

**Canada's National Programme of Action
for the
Protection of the Marine Environment
from
Land-based Activities (NPA)**

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for the Protection of the Marine Environment
from Land-based Activities

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PREFACE

Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA) responds to an international call to protect the marine environment through co-ordinated actions at local, regional, national and global levels. The major threats to the health, productivity and biodiversity of the marine environment result from human activities on land — in coastal areas and further inland. Some 80% of the pollution load in the oceans originates from land-based activities. This includes municipal, industrial and agricultural wastes and runoff, as well as atmospheric deposition. These contaminants affect the most productive areas of the marine environment, including estuaries and nearshore coastal waters. The marine environment is also threatened by physical alterations of the coastal zone, including destruction of habitats of vital importance to maintaining ecosystem health (UNEP, 1995).¹

The protection of the marine environment in Canada is a responsibility shared by all levels of government, and a number of initiatives for its protection are either in place or being developed. In view of the reality of shared responsibility and the cost-effectiveness of building on existing programmes, the value of the NPA lies in its co-operative and collaborative approach to preventing pollution from land-based sources and protecting habitat in the nearshore or coastal zone. The NPA actions include monitoring existing actions when they are deemed adequate; strengthening existing actions when they are deemed inadequate; and proposing new actions for immediate preventative and remedial measures based on existing knowledge, resources, plans and processes.

Priorities for action are based on severity of risk and adequacy of control measures. National priorities for action focus on those problems that can most effectively be dealt with through national and international actions. Regional priorities for action focus on those problems that can best be addressed through regional and community-based actions. Implementation of the NPA involves using sustainable and integrated environmental management, as well as other approaches such as the harmonization of integrated coastal management, river basin management and land-use planning.

The NPA is a collective federal, provincial and territorial effort. It addresses issues on both regional and national levels and reflects input from two rounds of consultations. It will evolve with time and will be kept under review to keep priorities current and to develop further concrete actions and capacities to achieve the goals of the NPA.

¹ See page 5, Literature Cited.

EXECUTIVE SUMMARY

Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA) responds to an international call to protect the marine environment through co-ordinated actions at local, regional, national and global levels. It also responds to Canadians who expect clean oceans and sustainable development.

Canada's goals under the NPA are to:

- protect human health;
- reduce the degradation of the marine environment;
- remediate damaged areas;
- promote the conservation and sustainable use of marine resources; and
- maintain the productive capacity and biodiversity of the marine environment.

The major threats to the health, productivity and biodiversity of the marine environment result from human activities on land — in coastal areas and further inland. Some 80% of the pollution load in the oceans originates from land-based activities. This includes municipal, industrial and agricultural wastes and runoff, as well as atmospheric deposition. These contaminants affect the most productive areas of the marine environment, including estuaries and nearshore coastal waters. The marine environment is also threatened by physical alterations of the coastal zone, including destruction of habitats of vital importance to maintaining ecosystem health (UNEP, 1995).¹

The protection of the marine environment in Canada is a responsibility shared by all levels of government, and a number of initiatives for its protection are either in place or being developed. In view of the reality of shared responsibility and the cost-effectiveness of building on existing programmes, the value of the NPA lies in its co-operative and collaborative approach to preventing pollution from land-based sources and protecting habitat in the nearshore or coastal zone.

The NPA actions include monitoring existing actions when they are deemed adequate; strengthening existing actions when they are deemed inadequate; and proposing new actions for immediate preventative and remedial measures based on existing knowledge, resources, plans and processes.

Priorities for action are based on severity of risk and adequacy of control measures. National priorities for action focus on those problems that can most effectively be dealt with through national and international actions. Regional priorities for action focus on those problems that can best be addressed through regional and community-based actions.

Implementation of the NPA involves using sustainable and integrated environmental management, as well as other approaches such as the harmonization of integrated coastal management, river basin management and land-use planning. Canada's NPA is based on the principles of sustainable development, integrated management and the precautionary approach.

¹ See page 5, Literature Cited.

