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THE SEA GRANT LAW AND POLICY DIGEST is a bi-annual publication indexing the law review and other articles in the fields of ocean and coastal law and policy published within the previous six months. Its goal is to inform the Sea Grant community of recent research and facilitate access to those articles. The staff of the Digest can be reached at: the Sea Grant Law Center, Kinard Hall, Wing E - Room 256, P.O. Box 1848, University, MS 38677-1848, phone: (662) 915-7775, or via e-mail at sealaw@olemiss.edu.



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I.

II.

AQUACULTURE

Gerwing, Kira, and Timothy McDaniels. "Listening to the Salmon People: Coastal First Nations' Objectives Regarding Salmon Aquaculture in British Columbia." 19 Society & Natural Resources 259 - 273 (2006).

Gerwing and McDaniels examine the effect of the growth of salmon aquaculture in the traditional territories of British Columbia's coastal indigenous people (First Nations). These First Nations have relied on salmon fisheries for thousands of years and have much to lose. Gerwing and McDaniels examine the values of First Nations people regarding salmon aquaculture using value-focused thinking, a problem-structure method from applied decision analysis. The authors hope their findings can be used to identify the criteria that should be considered when making decisions about aquaculture used to represent the territories.

Pomeroy, Robert S., et. al. "Farming the Reef: is Aquaculture a Solution for Reducing Fishing Pressure on Coral Reefs?" 30 *Marine Policy* 111 - 130 (2006).

Pomeroy and co-authors investigate the feasibility of using aquaculture to harvest live reef organisms, as opposed to current methods which involve capturing the organisms from their wild reef habitats in the Indo-Pacific region. Since these organisms are an important component of international trade, Pomeroy and co-authors predict that some forms of small-scale aquaculture of coral reef organisms may be a successful solution to reduce fishing pressure on coral reefs.

Whitmarsh, David J., et. al. "Searching for Sustainability in Aquaculture: An Investigation into the Economic Prospects for an Integrated Salmon-Mussel Production System." 30 *Marine Policy* 293 - 298 (2006).

One of the challenges facing environmental economists is how to estimate the external costs of cage aquaculture and "internalize" those costs. Whitmarsh and co-authors examine the financial viability of a mitigation strategy which involves the development of integrated production systems based on polyculture. The authors' findings demonstrate the commercial potential of an integrated salmon-mussel production system under present market condition, but stress the critical role played by future price trends.

CLIMATE CHANGE

Clark, Barry M. "Climate Change: A Looming Challenge for Fisheries Management in Southern Africa." 30 *Marine Policy* 84 - 95 (2006).

Clark accesses the effects of global warming on fish stocks in South Africa by examining ocean temperature, pressure/wind fields, carbon-dioxide concentration, rainfall, mean sea level, and UV radiation. In addition to identifying the fishery concerns, Clark also suggests proactive measures that should be taken by management authorities in order to prepare these fisheries for future changes.

Harper, Benjamin P. "Climate Change Litigation: The Federal Common Law of Interstate Nuisance and Federalism Concerns." 40 *Georgia Law Review* 661 - 698 (2006). Harper examines the possibility of using legal action to address the global warming

issue. Harper outlines global climate change and discusses obstacles to climate change litigation based on federal common law. Harper suggests that suits relying on federal common law will fail in light of courts' general unwillingness to apply it in politically charged areas.

Melloul, A., and M. Collin. "Hydrogeological Changes in Coastal Aquifers Due to Sea Level Rise." 49 Ocean and Coastal Management 281 - 297 (2006).

Global warming and climate change can lead to sea level rise and groundwater permanent reserve losses (PRL). Melloul and Collin present a case study of Israel's Coastal aquifer to examine the processes of groundwater loss and how to estimate those losses.

Schwartz, Jason. "'Whose Woods These Are I Think I Know:' How Kyoto May Change Who Controls Biodiversity." 40 University of Richmond Law Review 421 - 480 (2006).

The United Nations Framework Convention on Climate Change and its Kyoto Protocol is a multilateral agreement that, on its face, has little to do with forests. However, Schwartz contends that it could end up interfering to an unexpected degree with nations' traditional control over their own forests.

COASTAL HAZARDS

III.

Arlikatti, Sudha, et. al. "Risk Area Accuracy and Hurricane Evacuation Expectations of Coastal Residents." 38 *Environment and Behavior* 226 - 247 (2006).

Arlikatti and co-authors examined the accuracy with which Texas coastal residents were able to locate their residences on hurricane risk area maps. The authors found that overall, only 36 percent of the respondents correctly identified their risk areas and another 28 percent were off by one risk area. The authors conclude, however, that risk area accuracy is of little significance because it is not correlated with evacuation expectations. Evacuation expectations appeared to relate to previous hazard experience and expected evacuation context.

Berke, Philip R., and Thomas J. Campanella. "Planning for Postdisaster Resiliency." 604 *The ANNALS of the American Academy of Political and Social Science* 192 - 207 (2006).

Berke and Campanella discuss major issues associated with planning for postdisaster recovery, including barriers posed by federal and state governments, the promise and risks of compact urban form models for guiding rebuilding, and the failure to involve citizens in planning for disasters. The authors offer policy recommendations to foster predisaster recovery planning for resilient communities.

Bourque, Linda B., et. al. "Weathering the Storm: The Impact of Hurricanes on Physical and Mental Health." 604 *The ANNALS of the American Academy of Political and Social Science* 129 - 151 (2006).

Bourque and co-authors review the deaths, injuries, and diseases attributed to hurricanes that made landfall in the U.S. prior to Hurricane Katrina and the information available to date about mortality, injury, and disease attributable to Hurricane Katrina. Preliminary data indicate that elderly people were substantially overrepresented among the dead and that evacuees represent a population potentially predisposed to a high level of psychological distress.

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Burby, Raymond. "Hurricane Katrina and the Paradoxes of Government Disaster Policy: Bringing About Wise Governmental Decisions for Hazardous Areas." 604 *The ANNALS of the American Academy of Political and Social Science* 171 - 191 (2006).

Burby argues that the unprecedented losses from Hurricane Katrina can be explained by two paradoxes: the safe development paradox and the local government paradox. The former is that in trying to make hazardous areas safer, the federal government actually increased the potential for catastrophic loss. The latter is that while their citizens bear the brunt of human suffering, local officials pay insufficient attention to policies that limit vulnerability. Burby contends, however, that in spite of these two paradoxes, disaster losses can be blunted if local governments prepare comprehensive plans for hazard mitigation.

Carbone, Jared, et. al. "Can Natural Experiments Measure Behavior Responses to Environmental Risks?" 33 Environmental and Resource Economics 273 - 297 (2006).

Carbone and co-authors evaluate the use of hurricanes as a source of new risk information to households in coastal counties. The authors also looked at the extent to which housing prices before and after Hurricane Andrew reveal how Floridians in Dade and Lee counties responded to risk information provided by the storm. Research findings suggest there is a reasonably high level of consistency in a repeat sales model's ability to estimate the effects of the risk information conveyed.

Cutter, Susan L., and Christopher T. Emrich. "Moral Hazard, Social Catastrophe: The Changing Face of Vulnerability along the Hurricane Coasts." 604 *The ANNALS of the American Academy of Political and Social Science* 102 - 112 (2006).

The social vulnerability of the American population is not evenly distributed among social groups or between places, as some regions may be more susceptible to the impacts of hazards based on the characteristics of the people residing within them. In high risk areas, such as the hurricane coasts, differential vulnerabilities can lead to catastrophic results. Cutter and Emrich argue that the geographic discrepancies in social vulnerability necessitate different mitigation, post-response, and recovery actions and that a one-size-fits-all approach to preparedness, response, recovery, and mitigation may be the least effective in reducing vulnerability or improving local resilience.

Eckstrom, Richard L., et. al. "Adoption of the International Residential Code in a High Hazards Region - An Overview." 12 *Journal of Architectural Engineering* 1 - 11 (2006).

South Carolina was one of the first jurisdictions to adopt the 2000 International Residential Code (IRC). Eckstrom and co-authors conducted a study to determine how well the IRC has been adopted by coastal South Carolina communities. Their research revealed that most plan preparers and building departments are not following the IRC, which demonstrates the need for increased professional education and code enforcement.

Elrod, Carrie L., et. al. "Challenges in Implementing Disaster Mental Health Programs: State Program Directors' Perspectives." 604 *The ANNALS of the American Academy of Political and Social Science* 152 - 170 (2006).

The Crisis Counseling Assistance and Training Program grants supplemental federal

funding to states for individual and community crisis intervention services in the aftermath of presidentially declared disasters. Elrod and co-authors conducted a study of thirty-eight state program directors to evaluate the effectiveness of these services. Their results highlight the importance of, among others things, including mental health in state-level disaster plans, clarifying program guidelines, and building state capacity.

Harrald, John R. "Agility and Discipline: Critical Success Factors for Disaster Response." 604 The ANNALS of the American Academy of Political and Social Science 256 - 272 (2006).

Over the last thirty years, the U.S. emergency management community has been increasing its ability to structure, control, and manage a large response. The result is a National Response System based on the National Response Plan and the National Incident Management System. During the same period, disaster researchers have been documenting the nonstructural factors, such as improvisation and adaptability, which are critical to problem solving. Harrald argues that these two streams of thought are not in opposition, but form orthogonal dimensions of discipline and agility that must both be achieved.

Houck, Oliver. "Can We Save New Orleans?" 19 *Tulane Environmental Law Journal* 1 - 68 (2006).

Houck analyzes the efforts of various decision-makers, including the U.S. Army Corps of Engineers, FEMA, local authorities, and members of Congress, to protect the Louisiana coast after Hurricane Katrina. Houck argues that restoring the wetlands and developing a thoughtful land-use plan, not rebuilding every inch of the coast, will best help restore the city and provide safety for residents.

Kettl, Donald F. "Is the Worst Yet to Come?" 604 The ANNALS of the American Academy of Political and Social Science 273 - 287 (2006).

Following the 9/11 terrorist attacks, public officials pledged that the nation would rise to the challenge and ensure that the country would not suffer such a disaster again. However, many of the problems that surfaced during 9/11 returned yet again to plague the Katrina recovery efforts. Kettl cautions that, as bad as the problems were in the Gulf, they could have been even worse had the storm been stronger or scored a direct hit. As future disasters (earthquakes, floods, etc.) are inevitable, Kettl warns that unless the lessons of Katrina are taken to heart, especially those related to communication and coordination, the country is likely to repeat the same mistakes.

Kunreuther, Howard. "Disaster Mitigation and Insurance: Learning from Katrina." 604 *The ANNALS of the American Academy of Political and Social Science* 208 - 227 (2006).

Kunreuther discusses Hurricane Katrina as illustrative of the "natural disaster syndrome." Prior to a disaster, individuals in hazard-prone areas do not voluntarily adopt cost-effective loss reduction measures. Post-disaster the federal government comes to the rescue with disaster assistance. There are a number of reasons why individuals do not act voluntarily to protect themselves, including underestimating the likelihood of a future disaster and budget constraints. Kunreuther argues that in these situations a cost-benefit analysis can determine when a well-enforced building code would be appropriate.

Manuel, John. "In Katrina's Wake." 114 Environmental Health Perspectives A33 - A39 (2006).

Manuel discusses a number of the environmental health implications of Hurricane Katrina including hazards posed by floodwaters and disabled water treatment systems, contaminated sediment, debris, and mold.

Mitchell, James K. "The Primacy of Partnership: Scoping a New National Disaster Recovery Policy." 604 *The ANNALS of the American Academy of Political and Social Science* 228 - 255 (2006).

