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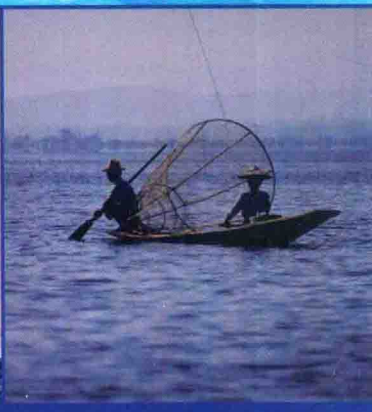
Marine Policy

An introduction to governance and international law of the oceans





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List of acronyms and abbreviations

AAC	Arctic Athabaskan Council
ABNJ	areas beyond national jurisdiction
ACAP	Agreement on the Conservation of Albatrosses and Petrels
ACIA	Arctic Climate Impact Assessment
AEPS	Arctic Environmental Protection Strategy
AHP	analytic hierarchy process
AIA	Aleut International Association
AMAP	Arctic Monitoring and Assessment Programme
APFIC	Asia-Pacific Fisheries Commission
ARREST	International Convention on Arrest of Ships
ASBAO	Regional Convention on Fisheries Cooperation among African States Bordering the Atlantic Ocean
ASOC	Antarctic and Southern Ocean Coalition
AT	Antarctic Treaty
ATCM	Antarctic Treaty Consultative Meeting
ATS	Antarctic Treaty System
BUNKERS	International Convention on Civil Liability for Bunker Oil Pollution Damage
BWM	International Convention for the Control and Management of Ships' Ballast Water and Sediments
CAFF	Conservation of Arctic Flora and Fauna
CAM	coastal area management
CBD	Convention on Biological Diversity
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CCAS	Convention for the Conservation of Antarctic Seals
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CDM	Clean Development Mechanism
CDQ	community development quota
CECAF	Committee for the Eastern Central Atlantic Fisheries
CEP	Caribbean Environment Program
CER	corporate environmental responsibility
cif	cost, insurance and freight
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLC	International Convention on Civil Liability for Oil Pollution Damage

CLCS	Commission on the Limits of the Continental Shelf
CLEE	Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources
CLL	International Convention on Load Lines
CMI	Comité Maritime International
CMS	Convention on the Protection of Migratory Species of Wild Animals
COFI	Committee on Fisheries
COLREG	Convention on the International Regulations for Preventing Collisions at Sea
COLTO	Coalition of Legal Toothfish Operators
COMNAP	Council of Managers of National Antarctic Programs
COP	conference of the parties
CPPS	Permanent Commission on the South Pacific
CP	consultative party
CPUE	catch per unit effort
CRM	coastal resource management
CSI	Container Security Initiative
CZM	coastal zone management
DFO	Department of Fisheries and Oceans, Canada
DMC	dangerous maritime cargo
dwt	dead weight tonnes
EAF	ecosystem approach to fisheries
EAGGF	European Agricultural Guidance and Guarantee Fund
EAM	ecosystem approaches to management
EAP	Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region
EbA	ecosystem-based adaptation
EEC	European Economic Community
EEDI	Energy Efficiency Design Index
EEZ	Exclusive Economic Zone
EFR	ecological fiscal reform
ELECRE	elimination and choice expressing reality
EPPR	Emergency Prevention, Preparedness and Response
ERFEN	Protocol on the Regional Program for the Study of the El Niño Phenomenon in the South-East Pacific
ESG	environmental, social and governance
ETR	ecological tax reform
EU	European Union
EVI	Economic Vulnerability Index
FAL	Convention on Facilitation of International Maritime Traffic
FAO	Food and Agriculture Organization
FCWC	Fishery Committee of the West Central Gulf of Guinea
FFA	South Pacific Forum Fisheries Agency
F_{MSY}	fishing mortality less than maximum sustainable yield
fob	free on board
FSC	flag state control
GBRMPA	Great Barrier Reef Marine Park Authority

