities.¹⁷⁵ The Order specifically refers to the use of ecological reserves “in which consumptive uses of resources are prohibited” and directs the agencies to consult with states and regional fishery management councils¹⁷⁶ to coordinate the establishment and management of MPAs with all levels of government and the tribes.¹⁷⁷ Section Four also directs the agencies to establish a marine protected area federal advisory committee.¹⁷⁸

Prior to the Order, the United States did not have any mechanism or impetus to establish a national representative system of MPAs. To remedy this situation, Section Four of the Order calls on the Departments of Commerce and the Interior to begin developing a national system of MPAs, either through expanded protection of existing MPAs or the establishment of new MPAs.¹⁷⁹ The Order has been recognized as having “the potential to significantly change not only the United States’ use of MPAs, but also the entire structure of U.S. marine environmental policy.”¹⁸⁰

The Order, however, has a number of weaknesses that make implementation of a national system of MPAs uncertain.¹⁸¹ It does not establish specific mechanisms, such as policy or legal instruments, to create a national representative system for U.S. MPAs. The Order also fails to provide specific characteristics or criteria to determine which potential sites should be included in the national representative system.¹⁸² In addition, the Order does not call for specific appropriations, so future administrations could decide not to fund actions to carry out the requests of the Order.¹⁸³ It also does not create any substantive or procedural right or benefit “enforceable in law or equity by a party against the United States, its agencies, its officers, or any person,”¹⁸⁴ so any actions to establish the

¹⁷⁵ *Id.* § 3.

¹⁷⁶ The Magnuson-Stevens Fishery Conservation and Management Act of 1976 established eight regional fishery management councils to prepare fishery management plans for federal waters within their jurisdiction. 16 U.S.C. § 1852. For a discussion of how the Magnuson-Stevens Act may provide direct protection of marine habitats, see Baur, *supra* note 9. For a discussion of unsuccessful attempts to use the Magnuson-Stevens Act to establish large marine reserves, see Brax, *supra* note 8.

¹⁷⁷ Executive Order, *supra* note 23, § 4(8)(b).

¹⁷⁸ *MPA Federal Advisory Committee*, at www.mpa.gov/fac/fac.html (last visited Apr. 17, 2004). The committee was established and began holding public meetings in 2002. *MPA Federal Advisory Committee—FAC Meetings*, at http://www.mpa.gov/fac/fac_meetings.html (last visited May 21, 2004).

¹⁷⁹ Executive Order 13,158 § 1.

¹⁸⁰ MPAs: TOOLS FOR SUSTAINING OCEAN ECOSYSTEMS, *supra* note 2, at 96 (discussing the potential of the Order to increase the number of marine reserves in the United States).

¹⁸¹ Baur, *supra* note 9.

¹⁸² *Id.*

¹⁸³ *Id.*

¹⁸⁴ Executive Order, *supra* note 23, § 8(c).

national representative system taken by one administration could be revoked or ignored by future administrations.¹⁸⁵

During the initial implementation of the Order, the Departments of Commerce and the Interior identified two “parallel tracks” for the national initiative to establish the national representative system.¹⁸⁶ The first track is network design, which includes “evaluating the adequacy of existing levels of protection for marine resources and recommending new MPAs, and/or strengthening existing MPAs to establish a comprehensive and representative network.”¹⁸⁷ The second track is science-based management that uses “science (both natural and social) to develop objective information, technical tools, and management strategies needed to support a national MPA network.”¹⁸⁸

The United States is currently at a critical point for ocean and coastal protection, and establishment of a national representative system is essential to protect the full range of marine ecosystem services in U.S. waters. Although the Order provides the basis for development of such a system, it has limitations and progress has been slow. Given the current status of this process, it would be useful for the United States to base the development of its national representative system on the approach taken by Australia.

V. DEVELOPMENT OF A NATIONAL REPRESENTATIVE SYSTEM OF MPAS AND ADOPTION OF ZONING CLASSIFICATIONS IN THE UNITED STATES SHOULD BE MODELED ON THE APPROACH TAKEN BY AUSTRALIA

The United States should model its national representative system of MPAs on the model used by Australia. The national representative system in the United States provided for in the Order could be established utilizing either a cooperative non-binding approach, or through legislation specifically designed to establish the system. In addition, a zoning system similar to the system employed by Australia should be adopted for the U.S. national representative system. Adoption of a zoning plan for all levels of impact in MPAs, from marine reserve to multi-use, would add consistency to the system and create a cohesive management strategy for what is currently a fractured and unorganized system of MPAs and marine reserves in federal and state waters.