The NPA is a collective federal, provincial and territorial effort. It addresses issues on both regional and national levels and reflects input from two rounds of consultations. It will evolve with time and will be kept under review to keep priorities current and to develop further concrete actions and capacities to achieve the goals of the NPA.

Recommended NPA actions include the following:

- Monitor existing actions that are deemed adequate. Point-source controls for contaminants originating within Canada appear to be adequately addressed with the exception of sewage. Regulations and controls on dredging and sediment disposal, water diversions and land-use practices also appear adequately addressed.
- Strengthen existing actions when they are deemed inadequate. Measures for public understanding, awareness and involvement need to be strengthened. One tool would be an information clearing house for pollution prevention and habitat protection.
- Undertake proposed new actions for immediate preventative and remedial action. These include upgrading infrastructure for sewage treatment and stormwater runoff, and developing guidelines and codes of practice for reducing non-point sources of contaminants.
- Institute a national framework and support mechanisms for coastal zone management.
- Conduct applied research, assessment and monitoring activities to obtain knowledge needed for appropriate action.
- Develop reporting requirements and provide annual progress reports on NPA implementation.
- Keep priorities current and develop further concrete actions and capacities to achieve the goals of the NPA.
- Use regional ecosystem initiatives to pursue collaborative regional and community-based actions.
- Expand NPA coverage to address issues in Northern Quebec, Hudson Bay and James Bay.
- Promote regional and global controls on persistent organic pollutants and heavy metals.

TABLE OF CONTENTS

PREFACE	i
EXECUTIVE SUMMARY	iii
CHAPTER 1 INTRODUCTION	
1.1 Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities	1
1.1A <i>Jurisdiction</i>	1
1.2 Background	2
1.3 Global Programme of Action for the Protection of the Marine Environment from Land-based Activities	2
1.4 Developing Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities	4
1.4A <i>Background</i>	4
1.4B <i>Approach</i>	4
Literature Cited	5
CHAPTER 2 METHODS	
2.1 Identification and Assessment of Problems	6
2.2 Establishment of Priorities for Action	7
2.3 Setting Goals and Management Objectives	7
2.4 Identification, Evaluation and Selection of Strategies and Actions	7
2.5 Identification of Criteria for Evaluation of Effectiveness	8
2.6 Development of Programme Support Elements	8
CHAPTER 3 NATIONAL ISSUES	
Introduction	9
3.1 Identification and Assessment of Problems	9
3.1A <i>Contaminants</i>	9
3.1B <i>Physical Alteration and Destruction of Habitat</i>	12
3.2 Establishment of Priorities for Action	14
3.2A <i>Contaminants</i>	15
3.2B <i>Physical Alteration and Destruction of Habitat</i>	16
3.3 Setting Goals and Management Objectives	16
3.3A <i>Contaminants</i>	16
3.3B <i>Physical Alteration and Destruction of Habitat</i>	19
3.4 Identification, Evaluation and Selection of Strategies and Actions	19
3.4A <i>Contaminants</i>	20
3.4B <i>Physical Alteration and Destruction of Habitat</i>	21
3.5 Identification of Criteria for Evaluation of Effectiveness	22
3.5A <i>Contaminants</i>	22

3.5B	<i>Physical Alteration and Destruction of Habitat</i>	23
3.6	Programme Support Elements	23
3.6A	<i>Institutional Support</i>	23
3.6B	<i>Clearing House Mechanisms for Pollution Prevention and Habitat Protection</i>	23
3.6C	<i>Monitoring (Reports on Implementation and Effectiveness)</i>	24
3.7	International Considerations/Linkages	24
3.8	Conclusions and Next Steps	25
3.8A	<i>Conclusions</i>	25
3.8B	<i>Next Steps</i>	26
	Literature Cited	26