GDP	gross domestic product
GDS	geographically disadvantaged state
GFCM	General Fisheries Council for the Mediterranean
GGI	Gwich'in Council International
GNI	gross national income
GPA	Global Programme of Action
GSP	green shipping practice
GT/G.T./gt	gross tonnage
GW	gigawatt
HAFS	International Convention on the Control of Harmful Anti-fouling Systems on Ships
HAI	Human Assets Index
HFC	hydrofluorocarbon
IAATO	International Association of Antarctic Tour Operators
I-ATTC	Inter-American Tropical Tuna Commission
IBSFC	International Baltic Sea Fisheries Commission
ICC	Inuit Circumpolar Council
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
ICJ	International Court of Justice
ICNAF	International Commission for the Northwest Atlantic Fisheries
ICRW	International Convention for the Regulation of Whaling
ICZM	integrated coastal zone management
IFQ	individual fishing quota
ILC	International Law Commission
ILO	International Labour Organization
IMO	International Maritime Organization
IOPC Funds	International Oil Pollution Compensation Funds
IOS	Indian Ocean Sanctuary
IOTC	Indian Ocean Tuna Commission
IPHC	International Pacific Halibut Commission
IPOA	international plans of action
IPOA-IUU	International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
ISA	International Seabed Authority
ISMC	International Safety Management Code
ISO	International Organization for Standardization
ISPS	International Ship and Port Facility Security Code
ITLOS	International Tribunal for the Law of the Sea
ITQ	individual transferable quota
IUCN	International Union for the Conservation of Nature
IUU	illegal, unreported and unregulated
IVQ	individual vessel quota
IWC	International Whaling Commission
kg	kilogram
lb	pound
LBS	Protocol for the Protection of the Mediterranean Sea Against Pollution

	from Land-Based Sources and Activities
LDC	London Dumping Convention (Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter)
LDS	landlocked developing state
LLDC	landlocked developing country
LLMC	Convention on Limitation of Liability for Maritime Claims
LME	large marine ecosystem
LOSC	Law of the Sea Convention
MAP	Mediterranean Action Plan
MARPOL	International Convention for the Prevention of Pollution from Ships
MAUT	multi-attribute utility theory
MBI	market-based instrument
MBTA	Migratory Bird Treaty Act
MCDA	multi-criteria decision analysis
MEPC	Marine Environment Protection Committee
MLC	Maritime Labour Convention
MOU	memorandum of understanding
MPA	marine protected area
MSC	Maritime Safety Committee
MSP	marine spatial planning
MSY	maximum sustainable yield
MW	megawatt
NAFO	North Atlantic Fisheries Organization
NAMMCO	North Atlantic Marine Mammal Commission
NASCO	North Atlantic Salmon Conservation Organization
NEAFC	North East Atlantic Fisheries Commission
nmi	nautical mile
NOAA	National Oceanic and Atmospheric Administration
NPA	national programme of action
NPAFC	North Pacific Anadromous Fish Commission
NT/N.T./nt	net tonnage
OCA/PAC	Oceans and Coastal Areas Programme Activity Centre
OECD	Organization for Economic Co-operation and Development
OLDEPESCA	Latin American Organization for the Development of Fisheries
OPA	Oil Pollution Act
OPC	Oil Pollution Convention
OPRC	International Convention on Oil Pollution Preparedness, Response, and Co-operation
OPRC-HNS	Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances
OSPAR	Convention for the Protection of the Marine Environment of the North East Atlantic
OSY	optimum sustained yield
P&I	protection and indemnity
PAL	Athens Convention relating to the Carriage of Passengers and their Luggage by Sea
PAME	Protection of the Arctic Marine Environment

