DARE TO BE DEEP

Charting Canada's Course to 2020

How Canada can meet its 2020 international marine conservation commitment

CPAWS
Canadian Parks & Wilderness Society

TABLE OF CONTENTS

INTRODUCTION

Every second breath we take comes from the ocean that covers 70% of our planet. The ocean also regulates the temperature of our planet, and provides us with an important source of protein and food.

The ocean supports a tremendous diversity of life from coastal areas to the deep sea, and contains 99% of the space available for life on Earth. From plankton to whales, marine species live in a delicate balance that can easily be disturbed by human activities, and cause a domino effect on species half-way around the world.

Canada has been given the extraordinary gift of having the world's longest coastline and vast reaches of the Arctic, Pacific, and Atlantic oceans. We are a people shaped by the sea—from our indigenous peoples, who have been nourished by the ocean for millennia, to early European settlers who travelled the ocean to reach this continent. Canadians who live great distances from the ocean are nevertheless connected to it through the mountain streams and lakes that all eventually make their way to the ocean.

Canada has an immense opportunity to be a global leader in marine conservation, by looking after this ecological gift we have been given by circumstance of our geography. Yet, our track record on marine conservation is dismal. In 147 years since Confederation, Canada has managed to protect 1.3 percent of its ocean.

As you will see in this report, when we compare Canada's marine conservation record to that of other marine countries, we are very clearly dragging our heels. Despite this, Canada has committed to conserve 10% of our ocean by 2020 under the International Convention on Biological Diversity. This commitment is a huge step forward in achieving CPAWS' goal of protecting at least half of our land and seascapes, but it will require a lot of hard work between now and then to achieve this goal.

While CPAWS has celebrated the creation of individual marine protected areas over the years, if we are going to reach the goal of 10% marine protection by 2020, we need to think bigger, work faster and on a much larger scale.

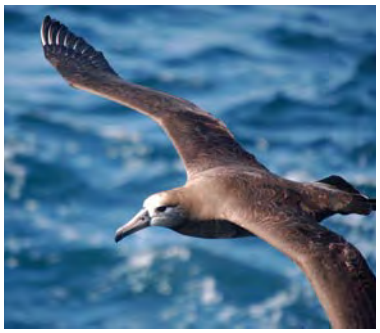
Economically, marine protected areas will help sustain our fisheries into the future. Marine protected areas (MPA) with no-take zones provide nurseries for many species, including a variety of fish of economic importance. Ecotourism opportunities for whale-watching, kayaking, and diving are also growing areas of economic diversification for rural coastal communities.

Being at the back of the pack when it comes to MPA network establishment is embarrassing, but it does afford Canada one benefit: we can learn from the rest of the world's successes. We can focus on what works and avoid what does not. So, what are other jurisdictions doing right and how can we emulate their successes?

Above: Canadian Arctic. Photo: A.S. Wright

Top left: Humpback whale. Photo: A.S. Wright

SETTING CANADA'S COURSE TO 2020



Setting this course to 2020 is timely. Canada has an incredible opportunity to protect some of the richest and most unique underwater ecosystems in the world. Based on the experience of more successful jurisdictions, we have identified eight important measures that if implemented will help Canada get from the bottom of the pack to a world leader in marine conservation.

Above right: Black-footed Albatross.

We know it will take a lot of effort to do this work properly. Stakeholders, governments and indigenous people all need to be included in this planning. The best available science will be required to make good decisions. Regular and ongoing investment on the part of the government is critical to making it happen. Even though the amount of work ahead is daunting, this need not mean that the timelines must take decades. The ocean simply cannot afford to remain unprotected and unmanaged, while Canada continues to waste time.

With political will, we have no doubt that Canada can meet our international target for marine protection and become a world leader in marine conservation. Drawing on the lessons from successful jurisdictions, Canada has no reason not to swing into action. Let's get started!

Stellar sea lions. Photo: A.S. Wright

Key elements of successful MPA network planning:

Political Leadership – In successful jurisdictions, political leaders have made marine conservation a leading priority, in both words and actions. Canada needs to do likewise by quickly establishing networks of marine protected areas. This will require Marine Protected Area (MPA) network planning, comprehensive marine planning, and implementation of those plans.

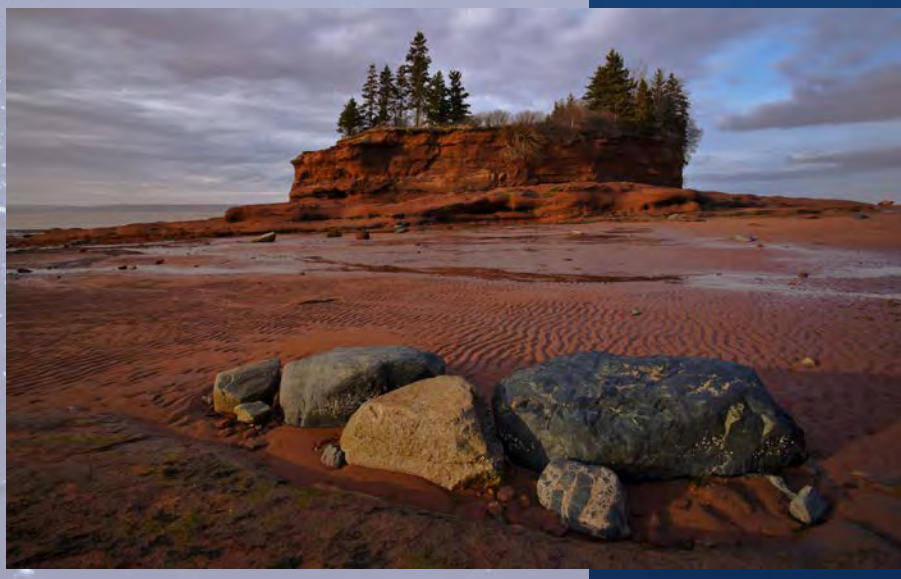
Timeline and Milestones – Successful jurisdictions have set and met timelines for marine conservation planning. Canada has set a new timeline of 2020 to achieve at least 10% of our ocean in marine protected areas, which is an important interim step towards CPAWS' goal of protecting at least half of our ocean. In order to reach the target, Canada needs a clear plan with firm milestones to achieve it. This will require prioritizing bioregions for MPA network planning and ensuring deadlines are met.

Guidelines for MPA Network Design – Canada is off to a good start with developing broad guidelines for MPA network design as part of the national MPA network framework. These words now need to be turned into action, and more work is required to provide specific guidance for MPA network planning in each bioregion, with the help of marine scientists in Canada who know these marine ecosystems.

Open and transparent process – In successful jurisdictions, the process for marine conservation planning has been open and transparent to all stakeholders. Canada has set out the broad steps for MPA network planning in the *National MPA Network Framework*,[1] and made a commitment to stakeholder involvement. These elements of the framework need to be fleshed out in more detail. Opportunities should be provided for meaningful public input at various stages in the MPA network planning process, and they should be tailored to the circumstances and needs of communities in the individual marine bioregions. In order to ensure transparency of the process, information should be readily available, for example through websites.

Dedicated and ongoing funding – Successful jurisdictions have assigned adequate funds to support marine conservation planning and implementation. Canada has allowed funding for ocean management and MPA network planning to fall to minimal levels over the past few years, and only recently announced a 5-year commitment of $37 million to strengthen marine and coastal conservation. While a welcome announcement, it still falls short of the Green Budget Coalition recommendation of $35 million per year for MPAs, and another $15.7 million for managing ocean development.[2]

Left: Halibut, Old Massett Pole by Donnie and Jaalen Edenshaw, Haida Gwaii. Photo: Sabine Jessen.



Bay of Fundy. Photo: Irwin Barrett

Atlantic puffin, Newfoundland and Labrador. Photo: Paul Regular

Socio-economic analysis – Other jurisdictions have produced a public analysis of both the social and economic costs and benefits of establishing a national network of MPAs. These analyses should be done in Canada on a bioregional basis and employ a variety of tools and approaches to ensure that Canadians fully understand **both** the contributions and costs of the network.

Science and decision support tools – Effective marine conservation requires scientific knowledge and an understanding of local conditions and ecosystems. Canada should draw on the best available science in planning our national MPA network, and employ a variety of decision support tools to ensure that we will design the best network to achieve our biodiversity conservation goals, and try to minimize the costs to other sectors.

MPA network planning in the context of comprehensive marine planning – Canada's *Oceans Act* and *Oceans Strategy* provide a basis for comprehensive marine planning in this country. Initial steps in marine planning have been taken in five ocean regions[3]. This planning must be expanded from an objectives level to full marine spatial planning, and incorporate MPA networks in this context. On the Pacific coast, the federal government has an opportunity to integrate its marine planning process with that of the province and First Nations.[4]

Right: Wolffish and lobster. Photo: Ocean Quest Adventure Resort

PART 1: WHAT HAS CANADA ACHIEVED COMPARED TO OTHER COUNTRIES?

The ocean is under increasing threats from climate change, overfishing and destructive fishing methods, pollution, increased marine traffic and industrial development. These issues are combining to put marine species and habitats under ever increasing pressure.

Top left: Killer whale. Photo: Duane Fuerter

Marine protected areas (MPAs)[5] offer an effective way to address multiple threats to a variety of species, creating sanctuaries for marine ecosystems to recover and species to thrive. According to recent studies, the most beneficial and effective MPAs are large (over 100 km^2) no-take reserves that are strictly enforced over a long period of time (more than 10 years).[6]

Scientific evidence and real world experience both point to the need for systematic planning of MPA networks,[7] rather than ad-hoc site-by-site designation, to ensure maximum conservation benefits and efficient use of planning resources.[8, 9] Like many other countries, Canada has most recently committed to establishing MPA networks covering a minimum of 10% of our ocean by 2020. Evidence suggests that MPA networks should be designed with the primary goal of protecting biodiversity, should give precedence to the most threatened species and ecosystems, and should adequately represent all species and ecosystems of interest.[10]

With the longest coastline in the world bordering the Arctic, Atlantic and Pacific oceans, the seventh largest marine jurisdiction in the world, and a strong maritime tradition, Canada has a significant global responsibility to lead the way in ocean stewardship and conservation. Despite multiple national and international commitments to establish networks of MPAs, less than two percent of Canada's ocean estate receives any form of meaningful protection in Canada.

Ocean estate includes internal waters, territorial sea (to 12 nautical miles (nm)) and exclusive economic zone (from 12nm to 200 nm)

Figure 1. The top 10 countries with the largest ocean estates[11] and the percentage of their ocean estate that is in MPAs.