¹⁸⁵ Baur, *supra* note 9.

¹⁸⁶ *The National MPA Initiative*, at http://mpa.gov/information_tools/archives/initiative.html (last visited May 21, 2004).

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

A. *Strategies for Development of an Effective U.S. National Representative System*

Although the process for establishing a national representative system of MPAs in the United States has been initiated by Executive Order 13158, the development process is still in the very early stages. At this juncture the United States should look closely at the system developed by Australia. Australia has effectively designated a large area of territory into its national representative system and in doing so has ensured the continuing viability of many of its marine resources. In light of the many threats to the U.S. marine environment, a similar course of action is critical for the United States.

The Order's provision that MPAs shall continue to be established by federal, state, and local governments under a model national representative system in the United States is very important. This allows for an accelerated program of declarations of MPAs, similar to that which has occurred in Australia during the implementation of the NRSMPA.¹⁸⁹ Each level of government can identify and designate MPAs, which means that a larger number of MPAs can be placed into the system more rapidly than if only one level of government has authority to designate areas.

The United States should incorporate the four key characteristics of Australian MPAs within the NRSMPA system in the development of its own national representative system. The first characteristic is that the MPA must be classifiable into one or more of the IUCN categories.¹⁹⁰ The MPA may incorporate zones ranging from highly protected to multiple use. Next, the MPA must be designated specifically for the conservation of biodiversity.¹⁹¹ Third, the MPA must have a secure status that can only be revoked through a congressional process.¹⁹² Finally, the MPA must contribute to the "representativeness, comprehensiveness or adequacy of the national system."¹⁹³

The above criteria would help to guide the development of an effective national representative system in the United States. The adoption of the IUCN categories would also provide a predictable and consistent management framework for all MPAs within the system.¹⁹⁴ The requirement that MPAs be designated for biodiversity conservation—as opposed to cultural or other preservation—would emphasize the importance

¹⁸⁹ *About the National Representative System of Marine Protected Areas*, *supra* note 49.

¹⁹⁰ GUIDELINES, *supra* note 117, at 5. See *supra* Part III.C regarding IUCN zoning.

¹⁹¹ GUIDELINES, *supra* note 117.

¹⁹² *Id.*

¹⁹³ *Id.* See *supra* Part III.C for a discussion of the Australian National Representative System.

¹⁹⁴ See *infra* Part V.B.

of the national system to the protection of marine ecosystem functions, habitats, and species. Providing the MPA with a secure legal status that cannot be revoked except through a specific governmental process ensures that the designations will be long-lasting and less subject to political pressures. It also indicates that the creation of the national representative system is a top priority and the appropriate legal protections are being provided in a sufficient manner. The final requirement of representativeness helps ensure that the national system does an effective job of representing each type of ecosystem and that the system is comprehensive enough to offer benefits.

In addition to these general framework requirements, the United States should consider implementing the types of detailed guidelines used to develop the Australian NRSMPA. The Australian guidelines include the roles of the jurisdictions in the establishment of the NRSMPA and specific criteria for the identification and selection of MPAs to be used by the relevant agency.¹⁹⁵ Each jurisdiction selects and declares the MPAs in their waters. Both national and regional priorities are developed and the guidelines stress the importance of using the NRSMPA to identify gaps in the representation of ecosystems.¹⁹⁶ In Australia, evaluation of the NRSMPA is a collaborative process that the Commonwealth oversees with assistance from the states and the Northern Territory.¹⁹⁷ In addition to the guidelines, detailed actions have been identified to achieve the goals of the NRSMPA, including identifying responsibility for each action and establishing a timetable for delivery of the actions.¹⁹⁸

The guidelines and criteria for establishing the NRSMPA should be used as a model for establishing the national representative system in the United States. The guidelines encourage cooperative management with federal coordination, and provide benchmarks that could help the United States develop the process for establishing and managing a national representative system. Regardless of how the national representative system is implemented, the detailed procedures and cooperative management schemes adopted by Australia should be used as a model during the process. There are several methods that the United States could utilize to structure and implement its national representative system, including a non-binding cooperative agreement and specific legislation.