PCA	Permanent Court of Arbitration
PCB	poly-chlorinated biphenol
PERSGA	Programme for the Environment of the Red Sea and Gulf of Aden
PFC	perfluorocarbon
PICES	North Pacific Marine Science Organization
PROMETHEE	preference ranking organizational method for enrichment evaluation
PSC	Pacific Salmon Commission
PSI	Proliferation Security Initiative
PSSA	particularly sensitive sea area
PSU	practical salinity units
PTBT	Partial Nuclear Test Ban Treaty
RAIPON	Russian Arctic Indigenous Peoples of the North
ReCAAP	Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia
RFMO	regional fisheries management organization
RMP	Revised Management Procedure
RMS	Revised Management Scheme
ROPME	Regional Organization for the Protection of the Marine Environment
ro-ro	roll-on, roll-off
SAP BIO	Strategic Action Plan for the Conservation of Marine and Coastal Biodiversity in the Mediterranean
SAR	Convention International Convention on Maritime Search and Rescue
SC	Saami Council
SCAR	Scientific Committee on Antarctic Research
SDC	Seabed Disputes Chamber
SDR	Special Drawing Right
SDWG	Sustainable Development Working Group
SEAFO	South East Atlantic Fisheries Organization
SECA	sulphur emission control area
SEEMP	Ship Energy Efficiency Management Plan
SIDS	small island developing state
SIOFA	South Indian Ocean Fisheries Agreement
SOLAS	International Convention for the Safety of Life at Sea
SOS	Southern Ocean Sanctuary
SPA	Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean
SPLOS	State Parties to the Law of the Sea Convention
SPR	spawning potential ratio
SPREP	South Pacific Regional Environmental Programme
SPRFMO	South Pacific Regional Fisheries Management Organization
SRCF	Sub-Regional Commission on Fisheries
SSB	spawning stock biomass
SSBR	spawning stock biomass per recruit
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
SUA	Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation

TAC	total allowable catch
TBT	tributyltin
TEU	twenty-foot equivalent units
TURF	territorial user right in fisheries
UK	United Kingdom
ULCC	ultra large crude carrier
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNCITRAL	United Nations Commission on International Trade Law
UNCLOS I	1958 United Nations Conference on the Law of the Sea
UNCLOS II	1960 United Nations Conference on the Law of the Sea
UNCLOS III	1982 United Nations Conference on the Law of the Sea
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFSA	UN Fish Stocks Agreement
UNGA	United Nations General Assembly
UNGAR	United Nations General Assembly Resolution
UNODA	United Nations Office for Disarmament Affairs
UNSCR	United Nations Security Council Resolution
US	United States of America
VLBC	very large bulk carrier
VLCC	very large crude carrier
VLOC	very large ore carrier
WACAF	Abidjan Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region
WCED	World Commission on Environment and Development
WCPFC	Western and Central Pacific Fisheries Commission
WECAFC	Western Central Atlantic Fisheries Commission
WiP	with policy
WoP	without policy
WRC	Nairobi International Convention on the Removal of Wrecks
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wildlife Fund

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Preface

In his classic text *Unpopular Essays*, Bertrand Russell contended that humanity confronts two different problems: the first is mastering nature to provide for human needs, which is firmly in the domain of science and technology (Russell, 1950); the second is wisely utilizing the fruits of science and technology to improve the human condition. Prudence, however, has not always prevailed. Russell provided examples of technological advances throughout history that led to disastrous outcomes. In particular, he evoked the domestication of the horse (conquest), mechanization (slavery) and modern physics (nuclear weapons) as specific advances that were accompanied by unfortunate consequences. Russell stated that while science and technological achievements and skills are important, '...something more than skill is required, something which may perhaps be called "wisdom". This is something that must be learnt, if it can be learnt, by means of other studies than those required for scientific technique'.

Russell's observations are especially apropos to our relationship with the oceans. Evidence confirms that humans consumed seafood 164,000 years ago, and early pre-Western cultures developed sufficient technical expertise to overharvest species they could access (Mueller-Dombois and Wirawan, 2005; Marean *et al.*, 2007). The advent of industrialization created the opportunity to fish in remote oceans, extract oil and gas from continental shelves, transport goods over great distances and use the ocean as a repository for waste. Even as late as the early twentieth century, many thought the oceans immutable and immune to human activities.

