

Contents

Abbreviations	XV
Introduction	1
I. Global Shipping and the Marine Environment	1
II. Particularly Sensitive Sea Areas and the International Maritime Organization	2
III. Aims of this treatise	3
IV. Synopsis	4
Part 1: The Marine Environment: Oceans under Threat	5
Chapter 1: The Oceans – Utilisation and Conflicts	5
I. The Marine Environment: Subject and Purpose of Protection	5
1. Oceans and seas – main physical and chemical properties	6
2. Functions of the Oceanic Ecosystem.....	7
a) Habitat for Flora and Fauna.....	8
aa) Benthos	8
bb) Pelagic Environment.....	9
cc) Example: Coastal Areas.....	10
dd) Example: Deep Sea.....	12
b) Buffer within the Climate System	13
c) Food Repository.....	14
d) Intrinsic Value.....	15
II. Conflicting Uses of the Oceans.....	16
1. Shipping.....	17
2. Tourism.....	17
3. Off-shore Mining.....	19
4. Fishing and Exploitation of other Living Marine Resources.....	20
5. Energy Production	21
III. Concluding Remarks.....	22
Chapter 2: Threats to the Marine Environment: Pollution and Physical Damage.....	23
I. Sources of Pollution	23
II. Types of Pollutants.....	24
1. Hydrocarbon Compounds.....	25
2. Persistent Toxic Substances	27

3. Heavy Metals.....	28
4. Radioactive Materials.....	29
5. Nutrients	30
III. Shipping-Related Threats to the Marine Environment.....	31
1. Operational Pollution	31
2. Accidental Pollution.....	34
3. Damage to Habitats and Animals.....	35
Part 2: Instruments to Protect Specific Marine Areas	37
Chapter 3: Protection of Specific Marine Areas	37
I. Introduction to the Concept of Marine Protected Areas.....	37
1. Historical Development and Basic Definitions.....	38
2. Underlying Rationale	39
II. Establishing Marine Protected Areas.....	42
1. Location, Size and Scientific Criteria	43
2. Objectives	45
3. Administration and Management: Prerequisite for Success of MPAs.....	46
III. Related Developments in International Environmental Policy.....	48
Chapter 4: Protection of Marine Areas in International Law – Basic Principles.....	50
I. Introduction: Acceptance in International Law versus Unilateral Measures	51
II. Relevant Principles of International Environmental Law and International Law of the Sea	52
1. Traditional Ocean Governance: Freedom of Navigation.....	54
2. Compliance with Standards: Principle of Flag-State Enforcement	55
3. Principle of Sustainable Development	56
4. Principle of Preventive Action	59
5. Precautionary Principle	60
III. United Nations Convention on the Law of the Sea	63
1. Basic Rules for the Protection of the Marine Environment	65
2. Maritime Zones as Determinants of the Protective Regime.....	68
a) Territorial Sea	69
b) Exclusive Economic Zone	70
c) High Seas	74
d) Straits used for International Navigation.....	75
e) Archipelagic Waters	78
f) Unique Characteristics of Port State Jurisdiction.....	80
3. Special Rules for Areal Protection in Part XII of UNCLOS	82

4. Incorporation of IMO Regulations through UNCLOS	
Rules of Reference	86
5. Relation to other Multilateral Agreements	90
IV. Implications of the Convention on Biological Diversity	91
V. Summarising Remarks	94
Chapter 5: Marine Protected Areas in Multilateral Instruments	95
I. Global International Law	95
1. Protective Mechanisms of the MARPOL Convention	96
a) Special Areas	97
aa) Procedural Aspects	98
bb) Substantive Aspects	99
b) SO _x Emission Control Areas	102
2. Ramsar Sites	104
3. UNESCO World Heritage Sites & Biosphere Reserves	107
II. Regional International Law	109
1. Kingston SPAW Protocol	111
2. Barcelona Protocol	113
3. Helsinki Convention: Establishing a Network of Baltic	
Sea Protected Areas	116
4. OSPAR Convention	118
5. Nairobi SPA Protocol	120
6. Antarctic Specially Protected Areas under the Antarctic	
Treaty System	122
7. Other Regional Agreements	127
III. Concluding Remarks: Similarities – Contrasts –	
Improvement Opportunities	131
Part 3 Particularly Sensitive Sea Areas: an IMO Instrument to	
Protect Marine Areas	135
Chapter 6: Protection of the Marine Environment through IMO	
within the System of International Institutions	135
I. International Organisations Addressing Marine Matters	135
II. Legal Framework of IMO Efforts to Protect the Marine	
Environment	140
1. Legislative Competences of International Organisations	140
a) Means of Establishing Rules and Standards	141
b) Determination of the Legal Quality: Binding and	
Recommendatory Acts	143
2. Legal Basis for the Work of IMO	145
III. Instruments Established and Governed by IMO	148
1. Multilateral Treaties: Conclusion and Amendment	148
2. Soft-Law Instruments Adopted by IMO	150
3. Some Remarks on the Impact of IMO Instruments on	
Marine Environment Protection	152