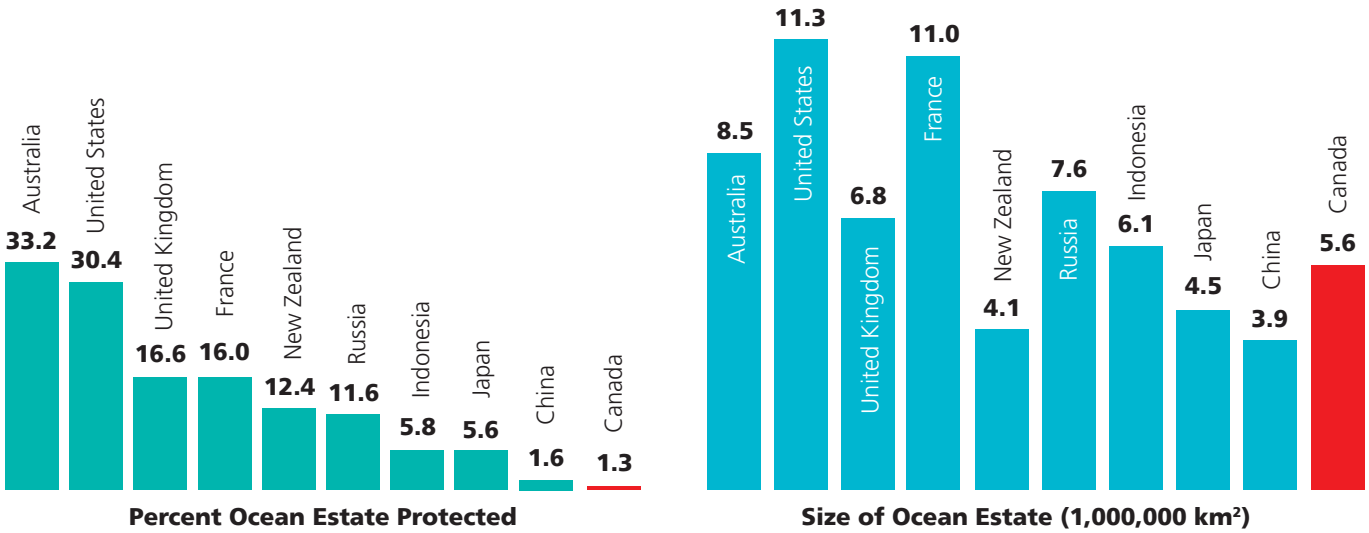


Figure 2. Top 10 countries with largest ocean estates, showing the percentage (rounded to nearest percentile) of their ocean estate that is protected as MPAs.

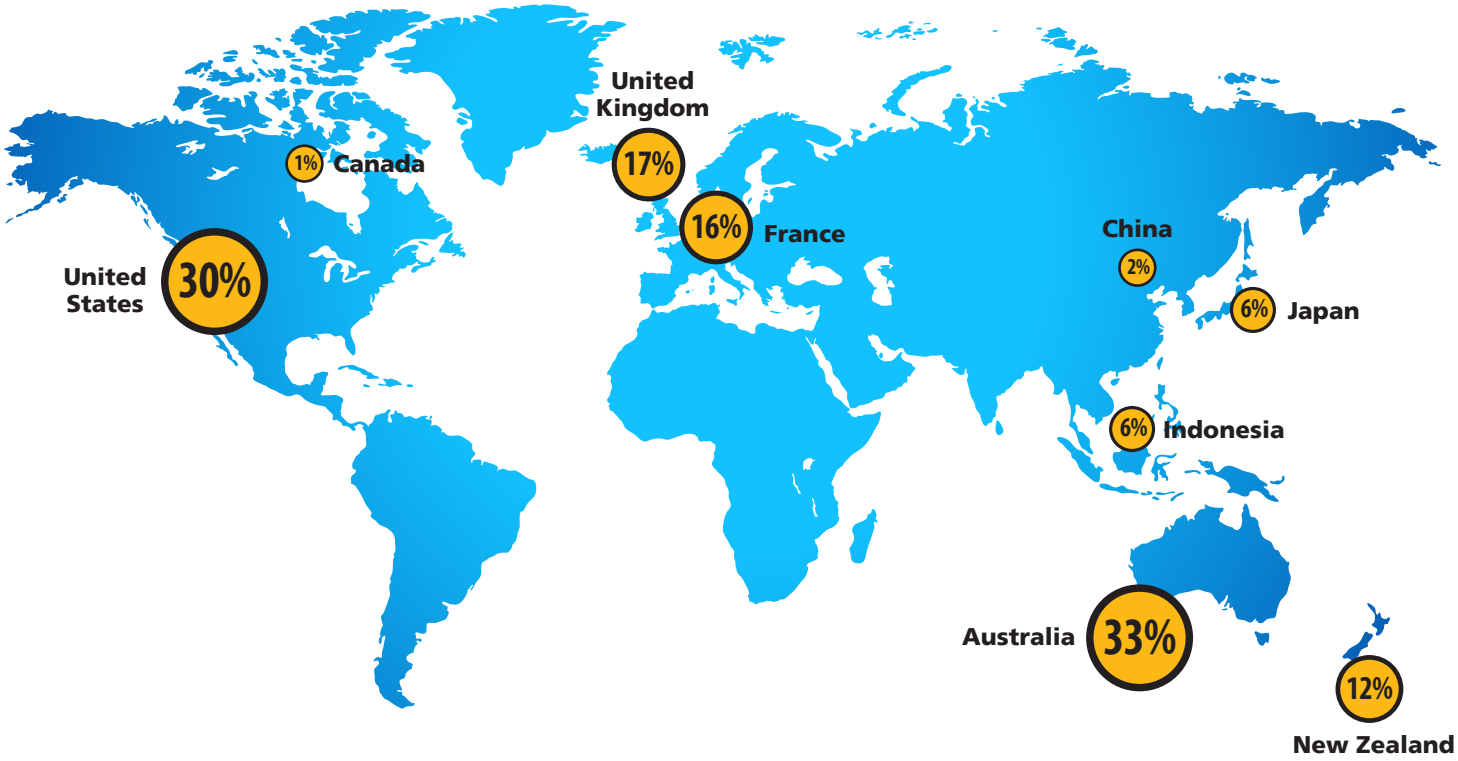
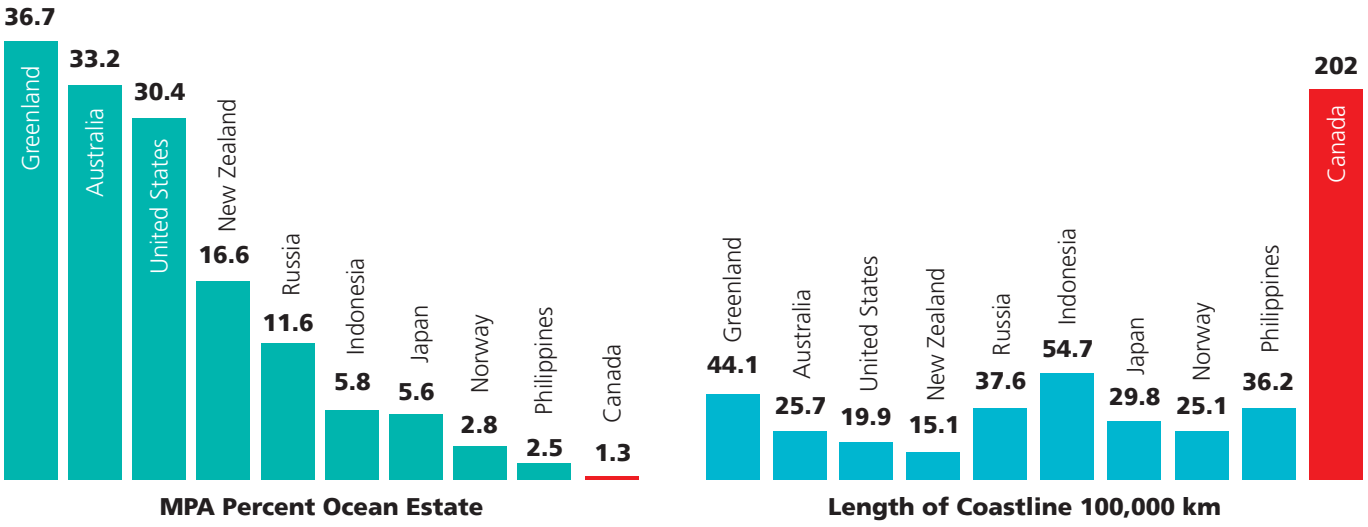


Figure 3. The top 10 countries with the longest coastlines and the percentage of their ocean estate that is in MPAs.



NEW INTERNATIONAL TREND – ESTABLISHING HUGE MPAS

Another more recent trend internationally is the establishment of huge (>100,000 sq km) MPAs, which partially accounts for some of the large percentage increases in MPA coverage in various jurisdictions. These MPAs include:

- New Caledonia, France (1.4 million sq km);
- South Georgia and South Sandwich Islands, UK/Argentina, (1.07 million sq km)
- Coral Sea, Australia (990,000 sq km);
- Chagos Archipelago, UK (640,000 sq km);
- Phoenix Islands, Kiribati (410,000 sq km);
- Papahānaumokuākea, US (360,000 sq km);
- Marianas Trench, US (250,000 sq km);
- Pacific Remote Islands, US (230,000 sq km).

These large MPAs build on the example set by the establishment in 1975 of the Great Barrier Reef Marine Park by Australia.[10]

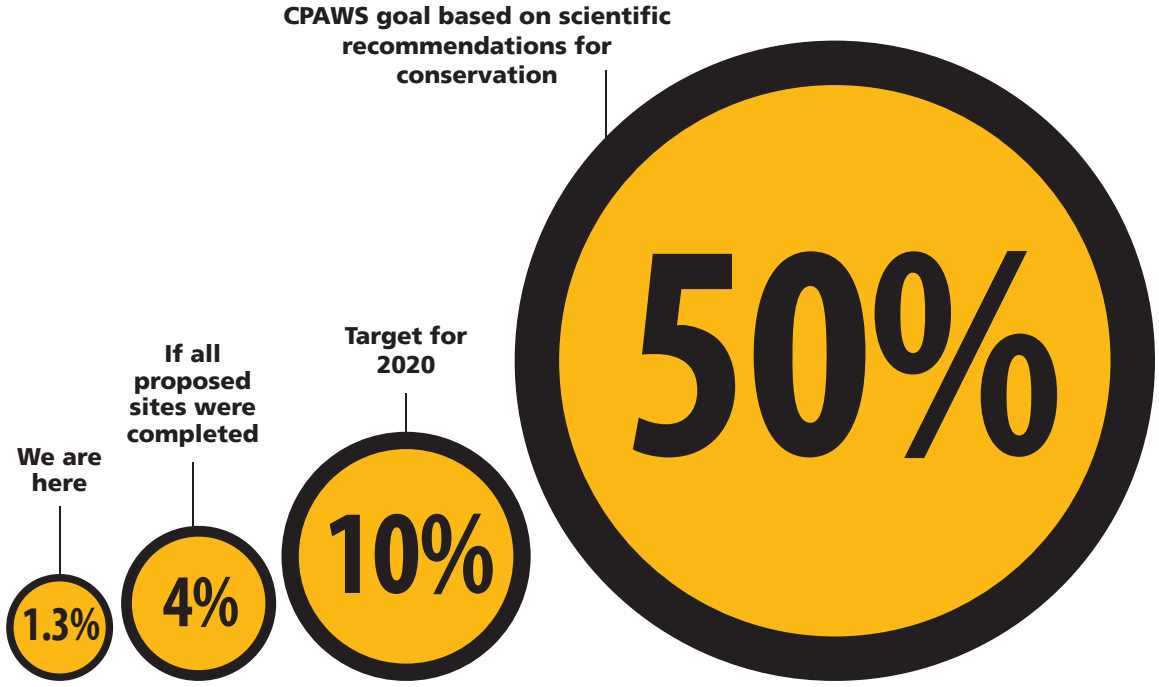
In Canada, the largest proposed MPA is Lancaster Sound, with a study area of 48,000 sq km. We encourage Canada to consider larger MPAs as it proceeds with MPA network planning in the Atlantic, Pacific, and Arctic oceans.