CHAPTER 4 PACIFIC REGION

	Introduction	27
4.1	Identification and Assessment of Problems	29
4.1A	<i>Contaminants</i>	29
4.1B	<i>Physical Alteration and Destruction of Habitat</i>	34
4.2	Establishment of Priorities for Action	37
4.2A	<i>Contaminants</i>	37
4.2B	<i>Physical Alteration and Destruction of Habitat</i>	38
4.3	Setting Goals and Management Objectives	38
4.3A	<i>Contaminants</i>	39
4.3B	<i>Physical Alteration and Destruction of Habitat</i>	39
4.4	Strategies and Actions	40
4.4A	<i>Contaminants</i>	40
4.4B	<i>Physical Alteration and Destruction of Habitat</i>	41
4.5	Next Steps	43
	Literature Cited	44

CHAPTER 5 ARCTIC REGION

	Introduction	46
5.1	Identification and Assessment of Problems	47
5.1A	<i>Contaminants</i>	47
5.1B	<i>Physical Alteration and Destruction of Habitat</i>	50
5.2	Establishment of Priorities for Action	53
5.2A	<i>Contaminants</i>	53
5.2B	<i>Physical Alteration and Destruction of Habitat</i>	55
5.3	Setting Goals and Management Objectives	56
5.3A	<i>Contaminants</i>	56
5.3B	<i>Physical Alteration and Destruction of Habitat</i>	56
5.4	Strategies and Actions	57
5.4A	<i>Contaminants</i>	57
5.4B	<i>Physical Alteration and Destruction of Habitat</i>	58
5.4C	<i>Linkages</i>	59
5.5	Next Steps	60

Literature Cited	63
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CHAPTER 6 SOUTHERN QUEBEC/ST. LAWRENCE REGION

Introduction	65
6.1 Identification and Assessment of Problems	66
6.1A <i>Contaminants</i>	66
6.1B <i>Physical Alteration and Destruction of Habitat</i>	70
6.2 Establishment of Priorities	72
6.2A <i>Contaminants</i>	73
6.2B <i>Physical Alteration and Destruction of Habitat</i>	74
6.3 Setting Goals and Management Objectives	74
6.3A <i>Contaminants</i>	75
6.3B <i>Physical Alteration and Destruction of Habitat</i>	75
6.4 Strategies and Actions	76
6.4A <i>Contaminants</i>	76
6.4B <i>Physical Alteration and Destruction of Habitat</i>	80
6.5 Next Steps	82
Literature Cited	83
Additional References	83

CHAPTER 7 ATLANTIC REGION

Introduction	85
7.1 Identification and Assessment of Problems	87
7.1A <i>Contaminants</i>	87
7.1B <i>Physical Alteration and Destruction of Habitat</i>	96
7.2 Establishment of Priorities for Action	101
7.2A <i>Contaminants</i>	101
7.2B <i>Physical Alteration and Destruction of Habitat</i>	102
7.3 Setting Goals and Management Objectives	103
7.3A <i>Contaminants</i>	103
7.3B <i>Physical Alteration and Destruction of Habitat</i>	104
7.4 Strategies and Actions	104
7.4A <i>Contaminants</i>	104
7.4B <i>Physical Alteration and Destruction of Habitat</i>	106
7.5 Next Steps	107
Literature Cited	108
Additional References	110

LIST OF APPENDICES

1 Terminology	111
2 List of Acronyms/Abbreviations	116
3 Contacts from the NPA Advisory Committee	119

LIST OF FIGURES

1.1	Drainage Areas of Canada.....	3
4.1	British Columbia	27
4.2	Population Density in British Columbia	29
4.3	The Georgia Basin-Puget Sound Area Showing Contaminated Shellfish Closures.....	30
5.1	The Canadian Arctic.....	46
6.1	St. Lawrence River Drainage Basin: Area Covered by this Chapter and Key Industrial Facilities in the Area.....	66
7.1	Atlantic Canada	85
7.2	Nutrient Loading Over Time in Three Prince Edward Island Estuaries.....	93
7.3	Distribution of HABs in Atlantic Canada	95

LIST OF TABLES

3.1	Extent in 1996 of Municipal Sewage Treatment Serving Urban Coastal Communities (Greater than 1000 People) in Canada.....	10
3.2	National Priorities	17
7.1	Atlantic Region Rural-Urban Population Distribution, 1991.....	86
7.2	Summary of Closures in Atlantic Region of Classified Shellfish Growing Areas, 1996.....	88
7.3	Number of Federally Registered Food Processing Plants in Atlantic Canada	92