¹⁹⁵ GUIDELINES, *supra* note 117, at 8-9.

¹⁹⁶ *Id.* at 6-7.

¹⁹⁷ *Id.* at 8.

¹⁹⁸ STRATEGIC PLAN, *supra* note 121.

1. *A Cooperative Agreement Between The States and The Federal Government Should Be Utilized To Create A National System Of Marine Protected Areas*

Given the early stage of implementation of a national system and the broad framework of the Order, it would be useful for the United States to model its national representative system on the cooperative management system currently used by Australia. The cooperative approach taken by the Commonwealth and state governments has proven to be an effective method of quickly establishing a viable and significant national representative system.¹⁹⁹ Due to the similarities between the federal models of government in the United States and Australia, a similar cooperative approach could be utilized during development of the U.S. national representative system.

An agreement modeled on Australia's Inter-governmental Agreement on the Environment (the "Agreement") could be adopted between the federal government and U.S. coastal states. The Agreement is based on a model of "cooperative federalism" in which the Commonwealth pledged to reach agreement on environmental issues with the states by consensus.²⁰⁰ Under the Agreement, the Commonwealth agreed to avoid taking unilateral action to override government decisions made by the states.²⁰¹ The Agreement is not a legally binding agreement and the obligations under the Agreement are political in nature, but it established the basis for the National Environment Protection Measures Bill of 1998, which creates a scheme of uniform national environmental standards for the states and the Commonwealth.²⁰²

In the United States, both the NMSA and the Order call for cooperation and consultation with the states and other federal or local agencies to establish and manage MPAs.²⁰³ A non-legally binding agreement such as Australia's Inter-governmental Agreement could be created to provide a formal framework for both the states and the federal government to designate MPAs and reserves in federal and state waters as part of the national system. The key characteristics of MPAs that are part of the national representative system should be modeled after those used by Australia and incorporated into the cooperative agreement.²⁰⁴

¹⁹⁹ *About the National Representative System of Marine Protected Areas, supra* note 49.

²⁰⁰ National Environment Protection Measures (Implementation) Bill, 1998 (Austl.).

²⁰¹ *Id.*

²⁰² The first piece of legislation passed towards creation of a uniform scheme was the National Environment Protection Council Act, 1994 (Austl.). National Environment Protection Measures (Implementation) Bill Digest No. 49, 1998 (Austl.)

²⁰³ 16 U.S.C. § 1431 (b)(7) (2004); Executive Order, *supra* note 23, § 4(8)(b).

²⁰⁴ *See supra* Part V.A.

A cooperative approach presents disadvantages as well as advantages. An obvious drawback stems from the fact that such an approach is cooperative and not legally binding. Without fixed legal consequences, all parties to the agreement must place a high priority on establishing the national representative system in order for it to be effective. This appears to have been the situation in Australia.²⁰⁵ Conversely, one of the chief advantages to this approach is that it is flexible and may allow for the creation of a U.S. equivalent to the NRSMPA more quickly than if the cooperative relationship is formalized through legislation. If the federal government and the states place a high priority on implementing the national representative system and are willing to cooperate through the appropriate agencies, the process may move forward more quickly than the formal legislative process, especially given that MPAs are an often contentious issue.

2. *Development of Legislation to Create a National Representative System of MPAs in the United States*

Another approach to implementing the national representative system in the United States is legislation to establish the framework for the MPA system. A model for the type of legislation necessary to form a cohesive national representative system of marine protected areas in the United States is provided by the National Wilderness Preservation System Act ("Wilderness Act").²⁰⁶ Congress passed the Wilderness Act in response to threats to wilderness areas that had been designated through administrative action and subsequently revoked.²⁰⁷ The Wilderness Act recognized that "congressional designation was essential because administrative wilderness could be administratively revoked at any time."²⁰⁸ The Wilderness Act provides a very broad, idealized definition of wilderness, describing it as "an area where the earth and its community of life are untrammelled by man...retaining its primeval character."²⁰⁹ It has been described as "one of the most idealistic pieces of federal legislation ever enacted."²¹⁰ It also recognizes that a wilderness area may contain ecological, geological, or

²⁰⁵ See *supra* Part III.C.