Hurricane Katrina is widely perceived as a threshold-crossing event capable of bringing about sweeping changes in public policy. Mitchell argues that proposals for improving the leadership of disaster-management organizations divert attention from the more important task - nourishment of partnerships among stakeholder groups.

Nigg, Joanne, et. al. "Hurricane Katrina and the Flooding of New Orleans: Emergent Issues in Sheltering and Temporary Housing." 604 *The ANNALS of the American Academy of Political and Social Science* 113 - 128 (2006).

Hurricane Katrina resulted in an unprecedented demand for sheltering and temporary housing across a four-state area along the Gulf Coast. Nigg and co-authors review the disaster literature with respect to sheltering and temporary housing and contrast how these needs actually developed. The authors also investigate the ways that intergovernmental planning failed to anticipate the need for housing solutions or effectively implement existing plans.

Paul, Alak, and Maksudur Rahman. "Cyclone Mitigation Perspectives in the Islands of Bangladesh: A Case of Sandwip and Hatia Islands." 34 *Coastal Management* 199 - 215 (2006).

Paul and Rahman compare two neighboring islands in Bangladesh, Sandwip and Hatia, with respect to disaster reaction and management. Their research shows that the inhabitants of Hatia are more aware of and confident in disaster management, but that residents of both islands have established trust in the warning signals following the heavy devastation of great cyclones of 1970, 1985, 1991, and 1997.

Rodríguez, Havidán, et. al. "Rising to the Challenges of a Catastrophe: The Emergent and Prosocial Behavior following Hurricane Katrina." 604 *The ANNALS of the American Academy of Political and Social Science* 82 - 101 (2006).

Rodríguez and co-authors describe the nontraditional behavior that emerged in the aftermath of Hurricane Katrina and discuss the prosocial behavior (much of it emergent) that was by far the primary response to this event. The authors limit their systematic analyses of emergent behavior to five groupings: hotels, hospitals, neighborhood groups, rescue teams, and the Joint Field Office. Their research reveals that these various social systems and the people in them rose to the demanding challenges of the catastrophe.

Sylves, Richard T. "President Bush and Hurricane Katrina: A Presidential Leadership Study." 604 *The ANNALS of the American Academy of Political and Social Science* 26 - 56 (2006).

President George W. Bush personally accepted blame for the failures and shortcomings of government response to Hurricane Katrina. Sylves analyzes the facts of the events, the policies and organizational alignments in place before the disaster, and the president's performance. Sylves concludes that how presidents lead, manage federal officials, cope with the media, set the boundaries of civil-military relations, and choose political appointees all contribute to their ability, or inability, to address demands imposed by disasters.

Tierney, Kathleen, et. al. "Metaphors Matter: Disaster Myths, Media Frames, and Their Consequences in Hurricane Katrina." 604 *The ANNALS of the American Academy of Political and Social Science* 57 - 81 (2006).

Disaster researchers have long understood that both the general public and organizational actors tend to believe in various disaster myths. Research shows that the mass media play a significant role in promulgating erroneous beliefs about disaster behaviors, such as looting and social disorganization. Tierney and co-authors examine how, following Hurricane Katrina, the response of disaster victims was framed by the media in ways that greatly exaggerated the incidence and severity of looting and lawlessness.

Waugh, William L., Jr. "The Political Costs of Failure in the Katrina and Rita Disasters." 604 *The ANNALS of the American Academy of Political and Social Science* 10 - 25 (2006).

Hurricanes Katrina and Rita raised serious questions about the capacity of the national emergency management system to handle catastrophic disasters. Poor disaster responses can have serious political consequences for those officials responsible. Waugh discusses the political casualties of the Katrina and Rita disasters and suggests that recent calls to give the military a lead responsibility could broaden the gap between local emergency management imperatives and federal policies.

COASTAL MANAGEMENT

ΚIV.

Campbell, Marnie L., and Chad L. Hewitt. "A Hierarchical Framework to Aid Biodiversity Assessment for Coastal Zone Management and Marine Protected Area Selection." 49 Ocean and Coastal Management 133 - 146 (2006).

Campbell and Hewitt present a two-stage, multi-level data collection framework which can help managers focus on what marine biodiversity collection techniques will meet their individual needs in particular rapid assessment situations. The framework begins with an integrated planning process that leads to a hierarchical approach for selecting biodiversity assessment techniques. The user enters the framework at a hierarchical level that meets their requirements thus eliminating the collection of redundant data.

Cannon, Jonathan. "Checking in on the Chesapeake: Some Questions of Design." 40 University of Richmond Law Review 1131 - 1153 (2006).

Cannon considers whether the Chesapeake Bay Program should be restructured by requiring more centralized decision-making for the Bay. Cannon concludes that the

decentralized, networked character of the program makes it particularly suited to the task of managing a complex and rapidly evolving system.

Dirhamsyah, D. "Indonesian Legislative Framework for Coastal Resources Management: A Critical Review and Recommendation." 49 Ocean and Coastal Management 68 - 92 (2006).

Dirhamsyah discusses the development of a legislative framework for coastal and coral reef resource management in Indonesia. Dirhamsyah outlines several major challenges facing Indonesian legislators and argues that the complicated and inappropriate legal framework currently in place has contributed to serious degradation of coastal and marine resources. Dirhamsyah further suggests that there is a general lack of commitment to sustainable management and development of natural resources in Indonesia.

Fabbri, Karen P. "A Strategic Decision Support Framework for Integrated Coastal Zone Management." 6 International Journal of Environmental Technology and Management 206 - 217 (2006).

In an effort to formalize the integrated coastal zone management decision-making process, Fabbri proposes a framework called SSS to improve policy-relevant decisions regarding the sustainable development of coastal zones. The framework integrates social research methods, scenario development, spatial impact simulation, and the comparison of strategic alternatives.

Glavovic, Bruce C. "Coastal Sustainability - An Exclusive Pursuit?: Reflections on South Africa's Coastal Policy Experience." 34 Coastal Management 111 - 132 (2006).

Glavovic argues that coastal poverty is a pervasive issue that demands a people-oriented, pro-poor approach such as the Sustainable Livelihood model now in use in South African coastal communities. Glavovic highlights the challenges of achieving sustainability while also identifying the driving forces behind coastal poverty.

Johnson, David. "Providing Ecotourism Excursions for Cruise Passengers." 14 Journal of Sustainable Tourism 43 - 54 (2006).

Johnson argues that destinations can do more to offer coastal ecotourism experiences for cruise passengers and thereby secure a more sustainable product. Johnson presents a case study of shore-side excursions currently available to cruise passengers in the Caribbean and concludes that ecotourism excursions must embrace brand management and deliver well-defined promises.

Juda, Lawrence. "The Report of the U.S. Commission on Ocean Policy: State Perspectives." 34 Coastal Management 1 - 16 (2006).

The U.S Commission on Ocean Policy released its final report, An Ocean Blueprint for the 21st Century, calling for regional ecosystem-based management of coastal/ocean areas. The Commission's final report was subject to review by state governors giving them a rare opportunity to voice their ideas on coastal/ocean policy. Juda examines the concerns of state governors on the proposed governance policy. Moss, D., et. al. "The Impacts of Recreational Four-Wheel Driving on the Abundance of the Ghost Crab on a Subtropical Sandy Beach in SE Queensland." 34 Coastal Management 133 - 140 (2006).

Studies were conducted on the beaches of SE Queensland, Australia to determine the effect of four-wheel driving (4WD) on beaches with ghost crabs. The studies proved that on beaches where 4WD was allowed, the ghost crab population was significantly lower than on beaches where 4WD was prohibited. Moss and co-authors conclude that, in order to protect ghost crab populations and biodiversity in these beach areas, there needs to be increased regulation of 4WD activity.

Mueller, Jon A. and Joseph Tannery. "Allen Chair Symposium: State of the Chesapeake Bay in the Twenty-First Century: Article: Why Does the Chesapeake Bay Need Litigators?" 40 *University of Richmond Law Review* 1113 - 1130 (2006).

Mueller and Tannery survey the Chesapeake Bay Foundation's history of litigation and explain why a litigation department is a necessary part of the effort to help the Chesapeake Bay ecosystem.

Nadim, Farhad, et. al. "Management of Coastal Areas in the Caspian Sea Region: Environmental Issues and Political Challenges." 34 *Coastal Management* 153 - 165 (2006). The Caspian Sea is the world's largest lake and possibly the world's third largest reservoir of oil and natural gas. Management of its coastal waters, therefore, requires extraordinary efforts by all littoral states. Nadim and co-authors discuss the geography, history, politics, and environmental issues of the Caspian Sea.

Payet, R. "Decision Processes for Large Marine Ecosystem Management and Policy." 49 Ocean and Coastal Management 110 - 132 (2006).

Payet presents the results of an indicator-based study using the pressure-state-response model carried out among senior decision-makers in the Seychelles government. Payet's results reveal that policy-makers apply the precautionary principle in most situations, are more oriented towards the "command-and-control" approach, and are very sensitive to public opinions.

Peng, Benrong, et. al. "On the Measurement of Socioeconomic Benefits of Integrated Coastal Management (ICM): Application to Xiamen, China." 49 Ocean and Coastal Management 93 - 109 (2006).

Peng and co-authors present a systematic approach for the measurement of overall socioeconomic benefits associated with an integrated coastal management program. The authors apply their analytical model to Xiamen, China, using empirical data from 1992 to 2001 from marine industry and environmental sectors. Their research suggests that the implementation of an ICM program in Xiamen has led to a significant increase in annual socioeconomic benefit.

Salas, F., et. al. "User-friendly Guide for Using Benthic Ecological Indicators in Coastal and Marine Quality Assessment." 49 Ocean and Coastal Management 308 - 331 (2006).

Salas and co-authors present a table which can help managers and authorities of coastal

areas to select the most suitable ecological indicators for their situations. The development of this table, or key, was based not only on theoretical approaches, but also on results from its application. The authors provide recommendations as to the most adequate application of the indices.

Skreslet, Stig, et. al. "Simple Identification of Some Coastal Marine Habitats by Modeling with Sea-Chart Data." 34 Coastal Management 141 - 152 (2006).

Skreslet and co-authors apply a simple numerical model to distinguish permanently oxygenated marine sill basins from periodically anoxic basins in Nordland County, northern Norway. The model produces a Topography Tidal Factor that appears to be an adequate index correlating with empirical field data when the sills have saddle depths less than thirty meters.

Strain, Lisa, et. al. "Marine Administration and Spatial Data Infrastructure." 30 *Marine Policy* 431 - 441 (2006).

Strain and co-authors review the emergence of the spatial dimensions of marine and coastal zone administration. Many countries are developing Spatial Data Infrastructures to improve access and sharing of spatial data, although most initiatives stop at the coastline.

Tran, K.C. "Public Perception of Development Issues: Public Awareness can Contribute to Sustainable Development of a Small Island." 49 Ocean and Coastal Management 367 - 383 (2006).

Many development projects are undertaken in communities where the residents have little input into planning and implementation. This does not have to be the case, however. Tran presents a case study of the local community of Holbox Island, Quintana Roo State, Mexico, which was successfully included in a program for long-term monitoring of coastal pollution. Tran reports on the progress made by the different sectors of the community over a four-year period.

Wallace, Jude, and Ian Williamson. "Registration of Marine Interests in Asia-Pacific Region." 30 *Marine Policy* 207 - 219 (2006).

Some of the oldest and most enduring registration systems were developed to manage private property rights in lands. The registration of marine interests, however, remains underdeveloped. Wallace and Williamson examine marine systems to identify their core components in compliance and regulations. The authors suggests a new model which they argue is capable of providing better management of marine resources through an integrated spatial and text capacity.