CHAPTER 1 INTRODUCTION

1.1 Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities

The major threats to the health, productivity and biodiversity of the marine environment originate primarily from human activities on land, both at home and abroad. It is estimated that approximately 80% of marine pollution stems from land-based activities, and the remaining 20% from sea-based activities. As part of an international initiative to address these major threats in an integrated and co-ordinated manner, Canada and 108 other nations adopted the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) in November 1995. This international agreement calls for participating countries to develop national and regional programmes of action.

Ultimately, Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA) aims to protect the marine environment through co-operative solutions. The NPA has been developed through participation and collaboration among federal, provincial and territorial governments. Consultations involved Aboriginal peoples and stakeholders, including environmental groups, industry, academia, communities and the Canadian public.

Canada's goals under the NPA are to:

- protect human health;
- reduce the degradation of the marine environment;
- remediate damaged areas;
- promote the conservation and sustainable use of marine resources; and

- maintain the productive capacity and biodiversity of the marine environment.

Many programmes are already in place, or are being actively developed, to protect the marine environment. The NPA takes into account the priorities and actions of these existing programmes and recognizes the cost-effectiveness of building on them.

Land-based actions needed to address priority marine issues are identified in the NPA. However, those priority issues requiring sea-based actions are addressed through other global and national mechanisms.

Annual progress reports on implementing the NPA will assist in examining the effectiveness and efficiency of the plan. Canada's NPA also recognizes the benefit of using a phased approach in its development. This initial phase focuses on identifying problems, priorities, goals, management objectives, and existing and potential strategies and actions. Further consultations will build on this initial phase to keep priorities current, develop further concrete actions, and strengthen the capacity to achieve results.

1.1A Jurisdiction

In Canada, the protection of the marine environment is a responsibility shared by all levels of government and therefore requires co-operation and collaboration. At least 23 federal legislative acts in Canada address issues of relevance to the marine environment, and 21 federal departments and agencies have a role in the management of the oceans sector. In addition, a multitude of provincial or territorial

acts are administered by coastal provinces and territories.

Responsibility for the management of the marine environment and resources in land claims settlement areas is being shared with the Aboriginal peoples involved. It has been established, as well, that responsibility for protection of the marine environment extends beyond current institutional arrangements to include all stakeholders.

Canada's NPA provides a management framework for co-ordinating the activities and programmes of the various levels of government with responsibilities for nearshore coastal areas.

Federal jurisdiction addresses:

- navigation, shipping, oceans management, marine protected areas, fisheries management, marine mammals, migratory birds, ocean disposal, marine environmental quality, lands reserved for Aboriginal peoples, and national concerns related to international treaties, criminal law, peace, order and good government.

Provincial jurisdiction addresses:

- property and civil rights, public lands (dry land, land covered by freshwater inland or by saltwater in certain straits and passages), wildlife, minerals, freshwater, and matters of a local or private nature.

1.2 Background

Canada is a maritime nation:

- Eight of 10 provinces and three territories border three oceans: North Pacific, Arctic and North Atlantic.
- Canada has the longest coastline in the world (243 789 km, including islands).

- Canada has the second-largest continental shelf (3.7 million km²) and a total offshore area of more than 6.5 million km².
- Canada's coastline extends over 40 degrees of latitude and includes a vast wealth of geological and ecological diversity (World Coast Conference, 1993; Fraser, 1996).
- Complex ecosystems along the coasts, such as estuaries and wetlands, connect inland freshwater systems to nearshore marine waters.

Approximately 23% of Canadians live in coastal areas (defined as areas within 60 km of the coast). Populations on the Pacific coast are rapidly expanding, and populations on the Atlantic coast and sparsely populated Arctic coast are increasing, but more slowly. The total value of economic activity in Canada's coastal areas is estimated at \$135 billion per year (World Coast Conference, 1993). However, the importance of the marine environment extends beyond economic value to a social and cultural significance for the people of Canada. For coastal residents of all cultural backgrounds, oceans are often an important source of food. There is an intimate link between the health and well-being of coastal populations, sustainable use of coastal resources, and the health, productivity and biodiversity of the marine environment.