²⁰⁶ The Wilderness Act of 1964, 16 U.S.C. §§ 1131-1136 (2000).

²⁰⁷ GEORGE CAMERON COGGINS ET AL., FEDERAL PUBLIC LAND & RESOURCES LAW 1153 (University Casebook Series, 4th ed. 2001).

²⁰⁸ *Id.* For an overview of the Wilderness Act see Daniel Rohlf & Douglas L. Honnold, *Managing the Balances of Nature: the Legal Framework of Wilderness Management*, 15 *ECOLOGY L.Q.* 249 (1988).

²⁰⁹ The Wilderness Act of 1964, 16 U.S.C.A. § 1131(c) (2000).

²¹⁰ COGGINS ET AL. *supra* note 207, at 1153.

other features of scientific, educational, scenic or historical value.”²¹¹ The Wilderness Act provides that the same agency that managed the land prior to inclusion in the wilderness system will continue to manage it after the designation.²¹²

The Wilderness Act is an example of the type of legislative framework that could be established for the marine environment. Like the Wilderness Act, legislation creating a national representative system of MPAs should require that the state or federal agency charged with management of the area prior to designation continue to manage the MPA after designation as part of the national system. Such legislation could ensure that there are consistent policies between MPAs in state and federal waters as well as require cooperation between the appropriate federal and state agencies. Like the Australian legislation, U.S. legislation should explicitly state that conservation is the primary objective of MPAs. This clarity is necessary to establish the priority of protecting the marine environment. Moreover, the legislation should recognize the link between sustainable use and conservation.²¹³ It should establish the criteria for designating an MPA under the national representative system, including marine reserves, and provide for cooperative management under a single management plan of MPAs that fall into adjacent federal and State waters.

Although new laws may be critical to implementing a national representative system in the United States, rigorous use of existing laws may also provide additional MPA protection. For example, under the water quality standards established by the Clean Water Act, high quality waters of exceptional recreational or ecological significance representing an outstanding national resource may be listed for protection.²¹⁴ These are areas where water quality is to be protected and maintained.²¹⁵ MPAs or marine reserves in federal waters could be listed under this standard, while MPAs or marine reserves in state waters could be listed for protection under the equivalent state regulations.²¹⁶

²¹¹ 16 U.S.C.A § 1131(c).

²¹² *Id.* § 1131(b).

²¹³ WORLD COMMISSION ON PROTECTED AREAS, GUIDELINES FOR MARINE PROTECTED AREAS 14 (Graeme Kelleher ed., Best Practice Protected Area Guidelines, Series No. 3, 1999).

²¹⁴ 40 C.F.R. § 131.12 (2004).

²¹⁵ *Id.*

²¹⁶ For example, Washington State law allows for the designation of marine surface waters for protection. The categories for aquatic life include the ability to designate a category includes “extraordinary quality salmonid and other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning” and establishes specific criteria for such a designation. WASH. ADMIN. CODE § 173-201A-210 (2004).

In addition, there are international legal mechanisms for providing extra protection to specific marine areas that could be used for critical areas in the national representative system. For example, the United Nations Convention on the Law of the Sea (the "Convention") provides special protections for specific marine ecosystems.²¹⁷ The Convention was sent to the U.S. Senate for ratification on February 25, 2004.²¹⁸ If the treaty is ratified, it will allow a coastal U.S. state to adopt special rules and standards relating to regulation of pollution or navigational practices for a particular area.²¹⁹ Regardless of the method chosen to implement the national representative system, however, it will face challenges given the frequently controversial nature of MPAs.²²⁰

3. *Challenges Associated With Establishment of a National Representative System in the United States*

There are conditions that make implementation of the NRSMPA in Australia easier than it may be in the United States, including the high priority Australia has placed on implementation of their system. Public support for MPAs and marine reserves in Australia is also high.²²¹ In coastal Queensland, eighty percent of communities support marine sanctuaries.²²² Moreover, key political figures in Australia support the designation of large MPAs.²²³ The NRSMPA and protection of the marine environment clearly is a priority for the Commonwealth.²²⁴ Based on the limited progress made towards developing a national representative system following Executive Order 13158, it appears that the development of such a system is less of a priority in the United States. In addition, there are far fewer coastal states involved in the cooperative agreement in Australia than there would be in

²¹⁷ U.N. Convention on the Law of the Sea, opened for signature Dec. 10, 1982, U.N. Doc. A/CONF.62/122 (1982), reprinted in 21 I.L.M. 1261 (1982) (entered into force Nov. 16, 1994) [hereinafter LOSC]. See, e.g., *id.* arts. 207-212.