Paralleling Russell's examples, scientific and technological advancements have outpaced humanity's ability to understand the consequences of our activities in the marine environment. Nor have we been able to envision how to regulate these activities. Even after evidence emerged on the effects of overfishing and pollution, responses took decades. This unfortunate delay is exasperated by the fact that, even to this day, most of the ocean is owned by no one and thus must be managed as a commons resource. This book explores what Russell termed the 'wisdom' necessary to ensure that humanity's scientific and technical achievements – and the consequences of these achievements – lead to what he termed 'contentment'.

The management of the oceans is incredibly complex. Even those employed in the field of ocean governance are rarely fluent in all its aspects. This ignorance is forgivable: at present there are over 150 multilateral international agreements that govern the use of the marine environment. In turn, many of these agreements establish dozens of multinational agencies, commissions, organizations and secretariats to oversee their implementation. These administrative bodies then create policies, guidelines and reporting requirements.

Increasing the confusion is that many of these agreements often nest hierarchically within other agreements or require other agreements to be fully implemented in order to operate successfully. Complicating the Byzantine maze is the fact that many agreements – and particularly the more important international conventions – are frequently amended. As if this were not enough, many geographic regions of the ocean are governed by multiple, separate regional agreements.

Unsurprisingly, very few people have a comprehensive understanding of how the world's oceans are governed and whether this governance is effective. Fewer still can competently gauge if our current approach to ocean governance is sufficient to address complex global issues such as climate change, sovereignty claims and supporting indigenous rights.

Purpose of this book

This intent of this book is to provide the reader with an understanding of how nation states work together to address socioeconomic, environmental and cultural issues with respect to the management of the world's oceans. Marine governance is an amalgam of historical practice and custom, economic and trade considerations, domestic law and policy, and regional and international agreements. This book provides a systematic overview of ocean governance with the intention of providing a foundational treatment of how humans manage the various activities undertaken on, in or under the world's oceans. How oceans are governed is captured here under the aegis of 'marine policy'. Broadly defined, marine policy is the various courses of action to influence decisions, actions and other ocean-related matters.

While this text introduces the legal context and international law that underpins ocean governance, it is not a law textbook nor is it an authoritative guide to any particular international law or policy. Dozens of textbooks have been written on each of the international conventions discussed here and the intent is not to duplicate these works. Instead, this book explores the legal, policy and state approaches to ocean governance to demonstrate the commonalities and differences in how various sectors (e.g. fishing, transportation) are governed and the opportunities to integrate governance approaches to improve socioeconomic and environmental outcomes. In particular, this book attempts to provoke the reader, who may be a specialist in one particular aspect of marine law or policy, towards thinking about the opportunities and benefits of thinking beyond a sector-based approach to marine management.

This text primarily focuses on the international aspects of marine management. For this reason, it is not a treatise on how individual nations manage their domestic waters. While each nation state (even landlocked states) has legal standing in ocean law and may have its own set of marine laws and policies, it is not the purpose of this book to preferentially focus on individual nations and their domestic marine agendas. Since there are many excellent 'coastal management' texts, domestic examples will be used only when they are illustrative of a particular system, approach, philosophy, success or failure.

Why this book now?

The current environmental condition of marine environments world-wide is steadily declining and these trends have been widely chronicled (Pauly *et al.*, 2002; Roberts, 2013). Traditional, sector-based approaches to solving socioeconomic and environmental problems

(such as managing fisheries or regulating transportation) have to date been unable to resolve the complex social and environmental predicaments facing humanity (see Box 0.1). Climate change, sovereignty claims and regional economic disparity are not addressed by simply improving the management of one part of the ocean environment or economy. Instead, complex, interrelated problems require innovative ways of integrating management actions towards common goals.

Box 0.1 Governance challenges resulting from the unique characteristics of the marine environment

- Sector-based, universal solutions are incompatible with the biophysical complexity of marine environments and interconnections with the economy and human communities.
- Socioeconomic and ecological interactions at multiple geographical scales are poorly understood.
- Management based on 'command and control' regulatory approaches are less effective in marine systems because of their dynamism and complexity.
- Attitudes and time frames are short term, compromising planning for long-term sustainable solutions.
- A 'frontier mentality' prevails that assumes few ecological, thermodynamic and economic constraints to resource development.
- Marine systems transcend national and regional boundaries, leaving management systems developed for property rights (ownership) inadequate.