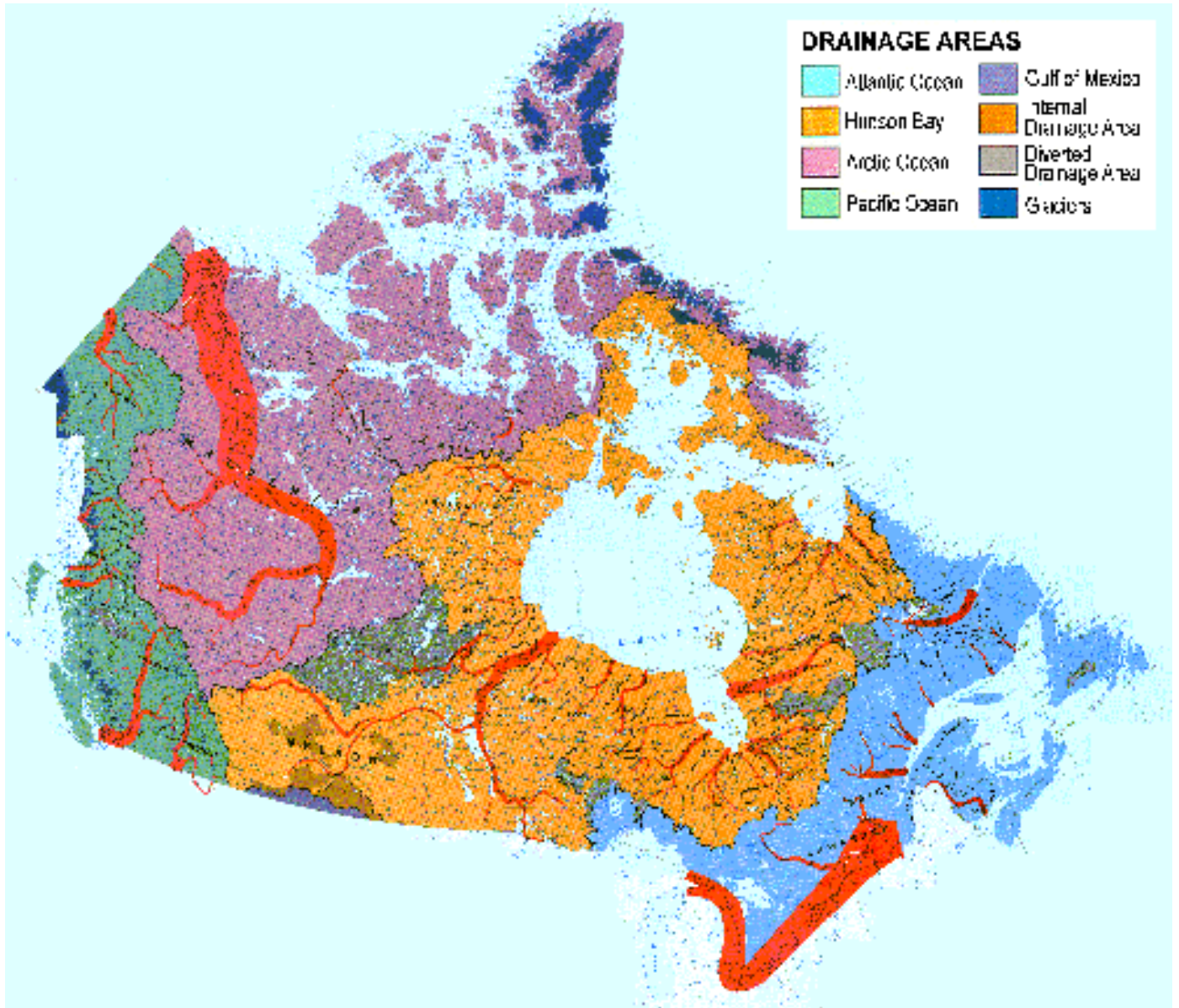
1.3 Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

The goals of the GPA are:

- protection of the marine environment; and
- promotion of the conservation and sustainable use of marine resources.