Bay of Fundy Photo: Irwin Barrett

Southern Strait of Georgia, BC. Photo: Leah Honka

GETTING TO 10% BY 2020

Figure 4.



Canada 's international commitment — protect at least 10% of our ocean estate (~500,000 sq km) by 2020

Existing MPAs ~61,000 sq km — 1.3% of Canada's ocean estate

MPA candidates ~143,000 sq km — 2.7% of Canada's ocean estate

Existing MPAs + MPA candidates — 204,000 sq km, 4% of Canada's ocean estate

CANADA'S INTERNATIONAL COMMITMENTS

Glass sponge reef, BC. Photo: Neil McDaniel

Canada has made multiple national and international commitments to establish networks of MPAs including:

- 1992 Statement of Commitment to Complete Canada's Networks of Protected Areas—to make every effort to accelerate the protection of areas representative of Canada's marine natural regions
- 2002 World Summit on Sustainable Development—to establish networks of marine protected areas by 2012
- 2002 Canada's Oceans Strategy—to develop a strategy for a national network of MPAs
- 2003 World Parks Congress—to establish by 2012 *"a system of effectively managed, representative networks of marine and coastal protected areas…"* that are *"…extensive and include strictly protected areas that amount to at least 20-30% of each habitat…"*
- 2004 United Nations Convention on Biological Diversity—to complete by 2012 *"comprehensive and ecologically representative national and regional systems of [marine] protected areas"*
- 2004 Canada's Oceans Action Plan—to *"…move forward on its Oceans Action Plan by […] establishing a network of marine protected areas"*
- 2006 United Nations Convention on Biological Diversity—to effectively conserve at least 10% of our marine and coastal areas by 2010
- 2010 United Nations Convention on Biological Diversity—to protect at least 10% of coastal and marine areas by 2020

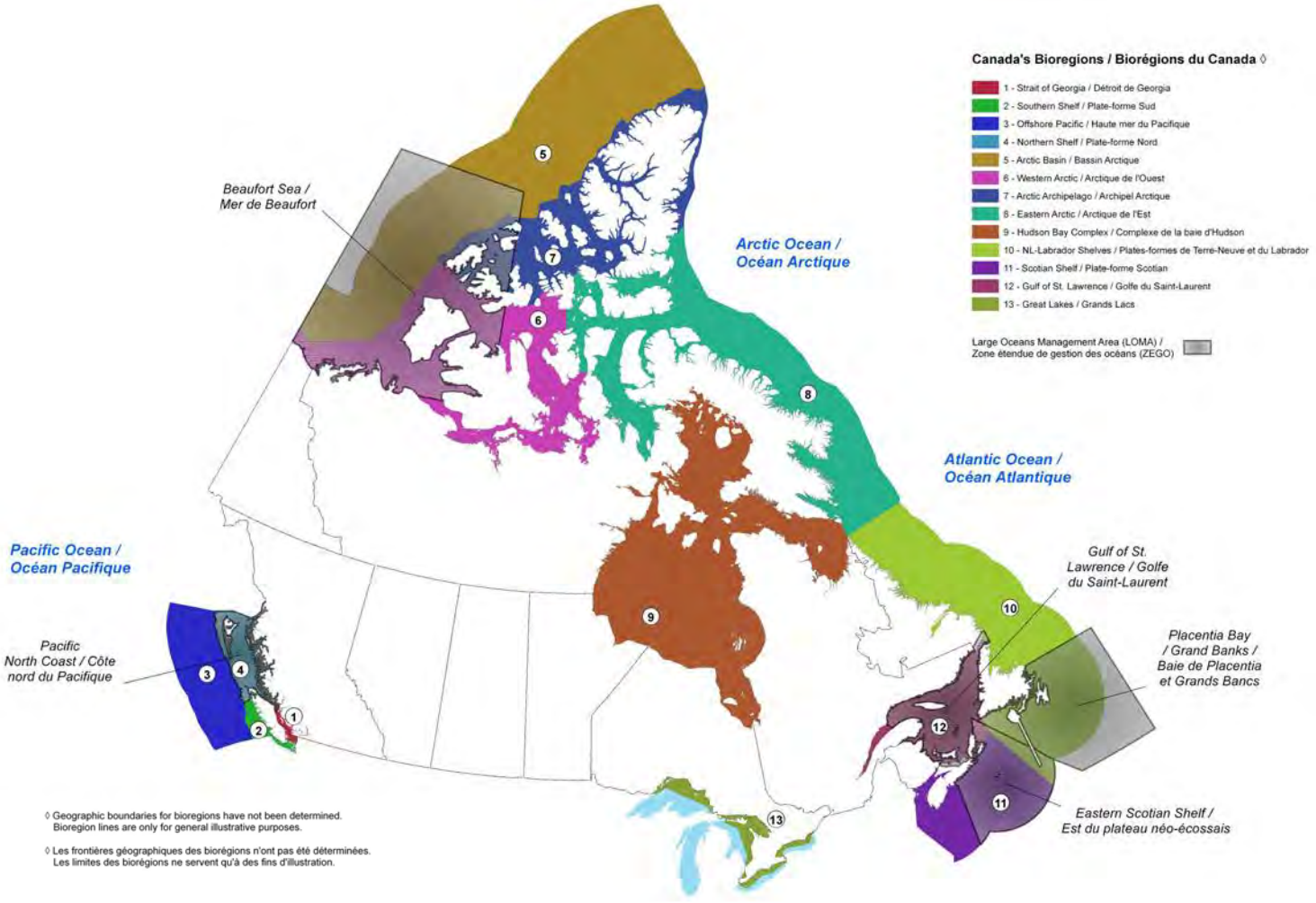
While we have failed to reach many of these targets and deadlines, our commitment to protect ***at least*** 10% of our ocean by 2020 is still within reach.

CANADA'S PROGRESS

Canada has made some progress on the path to a national MPA network. The foundations for bioregional MPA network planning and a nation-wide MPA network, such as a legislative framework, are in place, including:

1. Agreement in 2011 by federal, provincial and territorial governments to a **National Framework for Canada's Network of Marine Protected Areas**;
2. Scientific identification of marine bioregions for Canada's entire ocean estate (see Figure 5);
3. The federal and BC governments on the Pacific coast have completed a draft *Canada-BC MPA network strategy*. However, it has yet to be released, and without it MPA network planning will continue to be stalled;
4. The Canada-Québec Agreement on the St. Lawrence calls for the creation of 3 MPAs.[12]
5. The Québec government has committed to reaching 10% MPAs by 2015, making them the only province with a quantified MPA target.

Figure 5. Canada's Marine Bioregions



MPA NETWORK PLANNING AND THE MARINE PLANNING PARTNERSHIP (MAPP)

In 2011, the Province of British Columbia and 18 First Nations embarked on an ambitious program to create a sustainable and integrated management framework and marine spatial plan for the Pacific North Coast of British Columbia.

The Marine Planning Partnership, known as MaPP (www.MaPPocean.org), has completed four subregional marine use plans in the Pacific North Coast area (see map page 13), for Haida Gwaii, North Coast, Central Coast, and North Vancouver Island, and will also be preparing an overall regional priorities plan. The subregional plans provide clear recommendations for the management and conservation of local marine ecosystems. The plans identify 3 types of zones: Protection Management Zones that include highly protected no-take areas; Special Management Zones; and multiple-use General Management Zones.

The MaPP process has incorporated many of the "key elements" outlined in Chapter 3, including:

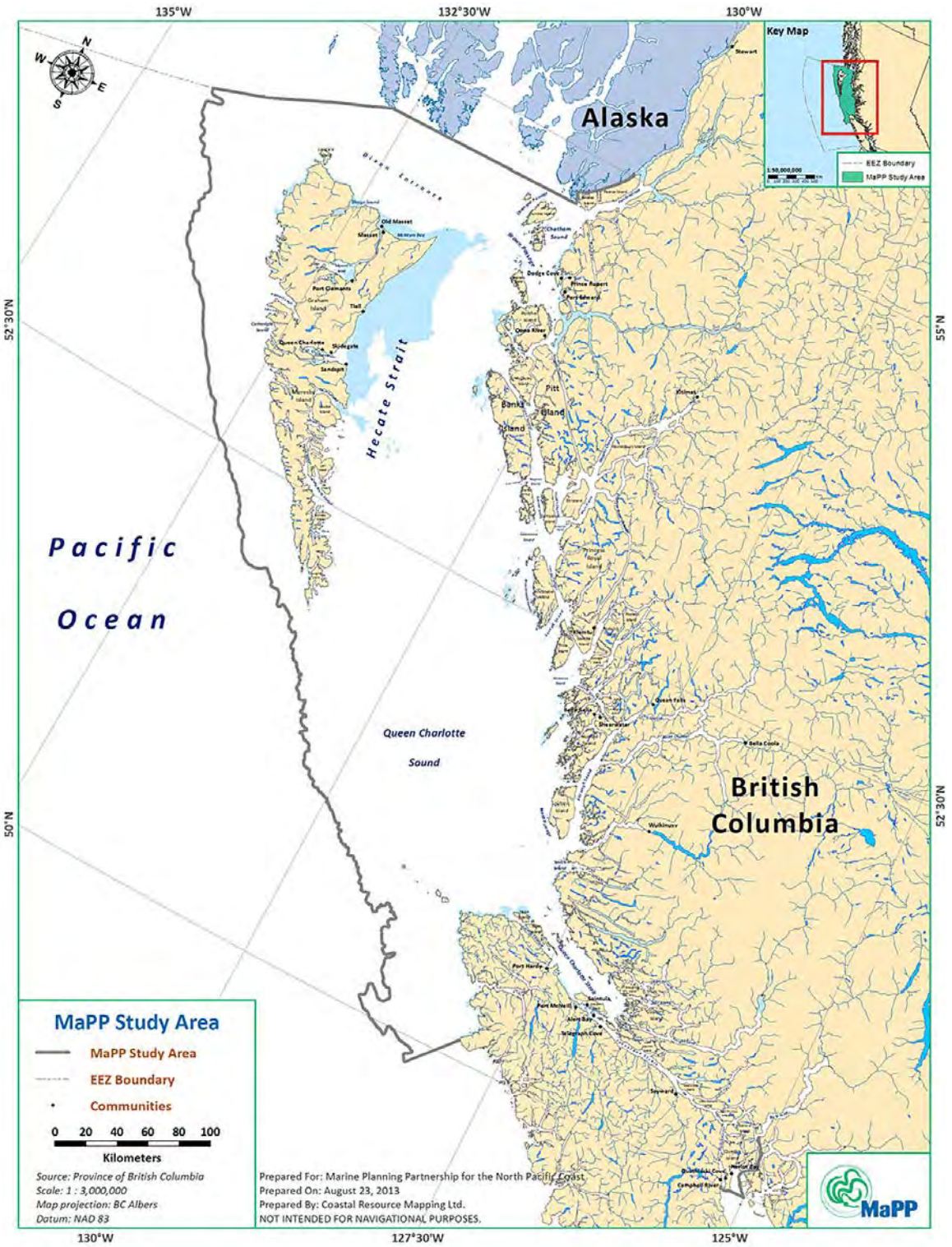
- Strong, collaborative leadership by the Province of BC and First Nations, funded by a private-public partnership that is linked to the achievement of timelines and milestones;
- Collaboration among a wide range of stakeholders in an open and transparent process, followed by a broader a public consultation process;
- Use of decision support tools that incorporate the best available science as well as traditional and local knowledge, and socio-economic analysis.