Williams, Evan, et. al. "Assessing Socioeconomic Costs and Benefits of ICZM in the European Union." 34 Coastal Management 65 - 86 (2006).

Williams and co-authors discuss the assessment of the costs and benefits associated with Integrated Coastal Zone Management (ICZM) in use across Europe. Their method, developed from survey responses of ICZM initiative managers, separates ICZM into two categories that are used in socioeconomic modeling. The authors conclude that DAMS

concentrated action across Europe to introduce ICZM to coastal states will result in considerable net benefits.

V.

VI.

Kosnik, Lea-Rachel D. "Sources of Bureaucratic Delay: A Case Study of FERC Dam Relicensing." 22 Journal of Law, Economics, and Organization 258 - 288 (2006).

Kosnik investigates the sources for regulatory delay in bureaucratic decision-making, testing regulatory capture, congressional dominance, and bureaucratic discretion theories of agency behavior by examining Federal Energy Regulatory Commission (FERC) relicensing decisions for hydroelectric dams, which can take anywhere from ten months to over sixteen years. Kosnik found that outside interest groups, the legislature, and bureaucratic discretion all affect regulatory processing times. One of the most interesting results was that despite the apparent motivation of environmental interest groups to hasten the relicensing process, overall they end up slowing it down.

Lawrence, Michael P. "Damming Rivers, Damning Cultures." 30 American Indian Law Review 247 - 289 (2005/2006).

Lawrence looks at the World Commission on Dams report which discusses all aspects of the large dam debate, including the rights of indigenous people and the protection of their cultural heritage. Lawrence examines the existing protections for cultural resources in the United States, focusing on the treatment of indigenous cultures during the era of big dam building and cultural resource protection for existing dams.

ECOSYSTEM-BASED MANAGEMENT

Boesch, Donald F. "Scientific Requirements for Ecosystem-based Management in the Restoration of Chesapeake Bay and Coastal Louisiana." 26 *Ecological Engineering* 6 - 26 (2006).

Boesch examines efforts underway to restore and manage the Chesapeake Bay and coastal Louisiana with respect to the four principles of ecosystem-based management: integration of multiple system components and uses; identifying and striving for sustainable outcomes; precaution in avoiding deleterious actions; and adaptation based on experience to achieve effective solutions. Boesch's research suggests that adaptive management is embraced as a central process in coastal Louisiana, but has not formally been implemented in the Chesapeake Bay.

King, J. R., and G. A. McFarlane. "A Framework for Incorporating Climate Regime Shifts into the Management of Marine Resources." 13 *Fisheries Management & Ecology* 93 - 102 (2006).

King and McFarlane argue that it is possible to use an ecosystem-based management approach to incorporate knowledge of climate regime shifts. The authors urge the development of a coherent framework that can be built using existing stock assessment and management activities: ecosystem assessment, risk analyses, adaptive management, and reference points. The authors use two population simulations to illustrate the benefits and tradeoffs of variable regime-specific harvest rates and conclude that coupling ecosystem assessment with ecosystem-based management would allow managers to select appropriate regime-specific harvest rates. VII.

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ENDANGERED SPECIES

Carden, Kristen. "Bridging the Divide: The Role of Science in Species Conservation Law." 30 Harvard Environmental Law Review 165 - 259 (2006).

Carden proposes that the divergence of environmental law and environmental science prohibits the development of effective species conservation policies. Carden argues that conservation models must acknowledge the uncertainty in science and provides a review of the 2001 Klamath Basin controversy to illustrate the need for a new approach to species conservation policy.

Goble, Dale D., and J. Michael Scott. "Recovery Management Agreements Offer Alternative to Continuing ESA Listings." 31 *Fisheries* 35 - 36 (2006).

Goble and Scott offer a means of securing ongoing conservation management of species after delisting under the Endangered Species Act - the Recovery Management Agreement (RMA). An RMA would be an enforceable contract between the federal wildlife agency and another entity with the authority and financial resources to provide the necessary management into the foreseeable future, such as a state or local government. RMAs could include both a set of biological standards and a set of legal requirements that a conservation management plan would have to satisfy.

Hagen, Amy N. and Karen Hodges. "Resolving Critical Habitat Designation Failures: Reconciling Law, Policy, and Biology." 20 *Conservation Biology* 399 - 407 (2006).

Under the U.S. Endangered Species Act, listed species are guaranteed not only physical protection but also habitat protection. Hagen and Hodges examine the failure of the U.S. Fish and Wildlife Service to routinely designate critical habitat by taking advantage of the legal exceptions of "not prudent" or "not determinable." Such action has led to numerous lawsuits to force the agency to identify critical habitat areas for endangered species. Hagen and Hodges conclude that the habitat guidelines need to be changed so that habitat designation can be determined on an individual species basis.

Male, Tim. Commentary. "Legislating Peer Review in the Endangered Species Act." 26 *Risk Analysis* 33 - 35 (2006).

In 2004, Congressman Walden (Oregon) sponsored a bill titled "the Endangered Species Data Quality Act of 2004." If passed, the bill would have required the Secretaries of Interior and Commerce to appoint three qualified individuals to review the "scientific information and analyses" used for every recovery plan, designation of species, or jeopardy determination. Male discusses a number of issues surrounding this legislation, including the importance of providing a clear charge for reviewers, need to avoid a "one size fits all" approach, selection of reviewers, and agency bias.

Mansfield, Becky and Johanna Haas. "Scale Framing of Scientific Uncertainty in Controversy over the Endangered Steller Sea Lion." 15 *Environmental Politics* 78 - 94 (2006).

The political debate surrounding the management of the endangered Steller sea lion in the North Pacific Ocean is driven by scientific uncertainty about the cause of the decline and lack of recovery. Different groups frame the problem at different scales. VIII.

IX.

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For example, federal regulators focus on localized interactions, environmental organizations focus on the entire fishery management regime, and the fishing industry focuses on climate change. Mansfield and Haas argue that using scale as a framing device is a powerful political strategy for dealing with uncertainty, because focusing on particular scales presupposes certain solutions while foreclosing others.

Mooney, Jillian K. "Confrontation on Sandy Neck: Public Road Access Rights, Endangered Species Protections, and Municipal Liability." 33 Boston College Environmental Affairs Law Review 149 - 173 (2006).

In an effort to protect critical habitats of piping plovers and other threatened species, Barnstable, Massachusetts regulates vehicle access to Sandy Neck beach and nearby cottages. The regulations have prompted cottage owners to claim a regulatory taking of their access rights. Mooney offers suggestions which could allow the town to protect the species without taking the cottage owners' access rights.

ENVIRONMENTAL ASSESSMENTS

Davis, Wendy B. "The Fox is Guarding the Henhouse: Enhancing the Role of the EPA in FONSI Determinations Pursuant to NEPA." 39 Akron Law Review 35 - 72 (2006).

Davis proposes that environmental assessments should not be left to the federal government, but, instead, to organizations with environmental expertise. Davis suggests that agencies such as the Environmental Protection Agency should have the authority to evaluate a Finding of No Significant Impact and require preparation of an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act.

Driesen, David M. "Is Cost-Benefit Analysis Neutral?" 77 University of Colorado Law Review 335 - 404 (2006).

Driesen discusses whether cost-benefit analysis used for environmental, health, and safety protection has a neutral effect. After examining a representative data set from recent Office of Management and Budget (OMB) reviews, an examination of OMB prompt letters, and a literature review, Driesen concludes that the analysis has frequently proven anti-environmental in its application.

ENVIRONMENTAL LAW

Abate, Randall S. "Dawn of a New Era in the Extraterritorial Application of U.S. Environmental Statutes: A Proposal for an Integrated Judicial Standard Based on the Continuum of Context." 31 *Columbia Journal of Environmental Law* 87 - 137 (2006).

Abate discusses the extraterritorial application of U.S. environmental laws before and after the D.C. Circuit Court of Appeals' landmark decision in *Environmental Defense Fund, Inc. v. Massey* in 1993. Abate pays particular attention to two significant cases pending in 2006, *Pakootas v. Teck Cominco Metals, Ltd.* and *Friends of the Earth, Inc. v. Watson.* He argues that these cases represent different points along the continuum of territories, as identified in *Massey.* At one end is the U.S., where U.S. statutes naturally apply, and at the other foreign nations, where clear legislative intent to apply is required. In the middle are "global commons," areas in which a court may or may not find extraterritorial application appropriate.

X.

Lazarus, Richard J. "Congressional Descent: The Demise of Deliberative Democracy in Environmental Law." 94 Georgia Law Journal 619 - 681 (2006).

Lazarus examines how Congress is affecting environmental law. Lazarus warns of the implications for environmental law due to the increasing dominance of the appropriations process in congressional lawmaking, identifies the major causes of these developments, and concludes by offering some possibilities for congressional reform.

Manaster, Kenneth A. "Symposium: The Jurisprudence of Justice Stevens: Panel III: Administrative Law/Statutory Interpretation: Justice Stevens, Judicial Power, and the Varieties of Environmental Litigation" 74 Fordham Law Review 1963 - 2008 (2006).

Manaster reflects on the environmental movement's early hopes for an active judicial contribution to environmental protection. He notes that the Supreme Court has decided many environmental cases through the general doctrines of administrative law and statutory interpretation. Manaster concludes by asking whether Stevens and other judges should be doing something more for environmental protection.

Sum Ping, Joanne. "A New Approach to Extraterritorial Application of Environmental Statutes?: Uncovering the Effects of Plan Colombia" 31 Columbia Journal of Environmental Law 139 - 170 (2006).

Sum Ping discusses legal theories under which U.S. environmental statutes could apply to other countries. Specifically, the author discusses "Plan Colombia," a plan for the fumigation of illicit crop fields, and how an "effects test" could be used to apply domestic law to the project. Under the effects test, the National Environmental Policy Act and the Endangered Species Act may obligate the Department of State to create a report of the environmental impacts of the activities that it funds in Colombia.

Wexler, Jay D. "The (Non)Uniqueness of Environmental Law." 74 George Washington Law Review 260 - 316 (2006).

Due to the unique subject matter and the critical problems of environmental law, Wexler believes that courts should treat it as an area of law distinct from both general law and the specific areas of law that parallel it. Wexler describes and evaluates seven unique models that would help federal courts in deciding environmental law cases.

FISHING ENTITIES IN INTERNATIONAL LAW

Djalal, Hasjim. "The Emergence of the Concept of Fishing Entities: A Note." 37 Ocean Development and International Law 117 - 121 (2006).

Traditionally, it is generally only a sovereign state that can become a subject of international law. Recent developments, however, have expanded the notion of the subjects of international law to also include, among others, international organizations as well as various other forms of "entities" including most recently "fishing entities." (*Abstract courtesy of Ocean Development and International Law*).

Edeson, William. "Some Future Directions for Fishing Entities in Certain Regional Fisheries Management Bodies." 37 Ocean Development and International Law 245 - 264 (2006).

Edeson considers the prospects for increased participation for fishing entities in certain regional fisheries management bodies. He considers which method of addressing this is

the most feasible: amendment; modifying a treaty; de facto amendment; or the adoption of resolutions. Edeson considers the special situation of the Indian Ocean Tuna Commission (IOTC), which is within the United Nations Food and Agriculture Organization (FAO) framework, and the steps needed to enable the IOTC to leave the FAO framework in order to facilitate a greater participation in its activities. (*Abstract courtesy of Ocean Development and International Law*).

Ho, Peter S. C. "The Impact of the U.N. Fish Stocks Agreement on Taiwan's Participation in International Fisheries Fora." 37 Ocean Development and International Law 133 - 148 (2006).