²¹⁸ Press Release, Senator Richard G. Lugar, Foreign Relations Committee Advances Law of the Seas Treaty (Feb. 25, 2004), available at <http://lugar.senate.gov/pressapp/record.cfm?id=218386> (last visited May 21, 2004).

²¹⁹ LOSC, *supra* note 217, art. 211.

²²⁰ See *supra* Part I.E.

²²¹ *Getting into the Zone*, *supra* note 77.

²²² *Id.*

²²³ *Id.*

²²⁴ Australia's Environment Minister has been credited for his courage in pushing for the re-zoning of the Great Barrier Reef Marine Park and significantly increasing no-take zones (marine reserves). See Dickie, *supra* note 67.

the United States,²²⁵ which eases implementation of a coordinated effort. Finally, Australia's tourism industry relies heavily on marine resources and good marine environmental quality. These conditions, particularly strong government and public support for MPAs, need to be further developed in the United States if a national representative system is to be effective.

As the importance of networks of MPAs and the effectiveness of marine reserves in protecting biological diversity and ecosystem functions becomes more widely recognized, public perception in the United States regarding MPAs and marine reserves may become more supportive. Cooperation and support from all relevant levels of government would bolster this shift, as would a national effort to improve education and outreach related to the benefits of MPAs and marine reserves.

Such support can be created. Australia, for example, has made an effort to provide accessible educational materials about the NRSMPA such as informational brochures and web sites.²²⁶ These measures encourage public support and could also be used by the United States to build awareness of the national representative system. Increasing non-consumptive uses of marine resources, such as tourism involving scuba diving in MPAs, can lead to creation of economic benefit of MPAs in the United States.²²⁷ If fishers and other resource users can realize that marine reserves and MPAs are necessary to protect fisheries and biological diversity—not just within the protected areas but across all marine ecosystems—support for a national system of MPAs may follow.

B. Adoption of a Standardized Zoning Plan for MPAs

Adoption of a zoning system for use in designating and managing MPAs in the United States would provide a consistent framework across ecosystems and jurisdictions. As an initial step, a zoning plan using uniform categories like those of the IUCN should be adopted for all federal national marine sanctuaries. The IUCN categories are appropriate because they are well established, long-standing and are used effectively by Australia. In addition, as part of the development of the U.S. national representative

²²⁵ There are 21 coastal States in the continental United States, not including those adjacent to the Great Lakes; there are 6 States in Australia (all of which include coastline). NATIONAL GEOGRAPHIC, ATLAS OF THE WORLD (6th ed. rev. 2002).

²²⁶ See, e.g., *Protecting our Coasts and Oceans*, *supra* note 6.

²²⁷ Studies in the early 1990s identified scuba diving as one of the world's fastest growing sports, and marine protected areas such as the Great Barrier Reef are often considered very attractive dive destinations. Derrin Davis & Clem Tisdell, *Economic Management of Recreational Scuba Diving and the Environment*, 48 J. ENVTL. MGMT. 229 (1996).

system, all MPAs that become part of the system should be zoned according to a standardized zoning plan, whether in federal or state waters.

1. *A Zoning Plan Based on the IUCN Categories Should be Utilized by the National Marine Sanctuaries Program*

Establishing a zoning plan based on the IUCN categories would be an effective first step towards uniformity for existing national marine sanctuaries. Currently, each sanctuary establishes zones independently without a uniform classification system. For instance, the Florida Keys National Marine Sanctuary has a complex zoning system that includes five types of zones, including three different types of marine reserves with different use restrictions.²²⁸ A zoning plan could be applied to all national marine sanctuaries during congressionally mandated revision of management plans for existing sanctuaries or during establishment of new sanctuaries. Adoption of the IUCN categories would permit the federal MPA system in the United States to be compared to those of other countries that use the IUCN system for the purpose of measuring representativeness among different national MPA systems.²²⁹ The IUCN categories would also assist with establishing a consistent framework for a global representative system of MPAs.