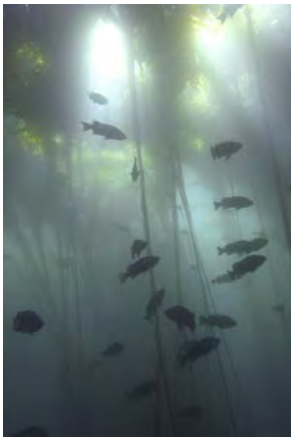
The regional and subregional marine use plans developed through this process will benefit from the engagement of the federal government for issues such as fishing and shipping which are under federal jurisdiction. In addition, further work is needed to coordinate the MaPP plans with the overlapping Pacific North Coast Integrated Management Area plan, which sets region-wide goals, objectives and strategies (pncima.org).

The recommendations for marine protected areas from the MaPP plans will be considered in the future coast-wide MPA network planning process to be jointly led by Canada and BC. The North Pacific Coast region will be the first bioregion that will undergo MPA network planning on the west coast.

Queen Charlotte Village, Haida Gwaii. Photo: Sabine Jessen

Figure 6. BC's Marine Planning Partnership study area





Haida Gwaii. Photo: Rowan Trebilco

PART 2: WHAT CAN CANADA LEARN FROM OTHER JURISDICTIONS?

Whimbrel, La Jolla, California. Photo: Sabine Jessen

Many countries around the world are implementing MPA networks. Researchers have identified a number of elements that are key to achieving success,[13] including:

1. **Political leadership**
2. **Timeline and milestones**
3. **Guidelines for MPA network design**
4. **Open and transparent process**
5. **Dedicated and ongoing funding**
6. **Socio-economic analysis**
7. **Science and decision support tools**
8. **MPA network planning in the context of comprehensive marine planning**

In this section, we look at the experience of three different jurisdictions—Scotland, California and Australia - and demonstrate how these elements have led to their success. While these jurisdictions are at different stages in MPA network design and implementation, they have demonstrated success using different approaches with these best practice elements. Australia, as another Commonwealth country, with a similar parliamentary government, comparable size of population and ocean estate to Canada, provides an example for Canada's federal government, especially given the context of marine bioregional planning. The approach taken in Scotland provides an example of how Canada might collaborate with individual provinces to plan for a network that includes both coastal and offshore waters. California provides an example of some unique approaches to MPA network design, using a private-public partnership agreement, with firm timelines and milestones, a unique approach to stakeholder engagement, and a completely open and transparent process.

California sea lions, California. Photo: Jennifer Smith

JURISDICTIONAL CONTEXTS

Scotland

As a member of the UK and EU, Scotland is embedded in a somewhat complicated political situation, with UK laws and EU directives applying to the establishment of MPA networks. The Marine and Coastal Access (UK) Act received royal assent in 2009 and the Marine (Scotland) Act in 2010, providing the legislative framework and objectives for the establishment of a network of MPAs in both inshore and offshore waters (respectively) to enable Scotland to meet its international obligations. Public consultation has been completed on a proposed network of 33 sites in both the territorial and offshore regions covering 32,000 sq miles (approximately 83,000 sq km). The Scottish government has now received expert internal advice about possible changes to the proposed MPA network, based on public input. Decisions on final MPAs are expected in summer 2014.

California

California has established a network of marine protected areas in California coastal waters (to 3 nautical miles) called the Marine Life Protection Act (MLPA) initiative, under a private-public partnership. Governed by an agreement between the state and a private foundation, a transparent public process was established to achieve a coast-wide network by 2011. According to Kirlin et al. (2013) "…California is the first state in the U.S. to create a scientifically-based, coherent network of MPAs in state waters, including many 'no-take' MPAs."[14] In total, as a result of the MLPA initiative, California increased the percentage of its state waters in MPAS from 3% in 2004 to 16% that are now protected within a network of 124 sites, including 9.4% in no-take MPAs.[15]

Australia

In 1998, the commonwealth (federal), state and territorial governments in Australia committed to working toward a national representative system of marine protected areas in Australia's ocean region by 2012.[16] In 2012, Australia announced its network of marine protected areas, which now covers about 33% of Australia's ocean estate, with about 17% identified as no-take areas. The total area is 3.1 million sq km.[17] In addition, Australian states and the Northern Territory have established more MPAs, with the most recent network completed in South Australia.[18]

Gulls, Isle of Skye. Photo: Ron Gilmore

Figure 7. Combined view of existing protected areas, other area-based measures, Nature Conservation MPA proposals and MPA search locations that could contribute to the Scottish MPA network.

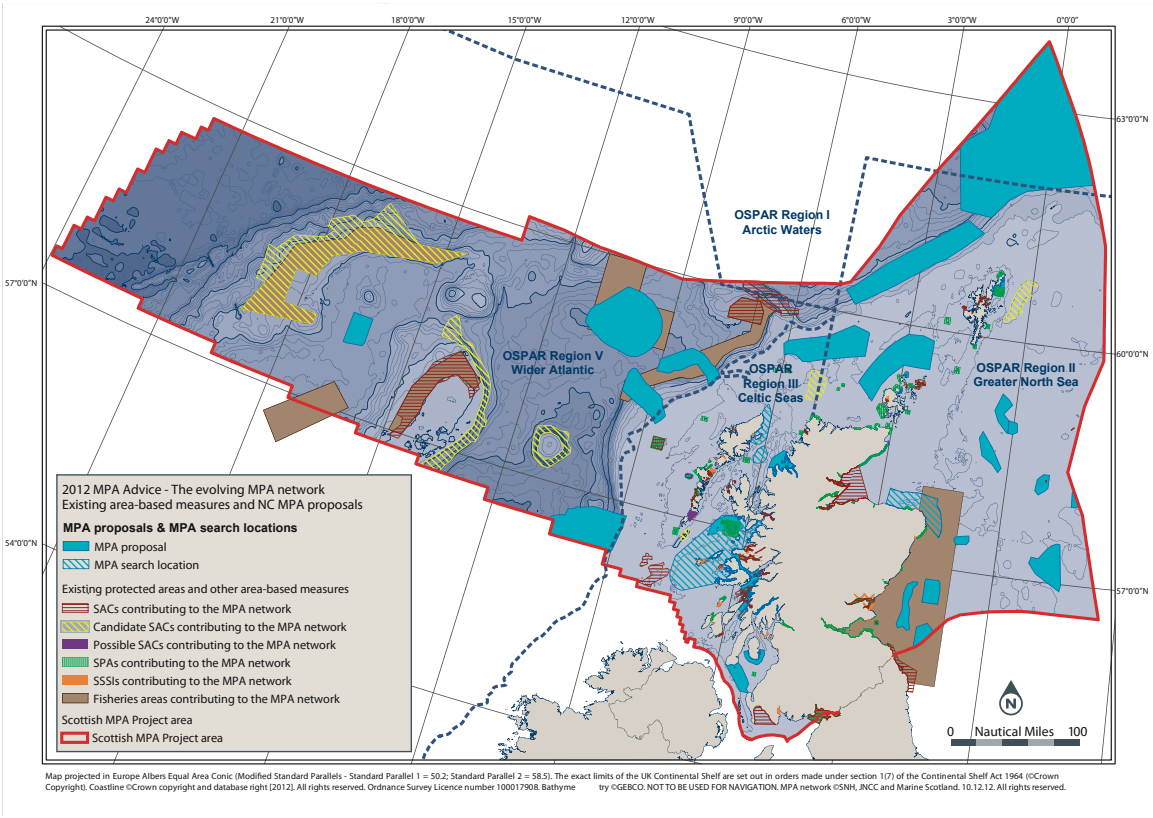


Figure 8. Australia's network of Commonwealth marine reserves.