Ho discusses Taiwan's participation in various international fisheries fora before and after the adoption of the U.N. Fish Stocks Agreement, emphasizing the pragmatic approach taken by Taiwan in gaining recognition in a number of tuna management organizations as a Commission Member. (*Abstract courtesy of Ocean Development and International Law*).

Hu, Nien-Tsu Alfred. "Fishing Entities: Their Emergence, Evolution, and Practice from Taiwan's Perspective." 37 Ocean Development and International Law 149 - 183 (2006).

The 1995 U.N. Fish Stocks Agreement was intended to promote effective implementation of the provisions of the U.N. Convention on the Law of the Sea concerning straddling fish stocks and highly migratory fish stocks. The Agreement has provided an opportunity for Taiwan, a major fishing nation, to gain formal access to regional fisheries management organizations through the creation of a new legal term and concept of "fishing entities." Hu reviews the references to "fishing entities" in the international literature before the final adoption of the U.N. Fish Stocks Agreement and the way that Taiwan read the "window of opportunity" provided by this Agreement. Hu then presents the evolution of the practice respecting the term of "fishing entities" in various regional fisheries management organizations. Finally, Hu provides an analytical assessment of the evolution and future development of the term and concept of "fishing entities." (*Abstract courtesy of Ocean Development and International Law*).

Kuan-Hsuing Wang, Dustin. "Taiwan's Participation in Regional Fisheries Management Organizations and the Conceptual Revolution on Fishing Entity: The Case of the IATTC." 37 Ocean Development and International Law 209 - 219 (2006).

For the past two decades, responsible fisheries have been promoted in order to manage and conserve marine living resources. It is important to include all those engaged in fishing in attaining these goals. Due to its international status, it is difficult for Taiwan to participate in the regional fisheries management organizations established to deal with straddling and highly migratory fish stocks. Wang focuses on Taiwan's experience with the Inter-American Tropical Tuna Commission (IATTC) and concludes that the international legal capacity of a fishing entity is approaching a "state-like entity" in terms of enjoying rights and having responsibilities. Moreover, the application of "fishing entity" to Taiwan should lead to a strengthening of the effectiveness of the management and conservation mechanism of the IATTC. (*Abstract courtesy of Ocean Development and International Law*). Lodge, Michael W. "The Practice of Fishing Entities in Regional Fisheries Management Organizations: The Case of the Commission for Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean." 37 Ocean Development and International Law 185 - 207 (2006).

The adoption of the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific (WCPF Convention) in September 2000 marked the beginning of a new era in international fisheries management. Lodge provides a commentary on the negotiations which led to the conclusion of the relevant provisions of the WCPF Convention and discusses the legal basis for the participation of Taiwan in the Convention. The conclusion drawn is that the WCPF Convention is a powerful precedent for the progressive integration of Taiwan, as a major fishing entity, into the global system of regional fisheries management. (*Abstract courtesy of Ocean Development and International Law*).

Sheng-Ti Gau, Michael. "The Practice of the Concept of Fishing Entities: Dispute Settlement Mechanisms." 37 Ocean Development and International Law 221 - 243 (2006).

Although the term and concept of fishing entities is in the 1995 U.N. Fish Stocks Agreement (UNFSA), it is through the regional fishery management organizations (RFMOs) that fishing entities may receive benefits and rights to fish and other matters. Three RFMOs (the Commission for the Conservation of Bluefin Tuna (CCSBT), the Inter-American Tropical Tuna Commission (IATTC), and the Commission on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC) have gone through the process of either amending or redrafting their constituent instruments or adopting a specific resolution for the purposes of implementing the UNFSA. Sheng-Ti Gau reviews how and to what extent these three RFMOs have incorporated fishing entities into the constituent instruments by examining the various mechanisms for settling disputes involving fishing entities. (*Abstract courtesy of Ocean Development and International Law*).

Tsamenyi, Martin. "The Legal Substance and Status of Fishing Entities in International Law: a Note." 37 Ocean Development and International Law 123 - 131 (2006).

A number of international fisheries instruments, starting with the U.N. Fish Stocks Agreement of 1995, have made provisions for the participation of fishing entities in the conservation and sustainable use of the world's fisheries resources. These instruments have created rights and obligations for fishing entities which are, in many respects, almost identical to those accorded to states. Although this development does not necessarily imply that fishing entities are states, the conclusion is inescapable that such entities are new subjects of international law in so far as international fisheries management is concerned. (*Abstract courtesy of Ocean Development and International Law*).

FISHERIES MANAGEMENT

XI.

Aiken, Karl, et. al. "Managing Jamaica's Queen Conch Resources." 49 Ocean and Coastal Management 332 - 341 (2006).

Since its inception in 1990, Jamaica's industrial fishery for queen conch has grown

rapidly and may now be on the verge of collapse due to a variety of factors including overfishing, poor enforcement, and foreign poaching. Aiken and co-authors examine the management problems of the conch fishery and suggest that increased roles for the coast guard, continued quota reductions, and the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) may be the best options for sustainability.

Beem, Betsi. "Planning to Learn: Blue Crab Policymaking in the Chesapeake Bay." 34 Coastal Management 167 - 182 (2006).

The blue crab fishery is the most important commercial fishery in the Chesapeake Bay. Since the late 1980s, Bay-wide policymaking for the fishery has developed through two distinct processes - the Fishery Management Plan Workgroup and Bi-State Blue Crab Advisory Committee. Beem examines these institutions to determine why the Advisory Committee was more successful in answering key management questions.

Bess, Randall. "New Zealand Seafood Firm Competitiveness in Export Markets: The Role of the Quota Management System and Aquaculture Legislation." 30 *Marine Policy* 367 - 378 (2006).

New Zealand's quota management system (QMS) was implemented in 1986 to improve efficiency within the over-capitalized inshore fisheries and provide incentives for developing the deepwater fisheries. Bess outlines the results of a research project that involved four medium- to large-sized, highly vertically integrated New Zealand seafood firms which was designed to identify the firms' sources of competitiveness in export markets and the process the firms used to develop these sources. Bess's research revealed that the basis of seafood firm competitiveness is the security of supply to the fisheries resource provided by the QMS and aquaculture legislation.

Bhat, Mahadev G., and Ramachandra Bhatta. "Mechanization and Technical Interactions in Multi-Species Indian Fisheries: Implications for Economic and Biological Sustainability." 30 *Marine Policy* 237 - 248 (2006).

The joint capture of multiple species by multiple fleets results in technical and economic interactions between fleets. Bhat and Bhatta developed a bioeconomic model that incorporates interrelationships between fleets for a representative fishery in India. The authors analyze the impacts of overcapitalization on the bioeconomic sustainability of the fishery and conclude that a continuation of the current fishing effort will deplete the resource. Bhat and Bhatta suggest, however, that an optimal effort reallocation between fleets could increase profits substantially.

Boyd, Heather, and Anthony Charles. "Creating Community-based Indicators to Monitor Sustainability of Local Fisheries." 49 Ocean and Coastal Management 237 -258 (2006).

Boyd and Charles present a systematic process to create frameworks of indicators for monitoring sustainable development in fisheries at the local level. Indicators are selected through a three-stage process: first, potential indicators are identified; second, the set is refined for suitability within a specific local context; and third, indicators are evalu-

ated according to data-specific criteria. The research results suggest that indicators suitable at large geographic scales are often unsuitable for use at a local scale.

Branch, George M., et. al. "Fish Stocks and their Management: The Changing Face of Fisheries in South Africa." 30 *Marine Policy* 3 - 17 (2006).

Preserving fisheries in South Africa has been an ongoing process over the last ten years. Branch explains that in order to protect the economic stability of these fisheries, equity and sustainability must be achieved. Several new initiatives reveal an increased interest in co-management, ecosystem-based management, and marine protected areas. Although most stocks are showing signs of recovery, Branch argues that further steps must be taken to achieve increased cooperation for the success of the program.

Branch, Trevor A., et. al. "Replacing Trip Limits with Individual Transferable Quotas: Implications for Discarding." 30 *Marine Policy* 281 - 292 (2006).

In the British Columbia groundfish fishery, full observer coverage and the accounting of discard mortality of marketable fish in landing limits resulted in low discard fractions. When individual transferable quotas were introduced, discard fractions decreased even further. In contrast, the U.S. West Coast groundfish fishery, which is regulated by bimonthly landing limits, has higher discard fractions. Branch and co-authors contend that full observer coverage, quotas, and mortality accounting would reduce the West Coast discard fractions, but caution that severe catch restrictions on overfished species would limit reductions.

Crosoer, David et. al. "The Integration of South African Fisheries into the Global Economy: Past, Present, and Future." 30 *Marine Policy* 18 - 29 (2006).

Crosoer and co-authors argue that the integration of the South African fisheries into the global economy has operated as a powerful constraint on post-apartheid fisheries reform. After apartheid, South Africa gained greater access to global markets. The increase in exports enabled the state and nascent black capital to maximize their returns from fisheries through cost recovery and share purchases. The authors argue that the protection and promotion of the fisheries' "international competitiveness" has provided a cover for the refusal of populist redistribution demands and special treatment for black small capital. The authors present as a case study the hake industry which is seeking certification as a "sustainable fishery" through the Marine Stewardship Council.

Dawson, Robert. "Vertical Integration in the Post-IFQ Halibut Fishery." 30 Marine Policy 341 - 346 (2006).

The U.S. halibut fishery quota program was designed to maintain the small-scale vessel nature of the fishery in an attempt to avoid increased vertical integration. Dawson reports on the changes in the vertical structure of the halibut fishery. Dawson's research reveals that in this case vertical integration was avoided and market transactions actually increased.

Erceg, Diane. "Deterring IUU Fishing through State Control over Nationals." 30 *Marine Policy* 173 - 179 (2006).

Erceg argues that additional jurisdiction is needed to control Illegal, Unreported, and

Unregulated (IUU) fishing. Erceg discusses the issues currently facing Regional Fisheries Management Organizations, including the challenges of creating and enforcing legal and administrative measures.

Gilman, Eric L., et. al. "Fleet Communication to Abate Fisheries Bycatch." 30 *Marine Policy* 360 - 366 (2006).

Fleet communication systems report near real-time observations of bycatch hotspots to substantially reduce fleet-wide capture of protected bycatch species. Gilman and coauthors present case studies of the fleet communication programs of the U.S. North Atlantic longline swordfish fishery, North Pacific and Alaska trawl fisheries, and Alaska demersal longline fisheries. The authors' research supports the inference that these three fleet communication programs substantially reduced fisheries bycatch and provided economic benefits that greatly outweighed operational costs.

Gómez, Silvia, et. al. "The Decline of the Artisanal Fisheries in Mediterranean Coastal Areas: The Case of Cap de Creus (Cape Creus)." 34 Coastal Management 217 - 232 (2006).

Gómez and co-authors examine the sociocultural, economic, and environmental causes of the decline of the artisanal fisheries along the rocky coast of Cape Creus over the past decades. The authors highlight how the establishment of a marine reserve in 1998 could not reverse the observed decline and call for the integration of a fishery management plan into a coastal management plan.

González Laxe, Fernando. "Transferability of Fishing Rights: The Spanish Case." 30 *Marine Policy* 379 - 388 (2006).

Fishing legislation in Spain has steadily been moving towards the implementation of individual transferable fishing rights with regard to industrial fishing in community waters. More traditional access systems have remained in place for coastal fishing. González Laxe highlights the dynamics experienced by the Spanish fleet and analyzes the mobility and volatility of fishing rights and their territorial consequences.

Håkon Hoel, Alf, and Ingrid Kvalvik. "The Allocation of Scarce Natural Resources: The Case of Fisheries." 30 *Marine Policy* 347 - 356 (2006).