There are several advantages to having a national zoning plan for national marine sanctuaries. A standardized plan would ease implementation and zoning of the sanctuaries and make the system more predictable for stakeholders. Management of sanctuaries would be simplified if zones and permitted uses of the zones were consistent across all sanctuaries instead of varying widely from one location to another. A zoning plan would allow for recognition of the sanctuary role in resource management and conservation by the public and other agencies. A zoning plan would also permit a tighter link between the NMSA and individual sanctuary management actions and proposals, and could provide consistency with other federal and state laws and policies.²³⁰ Such a plan would also improve administrative aspects, as the consistency across national marine sanctuaries would ease coordination among the sanctuaries. In addition, educational and outreach materials related to sanctuary zoning could be

²²⁸ Craig, *supra* note 158, at 230.

²²⁹ The ability to measure representativeness helps ensure that adequate numbers, sizes, and ecosystem types of MPAs are included in the national representative system. GUIDELINES, *supra* note 117, at 10.

²³⁰ Telephone Interview with Sean Hastings, *supra* note 147.

standardized, rather than developing new standards for each individual location.²³¹

There are three primary ways in which a zoning plan could be adopted for federal national marine sanctuaries. The first is during reauthorization of the NMSA in 2005.²³² A zoning plan based on the IUCN categories could be included as an amendment to the NMSA during the reauthorization of the NMSA in 2005. Alternatively, the Secretary of Commerce could adopt a zoning plan for all federal sanctuaries by promulgating regulations under his authority to manage the National Marine Sanctuary Program. This authority allows the Secretary to designate sanctuaries and promulgate regulations implementing the designation,²³³ or modify the terms of the designation.²³⁴ The Secretary is also provided authority to “issue such regulations as may be necessary to carry out this title.”²³⁵ Of these two options, adopting a uniform zoning plan for the National Marine Sanctuary System through amendment of the NMSA may be a more efficient method than by promulgating regulations because of the lengthy public involvement process mandated by the NMSA to promulgate regulations.²³⁶ Finally, the zoning plan for sanctuaries could be established by National Oceanic and Atmospheric Administration guidelines. Guidelines are used by administrative agencies as an informal method to establish regulatory policy.²³⁷ Guidance documents are not legally binding on the agency or on the public.²³⁸ The non-enforceable nature of the guidelines, however, might make the zoning plan easier to implement than the previous methods. The agency could establish the zoning framework via guidelines, and then each sanctuary could promulgate its own rule to implement the zones. Enforceability would occur at the sanctuary-specific level following promulgation of the rules.²³⁹

²³¹ *Id.*

²³² The NSMA authorized appropriations through 2005 when amended in 2000. *Significant NOAA Expiring Statutory Authorities*, at <http://www.legislative.noaa.gov/Legislation/statauthority.html> (last visited May 21, 2004).

²³³ 16 U.S.C. §1433(a) (2004).

²³⁴ *Id.* § 1434(e).

²³⁵ *Id.* § 308.

²³⁶ The Secretary is required to publish in the Federal Register notice of any designation, the final regulations to implement the designation and “any other matters required by law” and to allow public comment on the proposed rule. *Id.* § 304.

²³⁷ GELLHORN & BYSE’S ADMINISTRATIVE LAW 730 (Peter S. Strauss et al. eds., 10th ed. 2003).

²³⁸ *Id.* at 731.

²³⁹ E-mail from Don Baur, Partner, Perkins Coie, Washington D.C., to author (Mar. 18, 2004, 19:53:35 PST) (on file with author).