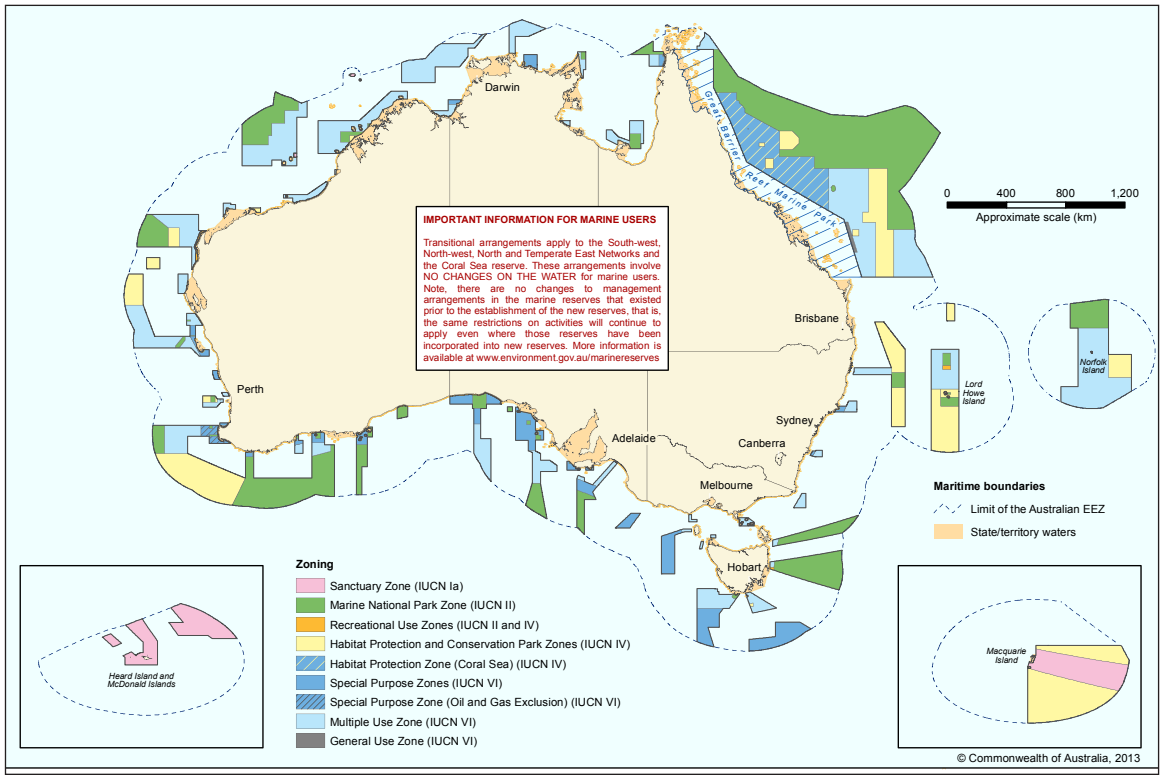
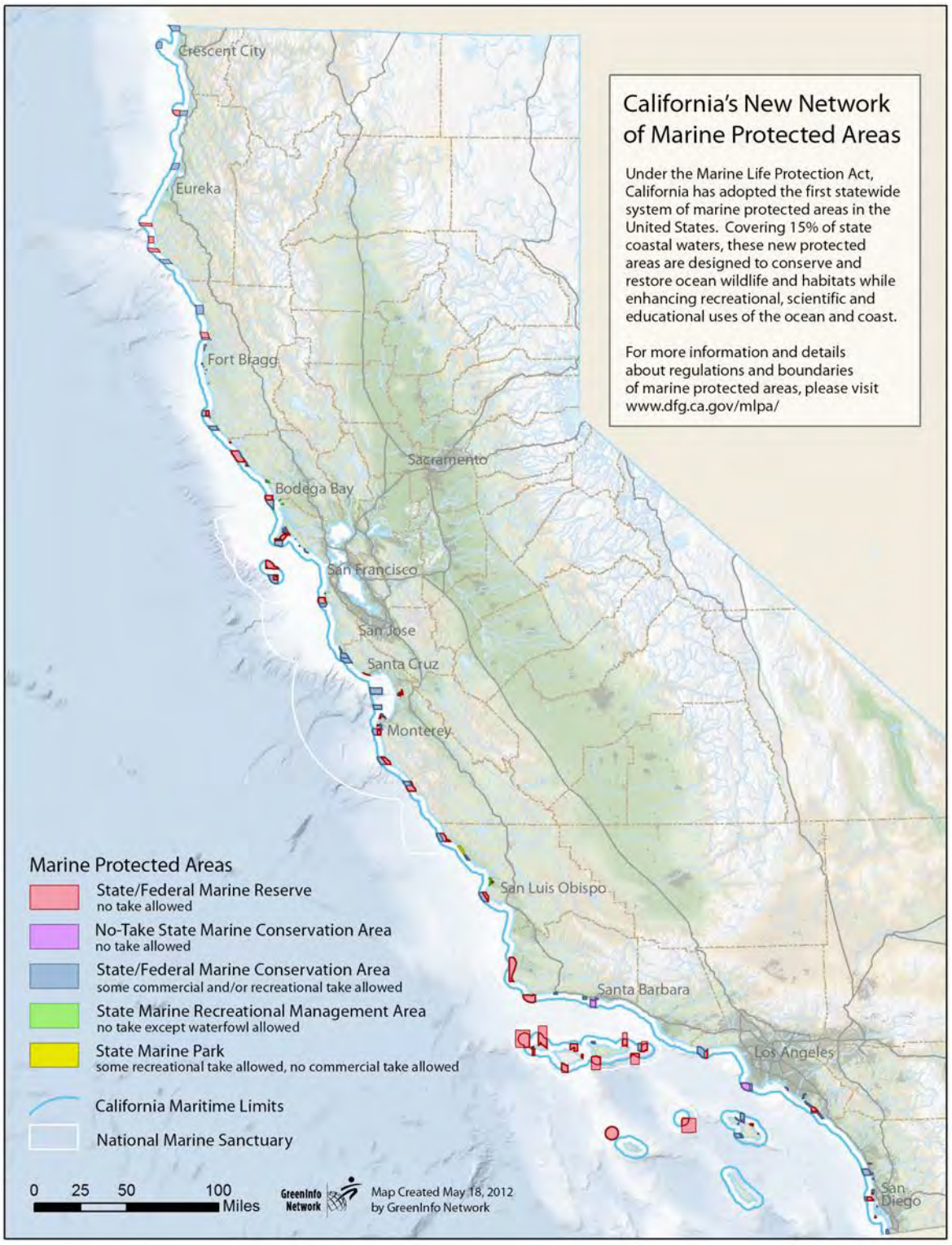


Figure 8. California's new network of Marine Protected Areas.



1 – POLITICAL LEADERSHIP

Strong and effective leadership, commitment and support at both political and agency levels, together with a shared vision and capacity, are key to achieving success on MPA network establishment. Commitment and support are needed at the beginning of the process and need to be maintained throughout the various stages of MPA network development, establishment and implementation process.

Altaire, Scotland. Photo: Jeff Wilson

Scotland

Recognizing the urgent need to more effectively plan and mange for competing uses of the marine environment, the Scottish Parliament passed the *Marine (Scotland) Act* in 2010, which includes provisions for marine spatial plans and three types of marine protected areas within Scotland's territorial sea. In September 2010, the Cabinet Secretary of Rural Affairs and Environment stated the

> *"…firm commitment for a fit-for-purpose and well managed MPA network being in place by 2016".*

When Scottish Environment Secretary Richard Lochhead unveiled the proposed MPA network In December 2012, he said:

> *"Accounting for 13% of Europe's seas and 61% of UK waters, Scotland's seas include many diverse habitats, with rare and beautiful species that it is our responsibility to protect. That's why the Marine Act included ambitious commitments to safeguards our seas...Not only that but a healthy marine ecosystem underpins the nursery grounds for the species our fishermen rely on, the reefs and kelp forests that protect our coasts by buffering against storms - as well as the clean waters needed to absorb carbon dioxide and help in the fight against climate change."* [19]

The Scottish and United Kingdom Governments agreed that Scottish inshore waters, and offshore waters would be included in one combined plan and referred to as the "National Marine Plan", despite the fact that two separate pieces of legislation and the two levels of government are involved.

California

A hallmark of the California MLPA process was the strong political support from the former State government. This political support was key to keeping the process going over the 7-year period, during which time there were a series of legal and political challenges.[20]

Australia

Under previous governments in Australia, completing the commonwealth MPA network has been a priority undertaking. The first part of the network was announced for the Southeast region in 2007, and the remainder of the country was completed in 2012. Since the most recent election, the new government has decided to review the network announced by the previous government. The outcome of the review process will not be known for some time.

Tasmania, Australia. Photo: Sabine Jessen

2 – TIMELINE AND MILESTONES

Having a timetable for completion of an MPA network planning process, as well as milestones along the way for measuring progress toward the completion date, helps to ensure clarity for all participants in the process, and instills a sense of resolve and commitment to achieving the final goal.

Scotland

Milestones and key deliverables in Scottish Government's commitment to a clean, healthy and biologically diverse marine and coastal environment include:

- Deliver a MPA network to meet national and international commitments by 2012;
- Report on progress of a MPA network by 2013 and deliver a well managed network of sites by 2016 (Marine Strategy Framework Directive) and ;
- Define Good Environmental Status by 2012 and delivery by 2020 (Marine Strategy Framework Directive).

A key milestone was achieved in December 2012 with the legally required tabling in Parliament of a report on progress on the MPA network, including scientific advice from both Scottish Natural Heritage and the UK Joint Nature Conservation Committee on a proposed network of 33 sites, with an additional four regions under further study for MPAs. In response to a question in the Scottish Parliament on 20 March 2013, Scottish Minister for Climate Change and the Environment, Paul Wheelhouse noted that, "The aim of the project is to deliver a well managed network by 2016 and we are working hard to achieve this ambitious target."

California

The Marine Life Protection Act (MLPA) agreement between the public and private partners specified the roles of each and outlined expected deliverables and timelines. It also created the Blue Ribbon Task Force to oversee the overall process. MPA network planning was delivered through four regional processes between 2004 and 2011. There was generally an overlap between the completion of planning in one region, with the beginning of planning in another region.

The partnership agreement also stipulated the development of a master plan to guide the MPA network design:

> *The master plan was developed in consultation with stakeholders and outlines the process for developing alternative MPA proposals, includes science guidelines on MPA design developed by the SAT (Science Advisory Team), and provides an overview of management, enforcement, monitoring, adaptive management, and funding.*[21]

Australia

The 1998 commitment for a national network of MPAs by 2012 was affirmed by the Australian government at the UN World Summit on Sustainable Development in 2002. Since then, the Australian government has proceeded through a number of stages. The Southeast regional network was established in 2007. The rest of the marine reserve network was established as part of a marine bioregional planning program, that included the preparation of bioregional profiles (released between 2007 and 2009), identified areas for further assessment, followed by draft marine bioregional plans and draft marine reserve network proposals, which were then finalized and proclaimed in 2012.

Fishing boat off West Vancouver, BC. Photo: Sabine Jessen

3 – GUIDELINES FOR MPA NETWORK DESIGN

Establishing ecological criteria for MPA sites and networks will ensure that the MPA network will be successful and effective in achieving biodiversity conservation in the long term.

Green sea turtle on Great Barrier Reef. Photo: Sam Harris

Scotland

In 2011 guidelines for the selection of MPAs and for the development of an MPA network in Scotland were jointly released by Marine Scotland, Scottish Natural Heritage, and the UK Joint Nature Conservation Committee. The guidelines apply to both Scottish territorial waters (to 12 nm) as well as offshore waters adjacent to Scotland, with specific guidelines related to three different categories of MPAs: nature conservation and an ecologically coherent network; demonstration and research; and historic. In addition, a set of guidelines was developed for the assessment of third party proposals. The guidelines document also clearly lays out the steps in the process. The guidelines provide further details on how key design features for ecological coherence will be applied in the selection and designation of nature conservation MPAs and the MPA network.