Håkon Hoel and Kvalvik address the question of allocation of living marine resources among countries, examining the principles for distribution emanating from the global rules for ocean governance, reviewing state practice, and considering some distributional effects of conservation measures. The authors conclude that it is difficult to ascertain the influence of the distribution principles with any greater degree of precision as a measure of politics is always at play.

Hauck, Maria et. al. "Fisheries Compliance in South Africa: A Decade of Challenges and Reform 1994-2004." 30 *Marine Policy* 74 - 83 (2006).

Hauck and co-authors examine the issues and improvements associated with South African fisheries. The authors examine two case studies that have been key in restructuring fisheries compliance and argue that, in addition to increasing enforcement, the Volume 5, Number 1

government needs to initiate alternative strategies to increase the level of compliance in the long run.

Henquinet, Jeffrey W., and Tracy Dobson. "The Public Trust Doctrine and Sustainable Ecosystems: A Great Lakes Fisheries Case Study." 14 New York University Environmental Law Journal 322 - 373 (2006).

Henquinet and Dobson outline the public trust doctrine and explain how it relates to fishery management. The authors believe that the doctrine could help Great Lakes fisheries by protecting public access to fishing, guarding against environmental degradation, and providing a role for citizens in fishery management decision-making. The authors suggest that a uniform application of the doctrine is needed among Great Lake states, Canada, and Native American tribes.

Hunt, Colin. "Concern for Southern Ocean Fish Stocks and Bird Populations." 30 *Marine Policy* 357 - 359 (2006).

Hunt highlights the challenges faced by parties to the Commission for the Conservation of Southern Bluefin Tuna. The probability of stock recovery under present catch quotas is quite low and seabird kill is now a major concern. Several species of endangered Albatross could be in danger of extinction unless improved methods of bird exclusion are adopted in the longline fishery.

Isaacs, Moenieba. "Small-scale Fisheries Reform: Expectations, Hopes and Dreams of 'a Feel Better for all.'" 30 *Marine Policy* 51 - 59 (2006).

With a government that is more focused on economic growth then redistribution, small South African commercial fisheries have been faced with many challenges, including lack of start-up capital and business skills. Isaacs argues that policy reforms should be implemented to create an environment that will be productive for small-scale fishing industries.

Kaiser, Michael J., and Gareth Edwards-Jones. "The Role of Ecolabeling in Fisheries Management and Conservation." 20 Conservation Biology 392 - 398 (2006).

The Marine Stewardship Council (MSC) regulates the ecolabeling of fisheries products to promote sustainable fishery practices. Eleven fisheries have attained full certification so far and seven are under review. Kaiser and Edwards-Jones argue that despite great potential, a range of issues may limit the wider uptake of MSC ecolabeled products, including a general lack of consumer concern for marine fishes and difficulties with quality assurance.

Kang, Joon-Suk. "Analysis on the Development Trends of Capture Fisheries in North-East Asia and the Policy and Management Implications for Regional Cooperation." 49 *Ocean and Coastal Management* 42 - 67 (2006).

The Yellow/East China Sea and the East Sea are semi-enclosed seas facing a host of environmental problems including depletion of fish stocks and large-scale deterioration of the marine environment. Kang argues that regional cooperation based on the 1982 U.N. Convention on the Law of the Sea should be given top priority as the fishery resources in these seas cannot be managed effectively without close cooperation among the coastal states.

Labrosse, Pierre, et. al. "Assessing the Sustainability of Subsistence Fisheries in the Pacific: The Use of Data on Fish Consumption." 49 Ocean and Coastal Management 203 - 221 (2006).

The coastal fisheries in Pacific island countries are characterized by a predominance of subsistence catches which are difficult to quantify. In 1997 - 1998, a consumer survey conducted in the Northern Province of New Caledonia made it possible to indirectly estimate subsistence fishing production. Labrosse and co-authors contend that this fish consumption survey could assist in the design of subsistence fisheries monitoring programs.

Layzer, Judith. "Fish Stories: Science, Advocacy, and Policy Change in New England Fishery Management." 34 *Policy Studies Journal* 59 - 80 (2006).

Judith Layzer explores the successful recovery of New England fisheries and argues that the new, more protective fisheries management regime is a result of lawsuits brought by environmentalists. The lawsuits highlighted the differences between what was required by the governing statute and what fisheries managers were actually doing. Layzer contends that the environmentalists were so effective for two reasons: credible scientific data on the relationship between fishing and the health of fish stocks and an explicit conservation requirement in the laws governing fishery management.

Lee, Kwang Nam, et. al. "Recent Developments in Korean Fisheries Management." 49 Ocean and Coastal Management 355 - 366 (2006).

In 2001, the Korean government introduced self-control management into its fisheries. Lee and co-authors analyze the characteristics of seventy-nine model communities which have introduced Self-control Management Projects. The authors also provide alternative policies to alleviate some of the problems that have arisen in the different communities.

Mason, Richard, and Warwick Gullett. "Cancellation Provisions in Australia's Commonwealth-managed Fisheries." 30 *Marine Policy* 270 - 280 (2006).

Following a recent review of Commonwealth fisheries policy, the Australian government agreed to examine the implications of replacing the government's power to cancel fishing concessions for non-compliance with management measures that increased financial penalties. Mason and Warwick conclude that there are no compelling reasons for removing the cancellation provisions from the Fisheries Management Act. The authors found that these provisions provide a powerful deterrent to non-compliance unlikely to be matched by financial penalties alone.

Meltzer, Lorayne, and Jason Oliver Chang. "Export Market Influence on the Development of the Pacific Shrimp Fishery in Sonora, Mexico." 49 Ocean and Coastal Management 222 - 235 (2006).

The Pacific shrimp fishery is the most economically important in Mexico, but it is also the fishery with the greatest ecological impact. Meltzer and Chang describe the histor-

ical development, current status, ecological impacts, and the open ocean trawling component of the shrimp fishery in the Sonoran waters of the Gulf of California. The authors trace the economic factors influencing the development of trawler-based shrimp fishing, with a focus on the port of Guaymas. A review of economic factors indicates that the decision-making process is driven by export markets and does not adequately consider the local ecosystems and fishing communities.

Mitchell, Andrew J., and Anita M. Kelly. "The Public Sector Role in the Establishment of Grass Carp in the United States." 31 *Fisheries* 113 - 121 (2006).

The U.S. Fish and Wildlife Service Fish Farming Experimental Station at Stuttgart, Arkansas was the first institution to import grass carp into the United States beginning in 1963. During the following decades, the introduction and stocking of grass carp was strongly promoted as an effective biological control for problematic aquatic weeds. Mitchell and Kelly discuss the role federal and state agencies and universities played in the introduction and early spread of grass carp in the United States.

Nielsen, Jesper R., and Anne-Sofie Christensen. "Sharing Responsibilities in Danish Fisheries Management-experiences and Future Directions." 30 *Marine Policy* 181 - 188 (2006).

Nielsen and Christensen investigate the dynamics and constraints of the process of devolution of responsibilities of fisheries management in general and in relation to Danish demersal fisheries by examining the following questions: What are the important factors to consider with respect to sharing responsibilities in fisheries management; how can this delegation and/or devolution of responsibilities be institutionalized? And what kind of decisions should be delegated to stakeholders and to whom?

Nielson, Jesper R., et. al. "Transformation of South African Industrial Fisheries." 30 *Marine Policy* 43 - 50 (2006).

The need for socio-economic equality is a major concern within the South African industrial fisheries. The Marine Living Resource Act of 1998 emphasized the reallocation of fishing rights among stakeholders, but according to Neilson and co-authors the government has not addressed the issue from an economical perspective. The authors contend that the proposed plan will become locked in a "path dependency" that will eventually undermine the intentions of the transformation.

Patrick, Wesley S., et. al. "Hatchery Programs, Stock Enhancement, and Cost Effectiveness: A Case Study of the Albemarle Sound/Roanoke River Stocking Program 1981 - 1996." 30 *Marine Policy* 299 - 307 (2006).

Managers commonly use fish hatchery programs to enhance depleted fish populations. While the public highly values these programs, their effectiveness is often questionable. Patrick and co-authors investigate the economic and ecological effectiveness of the Albemarle Sound/Roanoke River striped bass stocking program from 1981 to 1996.

Potts, Tavis. "A Framework for the Analysis of Sustainability Indicator Systems in Fisheries." 49 Ocean and Coastal Management 259 - 280 (2006).

Sustainability Indicator Systems have been developed as a way to apply and interpret

ecosystem-based and precautionary approaches to fisheries management. Potts explores a policy-based, holistic model of an indicator system consisting of inputs, core structures, and outputs as a basis for an assessment framework. Potts applies his framework to two recent reporting systems: the Australian government's Commonwealth Sustainable Fisheries Assessments and the Marine Stewardship Council initiative.

Quigley, Jason T., and David J. Harper. "Effectiveness of Fish Habitat Compensation in Canada in Achieving No Net Loss." 37 *Environmental Management* 351 - 366 (2006). In an effort to prevent further loss of fish habitat in Canada, Fisheries and Oceans Canada enacted the habitat provisions of the Fisheries Act in 1976. In 1986, the agency instituted the policy that a "harmful alteration, disruption, or destruction to fish habitat" (HADD) could not occur unless authorized with legally binding compensatory habitat to offset the HADD. Quigley and Harper evaluated the effectiveness of habitat compensation projects in achieving no net loss of habitat at sixteen sites across Canada and found that approximately 63 percent of projects resulted in net losses. The authors conclude that improvements in both compensation science and institutional approaches are needed to achieve Canada's goal of no net loss of fish habitat.

Ruddle, Kenneth et. al. "The Management of Inshore Marine Recreational Fishing in Japan." 34 *Coastal Management* 87 - 110 (2006).

Ruddle and co-authors discuss many of the challenges surrounding Japan's management of recreational fisheries, such as sparse monitoring and weak sanctions. In response to these issues, the authors propose a national management system within the existing Fisheries Cooperatives for marine recreational fishing licenses that would include recreational fishing.

Satria, Arif, et. al. "Contractual Solution to the Tragedy of Property Right in Coastal Fisheries." 20 *Marine Policy* 226 - 236 (2006).

Satria and co-authors analyze how private property regimes can co-exist with common property regimes in a coastal area. The authors' conclusions are based on a case study in two villages in West Lombok, Indonesia, where pearl-culture exists as a private property resource within a common property regime. The authors admit that their findings are site-specific and that the program may not be sustainable without new institutional arrangements combining formal and informal rules and involving both formal and informal authorities.

Smith, Samantha Renee. "The Current Fate of the Lobster Fishery and a Proposal for Change." 40 New England Law Review 663 - 702 (2006).

Smith discusses the overcapitalization of the lobster fishery, addressing historical management of the fishery under the Fishing Conservation and Management Act of 1976 and under the Atlantic Coastal States Marine Fisheries Commission. Smith proposes using an individual transferable quota system to help with the management of the American lobster fishery.

Søreng, Siri Ulfsdatter. "Moral Discourse in Fisheries Co-management: A Case Study of the Senja Fishery, Northern Norway." 49 Ocean and Coastal Management 147 - 163 (2006).

Søreng discusses how the outcome of management processes in a fisheries co-management system in northern Norway depends on communicative interaction between the fishermen. Søreng argues that involving user-groups is not enough to legitimize regulations, but that legitimacy also depends on the nature of communication during the decision-making process.

Sowman, Merle. "Subsistence and Small-scale Fisheries in South Africa: A Ten-year Review." 30 *Marine Policy* 60 - 73 (2006).