Source: modified from Glavovic (2008)

Book outline

The discrete inner workings of the oceans are largely invisible to us and often counterintuitive to our terrestrial experience. As such, a basic knowledge of the biological and physical characteristics of marine systems is required to understand how the application of marine law and policies may impact marine environments. An 'Oceans 101' is provided in Chapter 1 to familiarize the reader with the structure, function and processes that operate in marine environments. It begins with an exploration of the differences between terrestrial and marine environments. The intent of this section is to evince how our 'land referenced' perspective instills a bias that must be overcome if we are to fully embrace how marine environments could be governed. The chapter then outlines the major biological, oceanographic and physiographic characteristics and features of marine environments and the relationship of these features to their astute management.

Chapter 2 introduces the history and operation of international law. Within this chapter is a discussion of the types of ocean ownership regimes, an introduction to the world's different legal systems, and a brief explanation of the workings of international law. The chapter then introduces international marine law and the differences between marine law and other legal systems. Finally, the chapter introduces the United Nations Convention on the Law of the Sea (LOSC). The LOSC is one of the most comprehensive international agreements

created and tomes written solely on the LOSC and its application abound. This chapter provides an overview of the content and operation of the LOSC while subsequent chapters will delve further into the specific functions of the Convention.

An introduction to the field of policy encompasses Chapter 3. It explores the purpose of public policies, types of policies and the relationship between law and public policy. The unique characteristics of marine law and policy are then discussed with particular attention to areas beyond national jurisdiction (the high seas and deep seabed). The third chapter concludes with an exploration of the application of various types of policy instruments in marine environments. These include regulatory, economic, price-based, quantity-based, market enhancement, informational and voluntary instruments.

Chapter 4 reviews how policies are formed, the characteristics of policy development, considerations in selecting policies and methods for selecting and analysing policies. Qualitative versus quantitative policy analysis figures substantially in this analysis.

The primary international mechanisms that govern the protection and preservation of the oceans – along with the important regional conventions and examples of bilateral and multilateral agreements – are presented in Chapter 5. The chapter begins with a discussion on the primary threats to marine biodiversity: overharvesting, habitat loss, introduced species, global climate change and pollution. This is followed by a brief history of international environmental marine law and policy. The remainder of the chapter outlines the primary international and regional agreements governing the protection of marine environments.

The operation and regulation of marine fisheries is discussed in Chapter 6. The chapter provides an overview of marine fisheries management, focusing on divergent approaches (single-species, multi-species, ecosystem-based) that have been applied – sometimes successfully and sometimes not. A history of international fisheries law and policy is then provided along with a summary of the organizations that oversee fisheries management. The primary international agreements that govern fishing are then discussed.

The seventh chapter explores the operation and regulation of international marine transportation. First, it begins with an overview of contemporary shipping and introduces marine transportation law and policy. Organizations that regulate marine transportation are then discussed along with the key international conventions and agreements dealing with the ship, shipping company and seafarer. The chapter then addresses international laws and policies related to maritime security (including piracy) and the environmental effects of shipping.

The polar regions (Arctic and Antarctic) warrant a separate treatment in Chapter 8 since they have unique governance arrangements due to their remoteness, inhospitable climate and unique biological systems. While the polar regions are similar in climate, they are distinctive in almost all other respects, be they biological structure, governance or human use. Chapter 8 introduces the Antarctic and Southern Ocean and the Antarctic Treaty System that governs these regions. Governance of the Arctic regions is then discussed along with the key institutional arrangements that assist with Arctic management.

Chapter 9 introduces the international law and policy instruments that apply to ocean energy and mining activities. It first differentiates energy and mining opportunities between the continental shelves and the deep seabed; it then discusses the role of the LOSC in energy and mineral development. Organizations that oversee energy and mining activities are then reviewed. A brief summary of marine energy and mineral resources and their management in the continental shelf and deep sea areas ensues.