California

The Marine Life Protection Act identified six conservation goals for the MPA network, and the Science Advisory Team developed scientific design guidelines to meet these goals. This included guidance on habitats to be represented, replication of habitats, as well as size and spacing to ensure ecological connectivity. In addition, the Science Advisory Team evaluated each proposed set of MPA proposals for design feasibility and potential to meet legislated MPA goals.

Australia

All Australian governments agreed in 1998 to a jointly developed set of guidelines for establishing the national representative MPA network. The Australian government then developed a set of goals and principles for applying the guidelines in commonwealth waters.[23] However, in recent scientific reviews of the commonwealth network, scientists have flagged concerns over the degree to which the representation guideline was achieved, especially on the continental shelf where most activities harmful to biodiversity occur.[24] In addition, the network has been criticized for establishing "residual reserves" —areas that do not conflict with existing extractive uses such as oil and gas and fishing—thereby significantly reducing their effectiveness for biodiversity conservation.[25]

Crail Harbour, Fife, Scotland. Photo: Swalophoto

4 – OPEN AND TRANSPARENT PROCESS

Meaningful stakeholder and public engagement in the MPA network design process is important for both bringing a breadth of experience and knowledge to the planning process, and also for ensuring greater acceptance of and support for MPA network decisions. Stakeholder involvement should begin at the earliest stages of MPA network design, and opportunities for engagement should be clearly articulated in the process design, with terms of reference facilitating an understanding of timelines, rules and engagement opportunities. Providing feedback on stakeholder comments and concerns is key to ensuring transparency and confidence in the process.

Scotland

Stakeholders have been involved in every step of the process MPA process in Scotland. This engagement ranged from five national workshops, regular sectoral bilateral meetings, ad hoc meetings, through to group meetings, such as the Marine Strategy Forum or Regional Advisory Councils. In total, 56 stakeholder public events took place in 2013. Over 14,000 submissions were received on the MPA consultation, with over 95% expressing support for the MPAs. In addition, 27 third party MPA proposals were received, many of which overlapped with government proposals. Based on analyses of public responses conducted by the Scottish Natural Heritage (SNH) agency and the Joint Nature Conservation Committee (JNCC),[26] a revised MPA network map was recently recommended to governments for consideration.[27] A final decision has yet to be made by the governments.

California

Many efforts were made to ensure transparency of the MPA process, with information made widely available through public workshops, online and media broadcasts, to name a few. In each region, a regional stakeholder group (RSG) was established with the role of developing alternative MPA network proposals. Stakeholders "…were the sole group responsible for proposing MPA configurations and locations."[28] Stakeholders were supported by both the Science Advisory Team and the Blue Ribbon Task Force, which provided science and policy advice in order to assist stakeholders with designing an MPA network that would best achieve the MLPA legislation goals. Neutral professional facilitators assisted with communication among stakeholders, and meetings were open to the public. Within each region, stakeholders had several opportunities to refine MPA network proposals with guidance from the science team and task force.

Australia

At each of the steps in the marine bioregional planning process, various opportunities were provided for public consultation and input, including multi-stakeholder workshops and targeted sectoral meetings and opportunities for broader public input. A 90-day public consultation period in each region was defined for review of the draft marine bioregional plans and reserve network proposals. A total of 245 public and stakeholder meetings were held, with about 2,000 people attending between May 2011 and February 2012. Submissions were also invited on the proposals, and a total of 566,377 submissions were received, with the majority focused on the marine reserves network.[29]

Pelicans, Wollongong, New South Wales, Australia. Photo: Sabine Jessen

5 – DEDICATED AND ONGOING FUNDING

Dedicated funding for an MPA network design process until it is completed is critical to success. In particular, supporting adequate scientific advice and information, as well as ensuring transparency and participation in the process, including professional facilitation, were key elements in the success of other countries.

Scotland

Levels of funding commitment for implementing the Scottish MPA network planning process were not available.

California

Over seven years, $19.5 million from private charitable foundations and $19.5 million from the state supported the implementation of the MLPA initiative. In addition, experts and stakeholders volunteered thousands of hours to participate. Additional resources and agreements are being developed for implementation, monitoring and research of the MPA network.[30]

Australia

From 2006 to 2018, the Australian government committed over $114 million to support the marine planning process, including the MPA network. Roughly $9 million/year was allocated for the regional marine planning program, to both complete the planning process and to support implementation and management of the MPA network and the marine bioregional plans.[31] These budget allocations are clearly identified in the Australian government's annual budgets.

Above: Marbled Godwits, California. Photo: Sabine Jessen

Right: Great Ocean Road, Victoria, Australia. Photo: Sabine Jessen

6 – SOCIO-ECONOMIC ANALYSIS

Since the implementation of MPA networks will displace some fishing, especially in areas that are closed to some or all fishing activities, studies are required to determine how much impact these changes will have on existing fishing activities. In addition, they should also examine the potential long term benefits of MPAs for a variety of sectors, including tourism and fishing.

Scotland

A strategic environmental assessment of the 33 proposed MPAs found that fisheries displacement could occur, and that the displacement could have both positive and negative environmental effects. Since the information on how the proposed MPAs would be managed was not specific enough to complete a full assessment of the possible displacement effects, a fisheries displacement study was commissioned which used guidance that was developed for how fisheries management areas should be designed around protected features.[32] Public consultation is currently underway on the draft report of the fisheries displacement study, which was released in April 2014.

California

While there was not a requirement under the MLPA initiative to conduct socioeconomic impact analyses, an estimate of the maximum potential fisheries impact was conducted as part of the scientific evaluation of each MPA proposal. These estimates did not account for the potential benefit of spillover of fish from the MPAs, nor the possibly displacement of fishing effort to other areas. An additional evaluation included the use of bio-economic models that considered both the potential spillover from successful MPAs and the management status of fisheries outside the MPAs.[33]

Australia

The Australian government had a clear objective in developing the national marine reserve network to attempt to minimize the impacts on marine users while also achieving significant conservation outcomes. In order to meet this objective, the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) in conjunction with the commercial fishing sector, examined the social and economic implications of each of the regional marine reserve network proposals. The assessments considered both direct and indirect impacts on the fishing industry and related communities. It was estimated by ABARES that the 2012 marine reserve network would displace about 1% of the total annual value of Australia's commercial fisheries.[34]

Net mending, Scalloway, Scotland. Photo: Jeff Wilson

7 – SCIENCE AND DECISION SUPPORT TOOLS

MPA network design should be informed by up-to-date, best available, scientific studies, from both natural and social sciences, and also include local and traditional knowledge. Understanding where gaps in knowledge exist, and developing strategies to fill those gaps should be done throughout the process. Decision support tools, for systematic conservation planning, such as MARXAN and bioeconomic models,[35] can provide valuable assistance in MPA network design.

Scotland

The proposed Scottish MPA network was based on scientific analysis provided by Scottish Natural Heritage, and the UK Joint Nature Conservation Committee, which released public reports on their analyses and findings.[36] In December 2012, a joint report with their recommendations for nature conservation MPA proposals was tabled in Parliament. In addition, the MPA guidelines specify that MPA designation will be based on the use of best available scientific data, with a preference for relying on existing data and planned surveys. Specific stages were also identified for a peer review process, as well as for stakeholder comment. The selection of nature conservation MPAs was based on a set of 21 habitat features, 5 limited mobility species, 10 mobile species, and 5 large-scale features.

California

The MLPA initiative invested significant resources in compiling spatial data into a database and developing tools to make them available for planning, through MarineMap.[37] This was critical in allowing participants in the process to design and evaluate MPA proposals against the design guidelines. The Science Advisory Team also played an ongoing role in responding to scientific questions and addressing stakeholder science needs.

Australia

In addition to scientific reports about each of the five bioregions, the commonwealth government also compiled a conservation values atlas,[38] an interactive web-based tool, and an online data list that provides a list and online link for the various data sources used in the development of the bioregional plans. Scientific advice was also used to develop the marine and coastal regionalization of Australia. Overall, the approach was to draw from available science.

Right: Mornington Peninsula, Victoria, Australia. Photo: Sabine Jessen

Below: Solway estuary, Scotland. Photo: Doc Searles

8 – MPA NETWORK PLANNING IN THE CONTEXT OF COMPREHENSIVE MARINE PLANNING

Embedding MPA network planning within a broader marine planning approach allows for recognition of the social and ecological connections between MPAs and the broader ocean space. It also provides opportunities to address: cumulative impacts of human activities; tradeoffs among different ocean uses and priorities; and learning and adaptation.

Scotland

Marine Scotland is involved in marine planning at a number of levels, including: 1) the national level and the creation of Scotland's first National Marine Plan; 2) the regional level, by creating Scottish Marine regions; 3) at the sectoral planning level, for offshore renewable energy; and 4) working within the UK and European context. The intent is for the National Marine Plan to set out strategic objectives for the Scottish marine area, including for marine activities such as renewable energy, aquaculture, conservation, recreation and tourism, ports, and harbours and shipping.[40] In order to implement these objectives, the next level is to create the smaller Scottish Marine Regions. A public consultation is currently underway that will lead to legislative definition of these regions. Finally, four pilot areas have been identified to develop and test new approaches to improve sustainable marine management.

In July 2013, the Scottish government released draft management proposals as part of a new National Marine Plan, and began a public consultation process on the overall plan, as well as on the proposed network of marine protected areas.