In South Africa, the government attempted to support small-scale fisheries by designating certain coastal areas for their exclusive use. Sowman explains that although there have been some improvements in this area the lack of resources available to help such fisheries needs to be addressed. Sowman argues that laws are needed that pertain to natural resource management and poverty alleviation and the allocation system and the co-management relationship between the government and these fishers must be reexamined.

Standal, Dag. "The Rise and Decline of Blue Whiting Fisheries - Capacity Expansion and Future Regulations." 30 *Marine Policy* 315 - 327 (2006).

Standal contends that the blue whiting fishery in the North Atlantic is out of control and is in real danger of collapse. One of the driving forces in the decline of the blue whiting fishery is the inability of the coastal states in the region to agree on the distribution of the migrating stock. Standal presents the management conflicts within the international fisheries for blue whiting and the driving forces behind the capacity increase in the Norwegian blue whiting fleet. Standal concludes by considering whether regional management organizations like the North East Atlantic Fisheries Committee need to play a more prominent role in the management of migratory resources.

Stewart, James, et. al. "The Demise of the Small Fisher? A Profile of Exiters from the New Zealand Fishery." 30 *Marine Policy* 328 - 340 (2006).

New Zealand manages its significant fisheries through market-based quota management systems. Over 3,000 fishers, predominantly small-scale fishers, have exited the industry since the introduction of this quota regime in 1986. Stewart and co-authors profile a sample of the exiters and provide information on their scale, typical methods of fishing, importance of time and exit price to the exit decisions, and post-exit employment outcomes.

Townsend, Ralph E., et. al. "Design Principles for Individual Transferable Quotas." 30 *Marine Policy* 131 - 141 (2006).

Townsend and co-authors identify methods to minimize the transaction costs of individual transferable quota (ITQ) institutions. Townsend and co-authors argue that by separating the ITQ rights into separate components and creating a self-government controlled by the owners, governments can decrease transaction costs.

Trondsen, Torbjorn, et. al. "Towards a Market-oriented Management Model for Straddling Fish Stocks." 30 *Marine Policy* 199 - 206 (2006).

The management of straddling fish stocks is politically complex and negotiations frequently fail as parties focus upon their own interest rather than the collective good. Trondsen and co-authors examine the current impasse over blue whiting in the North Atlantic. The authors discuss the development of this fishery and call for the construction of a new model for resource management specifically intended to contend with the problems of straddling stocks. Trondsen and co-authors propose a Mutlinational Resource Cooperative which could auction quotas to stakeholders and control and enforce the total allowable catch.

Van Sittert, L., et. al. "Benchmarking the First Decade of Post-apartheid Fisheries Reform in South Africa." 30 *Marine Policy* 96 - 100 (2006).

Van Sittert and co-authors discuss the improvements made in South African fisheries as a result of legislative efforts. They conclude that in the process of reallocating the fishing access rights between existing companies and new ones that traditionally independent fishers are being denied legitimate access to waters they depend on.

Vinson, Anna. "Deep Sea Bottom Trawling and the Eastern Tropical Pacific Seascape: A Test Case for Global Action." 18 *Georgetown International Environmental Law Review* 355 - 388 (2006).

Vinson examines the ecological and environmental impacts of deep-sea bottom trawling and past efforts to curb the practice. Vinson proposes that an embargo on deep-sea bottom trawling in the Eastern Tropical Pacific Seascape would benefit the area and provide an effective model for international action.

Watanuki, Naohiko, and Benjamin J. Gonzales. "The Potential of Artificial Reefs as Fisheries Management Tools in Developing Countries." 78 *Bulletin of Marine Science* 9 - 19 (2006).

Watanuki and Gonzales examine the introduction of artificial reefs as a means to restore fisheries resources around the world. Such fisheries management tactics require international cooperation among developing countries. Watanuki and Gonzales conclude that in order for fisheries to benefit from artificial reefs the responsibilities of fisheries management should be shared equally between fishing communities and governments.

Wilson, James A. "Matching Social and Ecological Systems in Complex Ocean Fisheries." 11 Ecology and Society 9 - 22 (2006).

Wilson considers ocean fisheries as complex adaptive systems and addresses the question of how human institutions might be best matched to their structure and function. Wilson argues that the mismatch of ecological and management scale leads to fishing rights and strategies that tend to erode the underlying structure of populations and the system. Wilson contends that a successful transition to ecosystem-based management will require institutions better able to economize on the acquisition of feedback about the impact of human activities.

Witbooi, Emma. "Law and Fisheries Reform: Legislative and Policy Developments in South African Fisheries over the Decade 1994 - 2004." 30 *Marine Policy* 30 - 42 (2006).

In response to a Constitution enactment in 1996, the South African government created a new fisheries policy that promotes equity and sustainability. As the South African fishing industry begins to transform under these legal guidelines, Witbooi argues that proactive legal measures are vital to securing the sustainable use of domestic marine resources.

Yu, Yunjun, and Yongtong Mu. "The New Institutional Arrangements for Fisheries Management in Beibu Gulf." 30 *Marine Policy* 249 - 260 (2006).

China and Vietnam recently signed two bilateral agreements to deal with maritime boundaries and fisheries in the Beibu Gulf. The agreements entered into force on June 30, 2004. Yu and Mu introduce the new arrangements for fisheries management, focusing on the Joint Fishery Committee. The authors analyze the challenges China will confront after these institutional changes take place and draw a comparison among the three effectual fisheries agreements signed by China with Japan, South Korea, and Vietnam.

XII. INTERNATIONAL ORGANIZATIONS

Seymour, Jillaine. "The Earl Snyder Lecture in International Law: The International Tribunal for the Law of the Sea: A Great Mistake?" 13 *Indiana Journal of Global Legal Studies* 1 - 35 (2006).

The International Tribunal for the Law of the Sea was created by the U.N. Convention on the Law of the Sea to act as a standing international tribunal. Since its inception, the Tribunal has heard a very limited number and scope of cases, despite its extensive jurisdiction. Seymour offers recommendations for ways that the Tribunal could expand its competence and relevance and contribute to the interpretation of the Convention.

Suarez de Vivero, Juan L., et. al. "Maritime Europe and EU enlargement. A Geopolitical Perspective." 30 *Marine Policy* 167 - 172 (2006).

As the European Union (EU) continues to grow, so does the EU's status as a player in maritime affairs. While the new political map is being drawn up for the EU, Suarez de Vivero and co-authors question how the new boundaries will affect Europe's maritime condition and whether it will create opportunities or simply exacerbate existing problems.

Skjaerseth, Jon B. "Protecting the North-East Atlantic: Enhancing Synergies by Institutional Interplay." 30 *Marine Policy* 157 - 166 (2006).

Skjaerseth examines the relationships between three international institutions on marine pollution in the North Sea and the North-East Atlantic Ocean. Together they have been able to improve legislative decision-making by increasing authoritativeness and enforcement competence. Skjaerseth concludes that these institutions have met their responsibilities and made international environmental cooperation more effective.

Suvarna, Shreevani. "Development Aid in an Environmental Context: Using Microfinance to Promote Equitable and Sustainable Water Use in the Nile Basin." 33

Boston College Environmental Affairs Law Review 449 - 484 (2006).

The Nile Basin Initiative (NBI) provides a plan for the use of the Nile's waters that will encourage cooperation among the river's riparian states. The NBI allows for small community grants that address environmental threats. Suvarna argues that the NBI should supplement the grants with small, unsecured loans to individuals. Suvarna believes these "microcredits" would further the goals of international environmental projects in the developing world in general and in the Nile Basin in particular.

LAND USE

XIII.

Freyfogle, Eric T. "Goodbye to the Public-Private Divide." 36 Lewis & Clark Law School Environmental Law 7 - 24 (2006).

Freyfogle challenges the idea that public and private lands are at odds. Freyfogle proposes that the current schemes of land ownership should be replaced with locally-based mechanisms that respect private use rights in nature and promote the common good.

Klass, Alexandra B. "Adverse Possession and Conservation: Expanding Traditional Notions of Use and Possession." 77 University of Colorado Law Review 283 - 333 (2006).

The standard to adversely possess wild lands is much lower than the standard necessary to adversely possess developed lands. Klass explores why the standard for wild lands is a threat to millions of acres of undeveloped land in the United States. To aid in conservation of these lands, she proposes that courts modernize the adverse possession doctrine to require higher standards of use and possession for wild lands.

Nolon, John R. "Champions of Change: Reinventing Democracy Though Land Law Reform." 30 *Harvard Environmental Law Review* 1 - 49 (2006).

Nolon explores the possibilities of attaining uniform policies for governments in the field of land use regulation. Local governments perceive land use challenges and react through the adoption of pertinent laws. Using a "systems analysis" approach, Nolon explains how a legal framework that looks at local government innovations can more quickly create a coordinated and efficient system of land use law for state and federal governments.

Ociepka, Sean P. "Protecting the Public Benefit: Crafting Precedent for Citizen Enforcement of Conservation Easements." 58 *Maine Law Review* 225 - 248 (2006).

Ociepka discusses the law of conservation easements, addressing issues of standing and citizen enforcement. Ociepka provides an example of how one court dealt with the problem of standing to enforce a conservation easement in Tennessee. He suggests that giving citizens standing to enforce conservation easements could be an important tool for land conservation.

Somerville, Thane D. "King County Washington Ordinance 15053: Is 'The Most Restrictive Land-Use Law in the Nation' Constitutional?" 36 Lewis & Clark Law School Environmental Law 257 - 287 (2006).

A land use ordinance in King County, Washington prohibits rural landowners from clearing more than fifty percent of their land. It also requires some landowners to retain up to sixty-five percent of the land in its natural condition. Somerville analyzes whether the regulation takes private property without just compensation violating the

Fifth Amendment, and whether the regulation violates landowners' substantive due process rights under the Fourteenth Amendment.

XIV. MARINE PROTECTED AREAS

Bruce, Eleanor M., and Ian G. Eliot. "A Spatial Model for Marine Park Zoning." 34 Coastal Management 17 - 38 (2006).

Bruce and Eliot discuss marine zoning as an important tool for insuring conservation initiatives under varying levels of resource use. With help from Global Information Science (GIS), they hope their model will be able to present current zoning plan alternatives that reflect varying user opinion.

Cooke, Steven J., et. al. "Is Catch-and-Release Recreational Angling Compatible with No-take Marine Protected Areas?" 49 Ocean and Coastal Management 342 - 354 (2006). Cooke and co-authors contend that the recreational fisheries sector has the potential to be compatible with no-take marine protected areas (MPAs) when catch-and-release angling is practiced because, in theory, no fish are harvested. The authors argue that with appropriate regulation and angler education, catch-and-release could help enhance management goals while maintaining public support for MPAs.

Crawford, Brian, et. al. "Factors Influencing Progress in Establishing Community-Based Marine Protected Areas in Indonesia." 34 *Coastal Management* 39 - 64 (2006).

Due to the declining success of community-based marine ecosystem protected areas in Indonesia, a study was conducted in twenty-four villages to determine the factors that contribute to the success of the areas. Crawford and co-authors conclude that village complexity, level of development, project input levels, characteristics of community organizers, and degree of community organizer homophily relative to the community were all factors that influenced the area's progress. These findings should help researchers improve these areas and provide insight for the development of future sites.

Depondt, Florence, and Edmund Green. "Diving User Fees and the Financial Sustainability of Marine Protected Areas: Opportunities and Impediments." 49 Ocean and Coastal Management 188 - 202 (2006).