Achieving these goals is based on maintaining or restoring the marine ecosystem by preventing its degradation from land-based activities.

Figure 1-1 Drainage Areas of Canada



Implementation involves using sustainable and integrated environmental management, as well as other approaches such as the harmonization of integrated coastal management, river basin management and land-use planning.

The GPA is designed to assist countries in taking action to prevent, control and/or eliminate marine degradation from land-based activities either jointly in a regional approach (e.g., the Arctic, the Gulf of Maine), or individually in a national approach. Development of programmes of action takes place within a country's (or countries') framework of policies, priorities and resources.

1.4 Developing Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities

1.4A Background

Canada's first step in developing the NPA was the release of a *National Discussion Paper on Developing Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities*. The discussion paper, released by the Ministers of the Environment and Fisheries and Oceans on Oceans Day in 1996 (Federal/Provincial/Territorial Advisory Committee on the NPA, 1996), was used as the basis for preliminary consultations with Aboriginal peoples and stakeholders. It was then used as the basis for regional discussion papers and workshops to identify regional priorities and activities.

As a second step, this input was used to prepare a draft *Canada's National Programme of Action (NPA) for the Protection of the Marine Environment from Land-based Activities*. In March 1999, the draft NPA was released by Ministers of the Environment and Fisheries and

Oceans for a 60-day public consultation period. Comments from the public consultation have helped in the finalization of the document.

1.4B Approach

The NPA will assist agencies and jurisdictions in identifying priorities and actions. It is based on existing commitments under existing laws and policies to prevent and control pollution and protect habitat. The NPA is based on existing resources and an approach of increasing cost-effectiveness, efficiency and co-operation among existing policies, programmes, resources and legislation. It will also be responsive to emerging policies, priorities and initiatives.

Canada's NPA is based on the principles of sustainable development, integrated management and the precautionary approach.

The goals of Canada's NPA were first set out in the 1996 discussion paper and are consistent with those endorsed by the GPA. They are to:

- protect human health;
- reduce the degradation of the marine environment;
- remediate damaged areas;
- promote the conservation and sustainable use of marine resources; and
- maintain the productive capacity and biodiversity of the marine environment.

In Canada, the preservation of traditional foods and way of life for Aboriginal peoples and coastal communities is a special concern. The GPA also calls for food security, recognizing that contaminants entering the marine environment, and the destruction and alteration of marine habitat, have direct implications for food security and the alleviation of poverty worldwide. Aboriginal communities country-wide rely heavily on fisheries resources as a source of food and for social and ceremonial

purposes. As a result, fisheries resources and their sustainability are of particular importance to Aboriginal communities.

The NPA focus for pollution prevention and control is on land-based sources of:

- sewage;
- persistent organic pollutants;
- radionuclides;
- heavy metals;
- oils/hydrocarbons;
- nutrients;
- contaminated sediments; and
- litter.

The NPA focus for protection of marine habitat is on activities associated with:

- shoreline construction/alteration;
- inter-tidal and sub-tidal alteration;
- mineral and sediment extraction/alteration;
- wetland and saltmarsh alteration;
- marine waters and coastal watershed alteration; and
- biological alteration.

(For definitions of contaminants and types of habitat alteration see Appendix 1.)

In keeping with a phased approach in developing Canada's NPA, the regional sections of this document do not currently address all areas. As well, not all management objectives, strategies and actions are fully developed. The intent of this phase of the NPA is to raise awareness, generate ideas and present initial actions. The ultimate objective of the NPA is the development and implementation of concrete actions to protect the marine environment.

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CHAPTER 2 METHODS

The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) offers a framework methodology for establishing national and regional programmes of action. Canada has used this methodology to develop its National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA). This methodology involves a six-step process:

1. Identification and assessment of problems.
2. Establishment of priorities for action.
3. Setting goals and management objectives.
4. Identification, evaluation and selection of strategies and actions.
5. Identification of criteria for evaluation of effectiveness.
6. Development of programme support elements.