California

The MLPA initiative was not part of an overall marine planning exercise for the ocean region off the California coast. The MPAs established through the initiative were done for the waters under state jurisdiction to 3 nautical miles. From 3 to 200 nautical miles, the ocean region is under federal jurisdiction, and MPA network planning and a broader ocean planning initiative are still needed. A study is underway by the Center for Ocean Solutions to provide advice on how marine spatial planning could best proceed in California.[41]

Australia

Australia's national marine reserve network was developed in the context of marine bioregional plans. These plans were developed for four marine regions: southwest, northwest, north, and east. The southeast marine reserve network was established prior to the bioregional planning process. The bioregional plans are intended to provide an overview of the broad biodiversity objectives, regional priorities and the strategies to address these priorities, with the overall aim of improve the management and protection of the marine environment. They are intended to serve as a guide for government and industry, but are only binding on decisions by the minister in relation to the requirements of the Environment Protection and Biodiversity Conservation (EPBC) Act.[42]

Bottlenose dolphin. Photo: Kesslet

Dare to be Deep: Charting Canada's Course to 2020

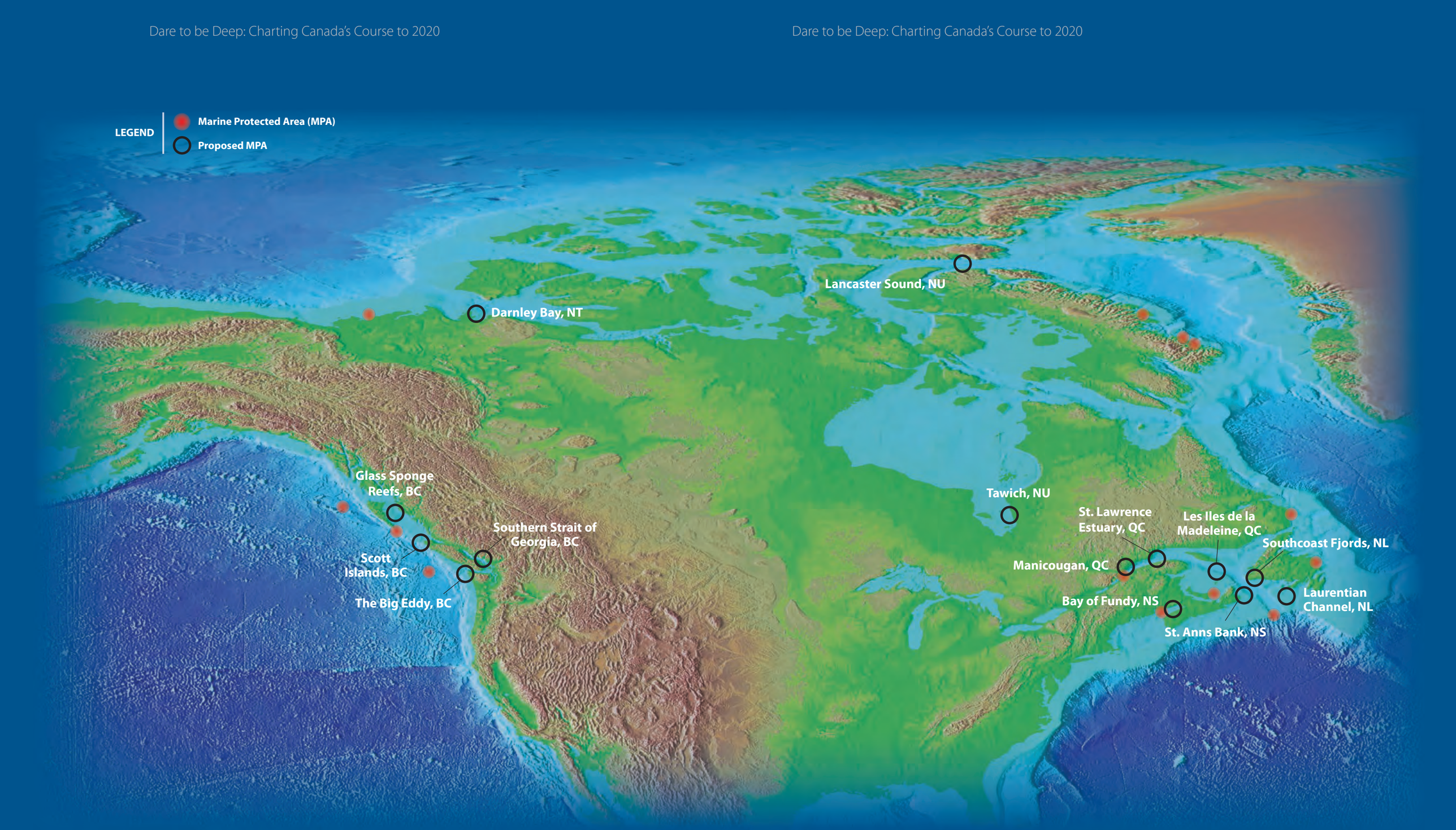
PART 3: UPDATE ON INDIVIDUAL MPA SITES IN CANADA – BUILDING BLOCKS TOWARDS A NETWORK

NAME OF SITE	PHOTOS (credits on page 35)	DESCRIPTION/OPPORTUNITY	UPDATE	TIMELINE	SIZE (proposed)
ARCTIC OCEAN					
Lancaster Sound, NU (Tallurutiup Tariunga)		One of the most biologically productive marine areas in the Arctic. The largest Arctic polynya provides open water year round and ice edge habitats that are critical for seabirds, sea ducks and many marine mammals, including most of the endangered eastern population of bowhead whales.	Parks Canada, Qikiqtani Inuit Association and the Government of Nunavut are had been expected to complete the feasibility study by the end of 2013. After this is complete, and a decision is made to proceed with the NMCA, the parties will need to develop an interim management plan, including identifying fully protected core zones as required under the NMCA legislation, and negotiate an Inuit Impact and Benefit Agreement.	Parks Canada has conducted a series of local consultation sessions in Nunavut to review the ecological and the mineral and energy resource assessments. Additional sessions are planned prior to a decision on the feasibility study and whether to proceed with the NMCA. The timeline is uncertain.	48,000 sq km study area
Tawich, QC		The proposed area in south-east James Bay is noted for a remarkable biodiversity associated with the transition from subarctic to arctic ecosystems. This includes the most southern population of polar bears in the world as well as a distinct sub-population of beluga whales. First proposed to Parks Canada in 2009, the NMCA project is strongly supported by the communities of Wemindji and Eastmain, as well as by the Grand Council of the Crees, as a way of balancing development in the community with protection of their environment.	The signing of the offshore land claim agreement in 2011 set the stage for Parks Canada and the Grand Council of the Crees to formally begin talks about the creation of the NMCA. However, no further discussions have been held since then. On a positive note, Mr. Rodney Mark has recently been elected Deputy Grand Chief of the Grand Council of the Crees. Mr. Mark was an early proponent of the Tawich project and he has commited to champion the proposed NMCA in the coming years.	No formal timeline for the project	about 20,000 sq km
Anguniaqvia Niqiqyuam, NWT (Darnley Bay)		Anguniaqvia Niqiqyuam in Darnley Bay is a site of great cultural importance to the Inuvialut people as a subsistence hunting and fishing ground.. It is also an important feeding ground for Arctic char, beluga whales, polar bears, ringed and bearded seals and is home to the only thick billed murre colony in the Canadian Arctic.	Since the nomination of Anguniaqvia Niqiqyuam as an area of interest a steering committee has been formed and has met on several occaisions. There has been considerable progress made including a number of scientific assessments, local and traditional knowledge workshops and a socio-economic analysis. In 2013 a draft regulatory intent was developed by the steering committee which has been under review by the local community and stakeholders.	The Minister will need to approve the regulatory intent following community and stakeholder review, and then regulations will need to be drafted. Hopefully the MPA will be completed in 2015.	2,368 sq km
PACIFIC OCEAN					
Scott Islands, BC		The Scott Islands are a globally significant bird area and the most important breeding ground for seabirds in BC. They are home to about half of the world's Cassin's Auklets, 90% of Canada's tufted puffins, and 95% of Pacific Canada's common murres. The islands are protected but the birds spend most of their lives feeding at sea where they are risk from oil pollution and competition with commercial fisheries for food.	A proposed boundary was released in 2012 and a draft regulatory strategy went through the public consultation process in 2013. It was hoped that this would lead to final designation that same year however concerns with the suitability of the existing regulatory process have delayed this.	The Islands were protected as Ecological Reserves in 1995 and in 2000 Environment Canada began the process to establish a marine National Wildlife Area to protect the surrounding waters. Final designation was expected in 2013, it has now been further delayed until at least 2016.	11,546 sq. km
Hecate Strait Glass Sponge Reefs, BC		First discovered in 1987, glass sponge reefs were thought to have gone extinct with the dinosaurs some 40 million years ago. Glass sponge reefs are only found in BC waters, and have been growing on the Hecate Strait seafloor for over 9000 years. They provide important deep sea habitat for a variety of species and are extremely vulnerable to damage from trawlers, long lines and prawn traps.	Since the process to establish a Marine Protected area began in 2010, CPAWS has been participating in stakeholder consultations and development of the draft regulations and management plan, which are nearing completion. The management plan includes vertical (area) and horizontal (depth) zoning. This allows minimal-impact activities, like surface fishing, to occur where they will not affect the reefs, and provide better protection for the reefs from activities that might have indirect impacts through sedimentation.	The area was closed to groundfish trawling in 2002 and the site was announced as an Oceans Act MPA area of interest in 2010. Final designation is expected in late 2014.	2410 sq km (1503 sq km fully protected)
Southern Strait of Georgia NMCA, BC		The Southern Strait of Georgia is home to more than 3000 species and is critical habitat for the iconic southern resident killer whales. Unfortunately, the Southern Strait of Georgia is also "…the most heavily utilized and impacted of all the marine regions on the west coast of Canada" according to Parks Canada.	In 2003, Parks Canada began the process to establish the Southern Strait of Georgia National Marine Conservation Area, releasing a proposed boundary in 2012. Progress has been very slow and the process and timeline has recently been revised. A draft concept will be released in Spring 2015 and the public consultation will be completed by Fall 2015.	The feasibility study process for the NMCA began in 2003, but after more than 10 years the federal and provincial governments have still not come to a decision on whether to establish an NMCA. With the revised timeline a decision on whether to proceed to the next step is unlikely before 2016.	1400 sq km
Big Eddy, BC		The Juan de Fuca Eddy provides a rich supply of nutrients to the west coast of Vancouver Island, supporting the incredibly rich and diverse marine life for which the area is famous. A National Marine Conservation Area that connects with the Olympic Coast National Marine Sanctuary in Washington State would create an International Marine Peace Park to effectively protect this important and vulnerable area.	In January 2012, Parks Canada issued a request for proposals for a study to identify potential areas for a National Marine Conservation Area. However they quickly withdrew the request and have not yet re-issued it. In the absence of further progress CPAWS has undertaken an independent review of marine ecosystems in the area to support any future studies or proposals.	There has been no official process started yet and given budget cuts it is unlikely that any process will be started before the Southern Strait of Georgia NMCA process reaches its conclusion.	n/a