Depondt and Green investigate existing user fees in two important diving regions in the world, South-East Asia and the Francophone countries of the Indian and Pacific Oceans, and the potential for the introduction of new fee systems. The authors found that while the majority of marine protected areas (MPAs) in the Francophone countries are rarely visited by divers, MPAs in South-East Asia present a high potential to raise revenues for conservation via user fees although their potential will only be realized when complex problems associated with governance and revenue collection are resolved.

Detjen, Markus. "The Western European PSSA - Testing a Unique International Concept to Protect Imperiled Marine Ecosystems." 30 *Marine Policy* 442 - 453 (2006).

Particularly Sensitive Sea Areas (PSSAs) are a tool designed to protect vulnerable marine areas from vessel-source pollution through measures approved by the International Maritime Organization. Detjen examines a proposal to designate a large part of the Western European Atlantic as a PSSA. Although Detjen concedes that the

proposal appears to be lawful, he suggests that its implications for the concept are questionable. Because the significance of the instrument is at risk if overused, Detjen argues that new protective mechanisms should be contemplated.

Doherty, Penny A., and Mark Butler. "Ocean Zoning in the Northwest Atlantic." 30 *Marine Policy* 389 - 391 (2006).

A workshop held in Halifax, Nova Scotia, Canada, brought together marine policy makers, resources users, and experts to discuss spatial planning in the marine environment. Doherty and Butler present an overview of this workshop and highlight key discussions.

Jones, Peter. "Collective Action Problems Posed by No-Take Zones." 30 *Marine Policy* 143 - 156 (2006).

In a quest to conserve fish stocks and marine biodiversity, some marine fisheries managers and ecologists are proposing that the world's designated no-take zones, which currently occupy 0.04 percent of the earth's water resources, be increased by 20 - 30 percent over the next six years. Jones discusses the collective action problems that must be addressed before the fishing industry will agree to such measures and contribute to the success of this conservation effort.

Lunn, Kristin E., and Philip Dearden. "Fishers' Needs in Marine Protected Area Zoning: A Case Study from Thailand." 34 Coastal Management 183 - 198 (2006).

Multiple-use marine zoning can help balance human uses with conservation goals, but the development of effective zoning plans requires information on the condition and use of marine resources and the conflicts among them. Lunn and Dearden investigated residents' reliance on nearshore fisheries in Ko Chang Marine National Park, a designated no-take area in Eastern Thailand, and found that small-scale fishers were apparently unaware of the restrictions on resource use and continued to work within the Park.

Stead, Selina M., and Derek J. McGlashan. "A Coastal and Marine National Park for Scotland in Partnership with Integrated Coastal Zone Management." 49 Ocean and Coastal Management 22 - 41 (2006).

Stead and McGlashan recommend the use of Integrated Coastal Zone Management (ICZM) to develop a Coastal and Marine National Park (CMNP) for the Scottish coastline. The authors contend that the National Parks (Scotland) Act 2000 provides the Scottish Executive with an existing legal mechanism to set up the UK's first CMNP. The authors highlight areas in need of further investigation such as how to effectively harness expertise, funding, implementation, and stakeholder participation.

Stump, Neil E., and Lorne K. Kriwoken. "Tasmanian Marine Protected Areas: Attitudes and Perceptions of Wild Capture Fisheries." 49 Ocean and Coastal Management 298 - 307 (2006).

The Tasmanian State Government established a Marine and Marine Industries Council in 1999 and in 2001 a Tasmanian Marine Protected Area Strategy was launched. Stump and Kriwoken investigate the views, perceptions, and attitudes of commercial fishers towards this Strategy and identify the key issues that influence fisher support of marine protected areas. XV.

XVI.

Vince, Joanna. "The South East Regional Marine Plan: Implementing Australia's Oceans Policy." 30 *Marine Policy* 420 - 430 (2006).

The Australian government released Australia's Oceans Policy (AOP) in 1998. The South East Regional Plan, the first regional marine plan to be implemented under AOP, was released on May 21, 2004. Vince argues that although full integration across sectors and jurisdictions has not occurred, new AOP initiatives, institutions, and governance processes have considerably increased sectoral and jurisdictional coordination in this region.

MARITIME BOUNDARIES

Acer, Yuhcel. "A Proposal for a Joint Maritime Development Regime in the Aegean Sea." 37 Journal of Maritime Law & Commerce 49 - 77 (2006).

Greece and Turkey have a long-running disagreement over their maritime boundaries in the Aegean Sea. Attempting to find a solution to the disagreements, Acer reviews more than twenty existing bilateral joint development agreements. He concludes that a system under which the countries would have joint control would be more beneficial than the countries' current delimitation.

MARITIME TRANSPORTATION

Chang, Chih-Ching, et. al. "Developing Direct Shipping Across the Taiwan Straits." 30 *Marine Policy* 392 - 399 (2006).

For political reasons, direct shipping across the Taiwan Straits has been restricted since 1949. Goods destined for cross-Straits trade must be shipped via a third country, such as Hong Kong or Japan. The demand for direct shipping across the Straits is growing. Chang explores possible solutions for shipping directly across the Straits and discusses a mode of negotiation for settling discrepancies in viewpoints.

Fafaliou, Irene, et. al. "Is the European Shipping Industry Aware of Corporate Social Responsibility? The Case of the Greek-owned Short Sea Shipping Companies." 30 *Marine Policy* 412 - 419 (2006).

Fafaliou and co-authors attempt to clarify the meaning of corporate social responsibility in the context of the European maritime sector and examine its application in the case of the Greek-owned short sea shipping companies. The authors conclude that the application of corporate social responsibility is restricted to companies that either are subsidiaries of international conglomerates or owned by ship-owners personally aware of the corporate benefits derived from socially responsible behavior.

Foster, Caroline E. "Compensation for Material and Moral Damage to Small Island States' Reputations and Economies due to an Incident during the Shipment of Radioactive Material." 37 Ocean Development and International Law 55 - 92 (2006).

An incident in the course of the shipment of radioactive material could have serious consequences for affected states, whether or not a release of radiation actually resulted from the incident. In particular, small island states could potentially suffer serious damage to their reputations and to their economies. Pacific Island states are taking an initiative in response to their exposure to this risk. Assurances that they will not be left unsupported in such circumstances are being sought through a process of direct discus-

sions presently taking place with source states and operators involved in the shipment of radioactive material through the Pacific. Foster examines the legal background to these discussions, investigating the legal uncertainties in the situation of states affected by an incident in the course of shipment of radioactive material that arise from limitations in the nuclear civil liability conventions and other aspects of applicable international law. (*Abstract courtesy of Ocean Development and International Law*).

Roberts, Julian. "Compulsory Pilotage in International Straits: The Torres Strait PSSA Proposal." 37 Ocean Development and International Law 93 - 112 (2006).

At a time when the International Maritime Organization's (IMO) Particularly Sensitive Sea Area (PSSA) concept is under intense scrutiny by IMO member states, Australia and Papua New Guinea jointly proposed an extension to the existing Great Barrier Reef PSSA to include the waters of the Torres Strait. As a measure to protect this PSSA, a compulsory pilotage regime was proposed for adoption by the IMO. Roberts analyzes the Torres Strait proposal and, in particular, the reaction by many IMO member states to the proposal for compulsory pilotage in a strait used for international navigation. Consideration is given to the legal basis for such a measure and the options available to the proposing states to implement a pilotage regime in the Torres Strait. (*Abstract courtesy of Ocean Development and International Law*).

POLLUTION

XVII.

Curran, K.J. "Proposing a Coordinated Environmental Effects Monitoring (EEM) Program Structure for the Offshore Petroleum Industry, Nova Scotia, Canada." 30 *Marine Policy* 400 - 411 (2006).

Environmental effects monitoring (EEM) identifies, quantifies, and compares predicted environmental impacts of a proposed industrial project to those observed after the project has been developed. Curran and co-authors contend that the structure of the EEM used by Environment Canada to monitor impacts of the pulp and paper industry has been effective and propose a structure to support the development of a national EEM program for the petroleum industry.

Freire, Juan, et. al. "Role of the Spanish Scientific Community in the Initial Assessment and Management of the Environmental Damages Caused by the Prestige Oil Spill." 30 *Marine Policy* 308 - 314 (2006).

Freire and co-authors analyze the role of the Spanish scientific community in the initial assessment of the environmental and socioeconomic damages caused by the Prestige oil spill. The authors discuss the reasons for the failures in the response, highlighting weaknesses in the structures and organizational capacity of scientific institutions and the public administration. The article contains suggestions to improve response to future catastrophes including protocols for rapid response and stakeholder participation.

Gaudette, Crystal Mothershead. "South Florida Water Management District v. Miccosukee Tribe of Indians: The Slippery Slope to Federal Control of State Water Diversions." 39 University of California Davis Law Review 669 - 697 (2006).

Under the Clean Water Act, the federal government has jurisdiction over point source pollution and the states have control over non-point source pollution. In the Miccosukee case, the Supreme Court expanded the definition of "point source pollution," which increased federal regulatory oversight of water diversions traditionally controlled by states. Gaudette reasons that the Supreme Court's decision impedes states' ability to enforce water quality regulations to address local problems.

Lin, Bin, and Cherng-Yuan Lin. "Compliance with International Emissions Regulations: Reducing the Air Pollution from Merchant Vessels." 30 *Marine Policy* 220 - 225 (2006).

In September 1997, the International Maritime Organization (IMO) adopted a protocol to reduce air pollution from ships. Lin and Lin investigate the possible strategies which may be adopted by maritime countries to conform to the protocol. As legislative support is necessary for successful implementation of these new requirements, the authors suggest that the parties responsible for both navigational and environmental protection in maritime countries cooperate in the revision of relevant federal laws.

McElfish, James M. Jr., et. al. "Inventing Nonpoint Controls: Methods, Metrics and Results." 17 Villanova Environmental Law Journal 87 - 216 (2006).

McElfish and co-authors discuss three states' approaches to regulating nonpoint source water pollution. The article provides a comprehensive look at the states' measures, including the incentives, technical support, and regulations used by each. It also includes an overview of federal programs available and describes how they affect state regulation.

McElfish, James M., Jr., and Lyle M. Varnell. "Designing Environmental Indicator Systems for Public Decisions." 31 Columbia Journal of Environmental Law 45 - 86 (2006).

McElfish and Varnell examine the creation and use of environmental indicators developed by government agencies and scientists. The authors discuss what factors affect decision-makers' use of the environmental indicators and outline ways to increase their effectiveness.

Noland, L. Christopher. "The Ghouls That Won't Go Away - The Dire Environmental Consequences Posed by the Ghost Fleet in the James River." 30 William and Mary Environmental Law and Policy Review 513 - 553 (2006).

The National Defense Reserve Fleet, a floating graveyard of old and decaying government ships known as the "Ghost Fleet," is located on the James River. Noland explains the history of the fleet and notes that it presents a pending environmental crisis. Noland focuses on solutions to dismantle the ships, suggesting that a suit against the federal government would facilitate the process.

Storrier, K.L., and D.J. McGlashan. "Development and Management of a Coastal Litter Campaign: The Voluntary Coastal Partnership Approach." 30 *Marine Policy* 189 - 196 (2006).

The Forth Estuary Forum developed a Coastal Litter Campaign in an effort to tackle a litter problem on the beaches of Scotland. Storrier and McGlashan comment on the Volume 5, Number 1

program's ability to gain community involvement and conclude that the best way to reduce beach litter is by raising public awareness, providing beach trash receptacles, and enforcing legislation.

Tomlin, John. "Waking the Sleeping Giant: Analyzing New Jersey's Pursuit of Natural Resource Damages from Responsible Polluting Parties in the Lower Passaic River." 23 Pace Environmental Law Review 235 - 262 (2006).