Chapter 7: Development and Structure of the PSSA Concept: Implementation and Coordination of Protective Measures	154
I. IMO Assembly Resolution A.982(24): Implementing the Concept	155
1. Content and Structure of the Guidelines	155
2. Development of the Guidelines and Adoption by the Assembly in 1991	156
3. Review 2001 and 2005: Reasons and Results	157
II. Designation: Requirements and Procedures	163
1. Criteria for Particular Sensitivity	163
2. Risks Posed by International Shipping	166
3. Size and Biogeographical Characteristics of the Area	167
4. Establishment of Protected Area Networks	169
5. Designation Procedure within IMO	170
a) Course of the Procedure	170
b) Requirements for Proposing Governments	173
III. Consequences of a Designation	175
1. Charting of PSSAs and APMs	175
2. Enforcement of Protective Measures	178
3. Protection without Protective Measures	179
4. Additional obligations for the Applying State to Protect the PSSA	181
IV. Concluding Remarks	184
Chapter 8: Associated Protective Measures as the Essential Part of a PSSA	184
I. Protective Measures Pursuant to the PSSA Guidelines	185
1. Legal Bases: Paragraph 7.5.3 of the PSSA Guidelines	185
a) Section (i) and (ii)	185
b) Section (iii)	186
2. Preliminary Findings	189
II. Options for Protective Measures	189
1. Navigational Aids	190
a) Routeing Measures	190
b) Ship Reporting Systems	197
c) Vessel Traffic Services	200
d) Pilotage	202
2. Discharge Restrictions	204
3. Standards concerning Construction, Design, Equipment and Manning of Ships	207
4. Other Measures	209
III. Establishment of APMs in Buffer Zones and Outside PSSAs	213
IV. Procedural Requirements and Assessment of APM Proposals	214
V. Similarities and Differences of Hitherto Designated Areas	216
1. Marine Areas Designated as PSSAs	216

2. Approved APMs.....	224
3. Rejected APMs.....	230
4. Particularly Sensitive Sea Areas – Overview.....	231
Part 4 The PSSA Concept – Analysis and Assessment	233
Chapter 9: Comparison between PSSAs and other Regimes in International Law	233
I. Protecting Vulnerable Marine Areas in International Law: Synopsis	233
1. Particularities of Protective Regimes	233
a) Procedural Issues	234
b) Criteria and Prerequisites for Protection.....	237
c) Availability and Enforcement of Protective Measures.....	241
2. Comparative Remarks	242
II. Relationship of the Protective Regimes: Progression towards Collaboration.....	244
1. Attempt to Systematise Protective Approaches: Are PSSAs Marine Protected Areas?.....	244
2. Synergies of the PSSA Concept and other Regimes	247
III. Summarising Remarks	249
Chapter 10: Legal Quality of the PSSA Guidelines and their Effect on Jurisdiction to Implement and Enforce Protective Measures	250
I. IMO Assembly Resolution A.982(24).....	250
1. Legal Basis and Character of the PSSA Guidelines.....	250
2. Binding Force of PSSAs and their Associated Protective Measures.....	252
a) PSSAs and Article 211(6) of UNCLOS	252
b) Implementation of General Obligations Contained in Part XII of UNCLOS	253
c) APMs as Generally Accepted International Rules and Standards.....	254
aa) Feasibility of this Interpretation.....	255
bb) Legality of this Interpretation	257
3. Preliminary Remarks	258
II. Implications for the Balance between Environment Protection and Freedom of Navigation	259
1. Modification of the Status Quo – Legislation and Enforcement	259
a) Territorial Sea	260
aa) Legislative Jurisdiction	260
bb) Enforcement Jurisdiction	261
b) Exclusive Economic Zone	262
c) Straits and Archipelagic Waters	263
2. Summarising Remarks.....	266
a) PSSA Status: Additional Rights or Added Value?.....	266

b) Modified Interpretation of Indeterminate Legal Terms	268
3. Long-term Implications: Contribution to Customary International Law?	271
III. PSSAs on the High Seas – Competences and Responsibilities	274
1. Preliminary Considerations and Political Initiatives	275
2. Legal Framework for High-Seas MPAs	277
3. Existing High-Seas Specially Protected Zones	278
4. Options for the Implementation of the PSSA Concept on the High Seas	280
IV. Main Findings	282
Chapter 11: PSSAs and Ocean Governance: Current Inter-dependencies and Prospects for Future Developments	283
I. Past Achievements: the PSSA Concept’s Impact on Ocean Governance	284
1. Interzonal Approach to Coastal State Jurisdiction for Marine Environment Protection	284
2. Cooperation between States	285
3. Influence on other IMO Instruments: Evolution of Routeing Measures	286
4. Application of a Precautionary Approach to Marine Environment Protection	288
II. Perspectives for Future Developments of the Concept	290
1. Recent Challenges to the Concept	290
a) Designations of Large and Disparate Marine Areas	291
b) Consequences: Redesign of the PSSA Concept	295
2. Initial Suggestions for a Future Protective Regime	296
a) Determining the Adequate Instrument to Develop a Multilateral MPA Regime	297
b) Material Legal Prerequisites	300
c) Institutional Arrangements	302
III. Concluding Remarks	305
Summary	307
Annex	329
Bibliography	343
Index	373