2.1 Identification and Assessment of Problems

The nature and significance of impacts from sources of land-based activities are identified and assessed. These activities were examined within 14 categories (defined in Appendix 1) and are listed below.

Contaminants

- Sewage
- Persistent organic pollutants
- Radionuclides
- Heavy metals
- Oils/hydrocarbons
- Nutrients
- Contaminated sediments
- Litter

Physical Alteration and Destruction of Habitat

- Shoreline construction/alteration
- Inter-tidal and sub-tidal alteration
- Mineral and sediment extraction/alteration
- Wetland and saltmarsh alteration
- Marine waters and coastal watershed alteration
- Biological alteration

The GPA recommends that the identification and assessment of land-based activities include consideration of the severity of the problem in relation to:

- food security and poverty alleviation;
- public health;
- coastal and marine resources and ecosystem health, including biodiversity; and
- economic and social benefits and uses, including cultural values.

In addition, consideration should be given to the sources of degradation (such as point or non-point) and the specific areas of concern affected (such as critical habitats).

The NPA distinguishes between activities affecting the marine environment that are land-based and those that are of marine origin. “Land-based activities” are those taking place directly on land or that are connected to the land. In this regard, there are a number of activities in nearshore waters (e.g., coastal dredging for navigation or mining, and harbour developments) that can affect coastal habitat under tidal influence in a fashion similar to that of land-based activities. They are therefore included as land-based activities.

For example, in the Arctic, land-fast ice acts as an extension of the land. Breaking land-fast ice to lengthen the shipping season is, therefore, considered a land-based activity. Activities such as disposal of sediments beyond the nearshore sub-tidal zone are not considered as land-based for the purposes of the NPA. A similar case is made for the problem of biological alteration due to the introduction of alien species in ballast water. When ballast water exchange is offshore, it does not fall within the purview of the NPA; however, the Programme does address possible ballast water discharge from shipping operations within and adjacent to ports.

2.2 Establishment of Priorities for Action

In keeping with the approach recommended by the GPA, two principal considerations are used when establishing priorities for action.

First, the severity of existing or potential impacts is examined in the context of risk to human health and/or risk to the environment. Also considered are economic/social/cultural impacts and food security (traditional foods).

Second, the adequacy of existing control measures is included in the ranking process. In this way, greater attention is focused on the issues that would benefit from strengthened measures, such as regulations, guidelines, partnerships and community actions.

Based on these two principal considerations, categories of land-based activities are ranked as either a **high, medium** or **low priority**.

National priorities for action may differ from regional priorities because they focus on problems that:

- are commonly found in most or all regions of the country; or
- are shared by more than one region; or

- are global in nature and can be best dealt with effectively through national and international actions.

Regional priorities for action focus on those problems that can be addressed through regional and community-based actions.

2.3 Setting Goals and Management Objectives

Once national and regional priorities for action are established, appropriate management objectives¹ are assigned to each source of impact. Sources and receiving environments are both considered.

2.4 Identification, Evaluation and Selection of Strategies and Actions

In the context of Canada's NPA, the two primary strategies for protecting the marine environment from land-based activities are pollution prevention and integrated management of the coastal zone. To address priority contaminant and habitat alteration issues, specific actions, either already in place or proposed, are identified. In selecting the best actions for dealing with each priority issue, consideration is given to current best practices. Improved integrated planning and management processes are recommended where appropriate, as is the use of innovative economic instruments and incentives to encourage beneficial action.

¹ In the context of Canada's NPA, management objectives are interpreted as goals. These goals are analogous to the aims of the GPA.

2.5 Identification of Criteria for Evaluation of Effectiveness

Recognizing that priorities will change over time, strategies and actions will be reviewed periodically to ensure they remain effective and are linked to management objectives. Measures of effectiveness must be practical and cost-effective.

2.6 Development of Programme Support Elements

Support elements specific to the NPA will be required at both the national and regional levels. They are intended to provide the institutional support, guidance and review mechanisms needed to implement the NPA.