Tomlin examines the federal and state statutory authority under which the New Jersey Department of Environmental Protection is pursuing natural resource damages from eighteen sites along the Lower Passaic. In addition, Tomlin discusses some of the issues that may be raised by the parties targeted by the Department, including erosion of the good faith relationship that exists between the government and industry for remediation of sites.

Zaring, David. "Best Practices." 81 New York University Law Review 294 - 350 (2006). Best practices rulemaking is a voluntary way of coordinating administrative action both within and across agencies. Zaring describes and evaluates best practices rulemaking, analyzing its use in the public sector through a case study in which best practices were used to regulate water pollution. Zaring finds that best practices rulemaking is predominantly useful for setting regulatory standards where the precise content of the standard is not particularly important.

XVIII. RENEWABLE ENERGY

Eberhardt, Richard W. "Federalism and the Siting of Offshore Wind Energy Facilities." 14 New York University Environmental Law Journal 374 - 420 (2006).

Eberhardt explains that the wind energy industry may negatively impact scenic resources, wildlife populations, and natural habitats. In light of these concerns, designing regulations involves both state and federal regulatory authority. Eberhardt discusses the importance of state regulatory power when siting the facilities, the basis for deciding regulatory power, and regulatory issues raised by climate change.

Scott, Karen N. "Tilting at Offshore Windmills: Regulating Wind Farm Development within the Renewable Energy Zone." 18 *Journal of Environmental Law* 89 - 118 (2006). With the Energy Act 2004, the United Kingdom introduced a new legislative framework for the development of offshore wind farms beyond the limits of the territorial sea within designated renewable energy zones. Scott analyzes the compatibility of the new arrangements with international marine and environmental obligations and argues that significant legal issues will arise relating to rights of navigation, the protection of the marine environment, and the decommissioning of turbines.

SAND MINING

XIX.

Cho, Dong-Oh. "Challenges to Sustainable Development of Marine Sand in Korea." 49 Ocean and Coastal Management 1 - 21 (2006).

As resources of sand on land are depleted, the demand for marine sand is increasing rapidly. Marine sand, however, is limited in quantity and sand mining can result in environmental degradation, habitat destruction, and coastal erosion. Cho discusses the challenges of marine sand mining in Korea.

Peters, Bianca G.T.M., and Suzanne J.M.H. Hulscher. "Large-Scale Offshore Sand Extraction: What Could be the Results of Interaction Between Model and Decision Process?" 49 Ocean and Coastal Management 164 - 187 (2006).

The Netherlands is considering large-scale offshore sand extraction to meet the increasing need for building sand. To support decisions about large-scale extraction, Peters and Hulscher developed a morphological model which indicates the possible effects of the extraction. However, because no field data is available, the model's results are controversial and difficult to use in decision-making. In this study, the authors evaluate whether validation of the model would help the decision-making process and explore how to improve both the model and its use without validation.

SECURITY

XX.

Perry, Timothy C. "Blurring the Ocean Zones: The Effect of the Proliferation Security Initiative on the Customary International Law of the Sea." 37 Ocean Development and International Law 33 - 53 (2006).

The United States has recently implemented its "Proliferation Security Initiative" (PSI), a brand of "understanding" that unites "like-minded states" in a program of ship-boarding and information sharing, with the aim of combating the proliferation of nuclear weapons among so-called "rogue states." This article interrogates the realities underlying the literal text of the PSI and seeks to understand how the United States can be expected to utilize the PSI in practice. Perry concludes that the PSI will blur the jurisdictional boundaries between the ocean zones, and otherwise affect the customary international law of the sea. (*Abstract courtesy of Ocean Development and International Law*).

Wheeler, Kristen D. "Homeland Security and Environmental Regulation: Balancing Long-Term Environmental Goals with Immediate Security Needs." 45 *Washburn Law Journal* 437 - 466 (2006).

Wheeler evaluates the relationship between environmental regulation and national security concerns. Wheeler outlines developments in homeland security law and environmental regulation since September 11 and examines the effect of environmental regulation on the military. Wheeler concludes by suggesting ways in which federal and state environmental legislation may be used to increase homeland security.

XXI. SCIENCE AND MANAGEMENT

Bryant, Beth C., and Dan Huppert. "Why 'Separating Science and Management' Confuses the Debate over Management Reform in U.S. Fisheries." 31 *Fisheries* 127 - 129 (2006).

Bryant and Huppert contend that the terms "separating science and management" and "separating conservation and management" should be abandoned from the current debate over U.S. fishery management reform because they are confusing and misleading. If the ultimate goal of management reform is to place a greater emphasis on conserving biological resources by creating an institutional separation between the Total Allowable Catch (TAC)-setting decisions and the allocation decisions, the phrase "separating science from management" confuses the issue by implying that setting TACs is purely scientific and that allocation is done with no scientific input. Bryant and Huppert argue that science is a necessary, but not sufficient, condition for successful management and that future debates on fishery management reform should distinguish between the participation of scientists in making decisions and the objective role of science in informing decisions.

Patton, Dorothy E., and Stephen S. Olin. "Scientific Peer Review to Inform Regulatory Decision Making: Leadership Responsibilities and Cautions." 26 *Risk Analysis* 5 - 16 (2006).

Patton and Olin offer insights on the peer review process as it relates to scientific and technical reports used to inform regulatory decisions. The article is intended to serve as a tutorial on the basic element of the peer-review process for leaders with little experience and a "bare bones" recitation of established concepts for leaders wrestling with peer-review issues. Patton and Olin highlight nine fundamental "leadership responsibilities" that determine the nature and course of peer review. These responsibilities are: promoting a peer-review culture; determining the need for and form of peer review; defining and distinguishing review processes; planning and allocating resources; assessing readiness for review; developing the "charge"; selecting reviewers - matching expertise; selecting reviewers - identifying conflicts of interest and bias; and using peer-review comments in completing the report.

Sallenave, Rossana, and David E. Cowley. "Science and Effective Policy for Managing Aquatic Resources." 14 *Reviews in Fisheries Science* 203 - 210 (2006).

Sallenave and Cowley summarize the discussions in a facilitated workshop that brought together academics, natural resource managers, and individuals from the private sector to discuss limitations in aquatic resource management policy and how science could be used more effectively in the decision-making process. Workshop participants identified insufficient dialogue between scientists and managers as a major impediment to including science in management and stress that the principles of science need to be introduced early in the decision-making process.

XXII. SHIPWRECKS

Dromgoole, Sarah. "The International Agreement for the Protection of the *Titanic*: Problems and Prospects." 37 Ocean Development and International Law 1 - 31 (2006).

In 2000 the United States, United Kingdom, Canada, and France finalized the text of an interstate agreement for the protection of the remains of RMS *Titanic*. The agreement has now been signed by the United States and United Kingdom, and it is expected that Canada and France will sign in due course. Dromgoole examines the background to the Agreement and the text of the Agreement itself and considers some questions relating to its implementation in the United States and the United Kingdom. It also looks at its relationship with other related international instruments. A number of problematic issues are identified and the prospects for the Agreement are assessed. (*Abstract courtesy of Ocean Development and International Law*).

XXIII. WATER LAW

Dellapenna, Joseph W. "Symposium: Developing a Suitable Water Allocation Law for Pennsylvania." 17 Villanova Environmental Law Journal 1 - 85 (2006).

Pennsylvania does not have a state statute which regulates the riparian use of water. Dellapenna discusses the law that currently governs the allocation of water, suggests alternatives to the existing law, and analyzes what new problems might accompany the changes.

Hall, Noah D. "Toward a New Horizontal Federalism: Interstate Water Management in the Great Lakes Region." 77 University of Colorado Law Review 405 - 456 (2006).

Cooperative horizontal federalism is a new model for environmental policy that provides a constitutional means for states to develop more uniform environmental protection standards which are implemented individually with regional resources and enforcement. Hall illustrates the concept through the recently proposed Great Lakes-St. Lawrence River Basin Water Resources Compact.

Winburn, J. Benjamin. "The Coalbed Methane Boom: The Push for Energy Independence Raises Questions About Water and the Rights of America's Homesteaders." 19 *Tulane Environmental Law Journal* 359 - 386 (2006).

Winburn provides a comprehensive view of the coalbed methane boom in the Western United States, giving a detailed overview of its science. Winburn also analyzes the unique challenges facing federal and state agencies as they ensure compliance with environmental protection laws and policies. Winburn examines how hasty actions could permanently alter the ecosystems of the Rocky Mountain West.

XXIV. WETLANDS

Eisen, Joel B. "Allen Chair Symposium: State of the Chesapeake Bay in the Twenty-First Century: Article: *Rapanos*, *Carabell*, and the Isolated Man." 40 *University of Richmond Law Review* 1099 - 1112 (2006).

Eisen notes that two Supreme Court cases will have an impact on the Chesapeake Bay, as well as watersheds in other states. *Rapanos* and *Carabell* will determine whether wetlands are considered to be adjacent to interstate waters, thereby providing them federal protection. Eisen suggests that the possibility that wetlands may not receive federal protection gives the environmental cleanup programs of the Bay a stronger urgency.

Glenn, Edward P., et. al. "Coastal Wetlands of the Northern Gulf of California: Inventory and Conservation Status." 16 Aquatic Conservation: Marine and Freshwater Ecosystems 5 - 28 (2006).

Above 28°N, the coastline of the northern Gulf of California is indented at frequent intervals by negative or inverse estuaries that are saltier at their backs than at their mouths due to the lack of freshwater inflow. These estuaries cover over 215,000 ha. An additional 6,000 ha of freshwater and brackish wetlands are found in the Colorado River delta. Although the mangrove marshes in the Gulf of California enjoy some degree of protected status in Mexico, the northern saltgrass esteros do not and are increasingly targeted by developers as prime locations for resorts and aquaculture sites. Glenn and co-authors conducted an inventory of these marshes and found that over 95 percent of the mangrove marshes have been developed for shrimp farming. They also found that the majority of saltgrass marshes above the mangrove line remain relatively unspoiled. The authors recommend a system of protected reserves incorporating the pristine wetlands, along with water quality management and buffer zones for the more developed esteros.

Ryan, Erin. "New Orleans, the Chesapeake, and the Future of Environmental Assessment: Overcoming the Natural Resources Law of Unintended Consequences." 40 University of Richmond Law Review 981 - 1029 (2006).

Wetlands of the Gulf Coast and the Chesapeake Bay area in Virginia and Maryland are both disappearing, but due to different factors. Ryan calls for environmental policy makers to develop a method of environmental review that better monitors the complex characteristics of regional ecosystems.

Schilmoeller, Gina. "Invoking the Fifth Amendment to Preserve and Restore the Nation's Wetlands in Coastal Louisiana." 19 *Tulane Environmental Law Journal* 317 - 337 (2006).

Schilmoeller asks whether regulation or acquisition of land will best protect and preserve the wetlands on the Louisiana coast. Schilmoeller discusses regulations that have attempted to protect the coastal wetlands over the past thirty years and compares legal, economic, and environmental issues involved in acquiring the property to temporary takings and strict land use regulations.

WHALING

Herrera, Guillermo E., and Porter Hoagland. "Commercial Whaling, Tourism, and Boycotts: An Economic Perspective." 30 *Marine Policy* 261 - 269 (2006).

Commercial whaling is highly contentious and animal rights groups and conservation organizations often threaten boycotts. In terms of economic efficiency, a nation's decision to engage in whaling depends on rents from the whaling industry, ecological and market linkages, and the potential for boycotts. Herrera and Hoagland analyze the tradeoffs involved in a nation's decisions to engage in whaling, whale-watching, and fishing. The authors' findings suggest that there are times when whaling is economically rational.