2. *All MPAs that Are Part of the National Representative System Should Be Classified Under a Consistent Zoning System*

In addition to adopting a zoning plan for national marine sanctuaries, all MPAs that are established as part of the national representative system should be classified according to the IUCN categories. Adoption of a zoning plan as a management strategy would provide consistency across a wide range of ecosystems and different levels of government. A zoning plan would also ease implementation of a national representative system. MPAs could be placed into a certain category instead of creating a new zoning plan for each MPA. Management would be more consistent as permitted uses would remain consistent across jurisdictions and regions. Enforcement of MPA restrictions would be easier as uses would be consistent within the framework instead of varying from one MPA to another. Education and outreach would also be simplified. Once resource users became familiar with the different categories and uses permitted in each zone, this knowledge would apply regardless of the jurisdiction or location of the MPA or marine reserve. Whether the MPA is in federal or state waters, the categories would create a framework that would make implementation and management of a national representative system more efficient.

Adoption of the IUCN categories in the United States could be done via a cooperative agreement between the federal government and the states. Alternatively, legislation such as that described above to implement the national representative system could include adoption of the IUCN categories, and require that MPAs designated as part of the national system be classified and managed according to the categories.

3. *Challenges Associated with the Establishment of a Zoning System*

Adopting a standardized zoning system for national marine sanctuaries would face certain obstacles. Adoption of a zoning plan for MPAs in different regions or ecosystems may limit the flexibility of a specific MPA to zone according to biological or activity aspects.²⁴⁰ The IUCN categories, however, offer a wide range of uses and levels of

²⁴⁰ For instance, the National Marine Sanctuary Program emphasizes that federal MPAs have been established in a wide variety of ecosystems for a wide variety of purposes. *Welcome to the National Program*, available at <http://www.sanctuaries.nos.noaa.gov/natprogram/natprogram.html> (last visited May 21, 2004).

protection.²⁴¹ Based on the attributes and uses of each MPA, any type of MPA should potentially fit within the established categories, from fully protected marine reserve to a multiple use MPA that permits certain types of extractive activities. Further, the IUCN system provides the ability to have different zones within the framework of the general category of the MPA. For instance, based on the recent research demonstrating the effectiveness of marine reserves, it would be beneficial for MPAs to contain one or more fully protected reserves within the MPA if it is a large multi-use MPA. Reserves permit ecosystems to recover while offering spillover benefits to other areas of the MPA.²⁴²

VI. CONCLUSION

The system of MPAs in the United States is currently inadequate to protect marine resources and lacks a cohesive framework. Executive Order 13158 lays the groundwork for development of a national representative system of MPAs but the process is in the very early stages of development. The current legal framework for designating federal MPAs under the National Marine Sanctuaries Act is also deficient for developing a national representative system. As a result, the United States should look to the success of Australia in establishing a system that protects different ecosystems in different regions because such a system provides a valuable model for making protection of marine biodiversity a priority.

Australia has been effective at designating a large number and area of MPAs under the NRSMPA in a relatively short period of time. Cooperative agreements between Australian states and the Commonwealth government, combined with legislation, establish a uniform framework for the designation of MPAs while permitting Commonwealth, state, and Northern Territory jurisdictions to designate and manage MPAs within their own waters. The Commonwealth plays a coordinating role for the NRSMPA. Although the Australian system faces its own challenges,²⁴³ it generally provides a strong model for the development of a national representative system in the United States.

Adoption of a zoning system such as that adopted by Australia should also be utilized in the United States. Australia's use of the IUCN zoning

²⁴¹ *E.g., compare* Category Ia—which is managed as a strict nature reserve (managed mainly for science), with Category VI which permits multiple human uses including extractive activities such as fishing. IUCN COMMISSION, *supra* note 131, at 17, 23.

²⁴² PALUMBI, *supra* note 44, at 33.

²⁴³ *See supra* Part III.

classification system provides a consistent framework for the designation and management of MPAs, regardless of the jurisdiction of the MPA. This system enables Australian MPAs to be designed, designated, and zoned according to a clear, consistent framework that makes management and enforcement more predictable and efficient.

The threats facing the marine ecosystems of the United States are critical and increasing in the face of insufficient protections.²⁴⁴ In order to protect marine biodiversity and work towards sustainable use of marine resources, it is necessary for the United States to take rapid action to increase the number of MPAs. This includes implementing an effective, secure national representative system under Executive Order 13158. The United States should emulate the proactive approach to MPAs taken by Australia to help ensure that marine resources are protected on a long-term basis.

²⁴⁴ AMERICA'S LIVING OCEANS, *supra* note 15, at 5.