Dare to be Deep: Charting Canada's Course to 2020

NAME OF SITE	PHOTOS (credits on page 35)	DESCRIPTION/OPPORTUNITY	UPDATE	TIMELINE	SIZE (proposed)
ATLANTIC OCEAN					
Laurentian Channel, NL		The channel contains the highest levels of diversity off the shores of Newfoundland. The area supports the largest concentration of black dogfish in Canada, and is the only location where pupping occurs. DFO has decided not to consider cod as a priority species for the development of conservation objectives, in spite of its ecological importance.	Finalize a boundary proposal and management measures for the proposed MPA with the Stakeholder Advisory Committee, and initiate the regulatory process to complete designation of the MPA under the Oceans Act. CPAWS is concerned that significant changes to the boundary would remove some of the most ecologically significant portions of the proposed MPA, which include important cod and redfish populations.	The establishment process has been delayed and is now expected to continue through 2014.	Proposed: 17,950 sq km but in recent discussions with DFO looks like the size is now decreased to ~12,000 sq km.
South Coast Fjords, NL		From low sandy beaches to the west and immense granite cliffs and deep fjords to the east, this is the largest, undeveloped alpine coastline in Canada. Ice-free year round, these fjords are a haven for blue, humpback, fin and killer whales in the winter and habitat for endangered leatherback turtles in the summer. Local communities have expressed interest in establishing an NMCA as it could provide an economic boost to the area through increased ecotourism.	The provincial government has declined Parks Canada offer to do a feasibility study for this proposed NMCA. It is important that the provincial government reevaluate their interest in this project and proceed with the feasbility study to help determine options to protect the area, especially given local community support. The spectacular fjord region remains vulnerable to oil and gas exploration and overfishing, and the historic outport culture continues to decline as the historic fishing industry remains moribund.	No known timeline	
St. Lawrence Estuary, QC		This MPA project was started in 1998 by DFO as a way to completely protect the beluga habitat in the St. Lawrence Estuary. The vast area of interest surrounds the Saguenay-St. Lawrence Marine Park and is an area of exceptional biodiversity. Public consultations were held in 2004 and with First Nations in 2005. Since this is an area of shared jurisdiction, collaboration between Québec and Ottawa is essential. No progress has been made on the project for nearly a decade.	In the Fall of 2013, TransCanada tabled an oil terminal project at Cacouna, inside the boundaries of the proposed MPA and within the essential habitat of the threatened beluga population. Preliminary surveying was recently conducted (seismic blasting and drilling) at the site, leading to a vast citizen mobilization against the oil terminal project.	No formal timeline for the project. The process seems to be halted.	Area of interest is about 6,000 sq km
Gaspesie (American Bank), QC		These waters, close to Forillon National Park, are characterized by a high productivity and are visited by a significant portion of the cod population of southern Gulf of St. Lawrence, the endangered Leatherback Turtle as well as being a foraging ground for the Blue Whale. The area has been formally recognized as an « area of interest » by DFO in June 2011. Given the shared jurisdiction between Ottawa and Quebec, collaboration between the two governments is essential for the area to gain protection status.	The Québec moratorium on oil exploration in the Gulf is still in effect. However, in December 2013, the Québec Department of Natural Resources issued a call for bids to evaluate the oil potential within the proposed MPA. After a huge media backlash, the Québec Natural Resources Minister stated for the first time that the ultimate goal was to protect the area. The call for bids was cancelled a month later, but the Québec government has yet to formally get involved in the MPA project.	No formal timeline for the project	Area of interest is 1,050 sq km but CPAWS is proposing an expansion
Les Iles de la Madeleine, QC		The Magdalen Islands are located in southern Gulf of St. Lawrence in a shallow basin with the warmest marine waters in Canada. The islands offer a stunning diversity of coastal ecosystems as well as a high diversity of marine organisms. In December 2011 a very encouraging agreement was signed between the federal and provincial governments to conduct a 2-year ecological, cultural and economic study of the area to better inform an eventual decision to protect the area. In addition, a consulting committee of local stakeholders was formed.	No new agreement between the federal and provincial governments has been reached to either proceed with a formal feasibility study or even a phase II of the 2011 study. The Québec moratorium on oil exploration in the Gulf is still in effect, but could be lifted in the near future.	No formal timeline for the project	Study area is 17,000 sq km
Bay of Fundy, NB and NS		The Bay of Fundy contains the highest tides in the world, which provide nutrient rich waters that support a rich diversity of marine life. Home to twenty two species of whales and dolphins, the Bay of Fundy provides critical habitat for the endangered North Atlantic right whale. The Bay also contains rich mudflats and tidal salt marshes which provide critical feeding areas for over 1 million migratory shorebirds each year. The deeper waters of the bay support deep sea corals, and horse mussel reefs.	CPAWS has been working to encourage the establishment of a National Marine Conservation Area (NMCA) within the Outer Bay of Fundy and encourage the government to undertake comprehensive marine network planning for the entire Bay. No progress has been made over the past year. Despite overwhelming public support for protecting the Bay of Fundy, the government has failed to advance a National Marine Conservation Area for the Bay and has not yet committed to undertaking marine network planning there.	The government has completed an assessment examining priority areas in the Bay of Fundy for conservation, but has been non-commital for moving forward and has not provided a clear timeline for establishing the National Marine Conservation Area.	10,000 to 15,000 sq km NMCA is needed.
St Anns Bank, NS		St. Anns Bank is located on the Eastern Scotian Shelf not too far from the Cape Breton coastline. It contains an ecologically diverse ecosystem, with shallow shelf habitats transitioning into continental slope habitats and deeper water areas in the Laurentian Channel. The St. Ann's Bank site provides important habitat for a number of species, such as the leatherback turtle and Altantic wolffish, as well as deep-sea corals and sponges.	Good progress is being made to establish a marine protected area at this site. Fisheries and Oceans Canada is moving ahead with a proposal to protect a large area of St. Ann's Bank that would include shelf, slope, and channel habitats. The stakeholder advisory committee has endorsed this proposal and has recommended that it proceed to designation. The next step is for the Minister of Fisheries and Oceans to approve the regulatory intention documents.	In 2011, St. Anns Bank was officially selected as an Area of Interest for a marine protected area on the Eastern Scotian Shelf. After several years of negotiation, the stakeholder advisory committee endorsed a proposed boundary, which initiated the preparation of regulatory intent documents. Once the Minister signs these, a round of public consultation will occur before the regulations are written. It then goes to the Canada Gazette process before final designation can occur. Slipping timelines are a concern. It has been over a year since stakeholders recommended proceeding with the MPA.	4,600 sq km

Dare to be Deep: Charting Canada's Course to 2020



APPENDIX – DATA FOR CHARTS

Largest 10 Ocean Estate (Sea Around Us)	Ocean estate km²	1990	2000	2010	2012
Australia	8,505,348	27.1	29.5	33.2	33.2
United States	11,351,000	22.5	28.2	30.4	30.4
United Kingdom	6,805,586	5.5	11.7	16.6	16.6
France*	11,035,000	NA	NA	NA	16.0
New Zealand	4,083,744	0.7	8.4	12.4	12.4
Russia	7,566,673	2.3	11.1	11.6	11.6
Indonesia	6,159,032	0.4	1	5.5	5.8
Japan	4,479,388	2	5	5.6	5.6
China	3,879,666	0.4	1.1	1.6	1.6
Canada	5,599,077	0.7	0.9	1.3	1.3
AVG	**6,946,451**	**7.4**	**11.9**	**17.7**	**17.7**

10 longest coastlines (CIA World Factbook) excluding Antarctica	Length km	1990	2000	2010	2012
Greenland	44,087	36.5	36.5	36.7	36.7
Australia	25,760	27.1	29.5	33.2	33.2
United States	19,924	22.5	28.2	30.4	30.4
New Zealand	15,134	5.5	11.7	16.6	16.6
Russia	37,653	2.3	11.1	11.6	11.6
Indonesia	54,716	0.4	1	5.5	5.8
Japan	29,751	2	5	5.6	5.6
Norway	25,148	1.2	1.4	2.8	2.8
Philippines	36,289	0.3	2.4	2.5	2.5
Canada	202,080	0.7	0.9	1.3	1.3
	49,054	**9.9**	**12.8**	**14.6**	**14.7**

*Although United Nations Data states that France has protected 58.5% of its waters, a recent media release by the Agence des aires marines protégéés states that with the addition of the new Coral Sea Natural Park in New Caledonia the overall protection of French waters now stands at 16% (http://www.aires-marines.com/News/Creation-of-the-Coral-Sea-natural-park).

Largest 10 Ocean Estate (Sea Around Us)	Ocean Estate km²	MPA km²	Not MPA	% Ocean estate MPA
Australia	8,505,348	2,823,775.536	5,681,572	33.2
United States	11,351,000	3,450,704	7,900,296	30.4
United Kingdom	6,805,586	1,129,727.276	5,675,859	16.6
France*	11,035,000	1,765,600	9,269,400	16.0
New Zealand	4,083,744	506,384.256	3,577,360	12.4
Russia	7,566,673	877,734.068	6,688,939	11.6
Indonesia	6,159,032	357,223.856	5,801,808	5.8
Japan	4,479,388	250,845.728	4,228,542	5.6
China	3,879,666	62,074.656	3,817,591	1.6
Canada	5,599,077	72,788.001	5,526,289	1.3
AVG	**6,946,451**	**1,598,673.2**		

Data Sources:

International MPA coverage data is taken from the United Nations Millennium Development Goals Indicators http://unstats.un.org/unsd/mdg/Data.aspx.

Data regarding length of coastline is taken from the CIA World Factbook https://www.cia.gov/library/publications/the-world-factbook/.

Data regarding the relative size of international waters is from http://www.seaaroundus.org/eez/

Gosling Island, BC.
Photo: Leah Honka

ENDNOTES

1 http://www.dfo-mpo.gc.ca/oceans/publications/dmpaf-eczpm/docs/framework-cadre2011-eng.pdf"

2 http://greenbudget.ca/pdf/Green%20Budget%20Coalition%27s%20Recommendations%20for%20Budget%202014%20%28November%207%202013%29.pdf

3 Eastern Scotian Shelf, Beaufort Sea, Placentia Bay/Grand Banks, Gulf of St. Lawrence, and Pacific North Coast

4 The federal Pacific North Coast Integrated Management Area (PNCIMA) plan and the provincial and First Nations Marine Planning Partnership for the North Pacific Coast (MaPP) would benefit from better integration in order to achieve full marine spatial plans bringing the jurisdictional authorities of all three levels of government to the plans.

5 Canada uses the International Union for the Conservation of Nature's definition "clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values."

6 Edgar, G. J., et al. 2014. Global conservation outcomes depend on marine protected areas with five key features. Nature

7 Canada has adopted the IUCN definition of MPA networks as "A collection of individual marine protected areas that operates cooperatively and synergistically, at various spatial scales, and with a range of protection levels, in order to fulfill ecological aims more effectively and comprehensively than individual sites could alone."

8 Gardner, J., S. Bicego, S. Jessen, and M. Baker. 2008. Challenges and Opportunities in progress towards Canada's commitment to a national network of MPAs by 2012. Vancouver: Canadian Parks and Wilderness Society. 58pp.

9 Government of Canada. 2011. National Framework for Canada's Network of Marine Protected Areas. Fisheries and Oceans Canada, Ottawa. 31 pp.

10 Devillers, R., Pressey, R. L., Grech, A., Kittinger, J. N., Edgar, G. J., Ward, T., & Watson, R. 2014. Reinventing residual reserves in the sea: are we favouring ease of establishment over need for protection? Aquatic Conservation: Marine and Freshwater Ecosystems

11 Ocean estate includes internal waters, territorial sea (to 12 nautical miles (nm)) and exclusive economic zone (from 12nm to 200 nm)

12 http://planstlaurent.qc.ca/en/biodiversity/list_of_projects/areas_of_ecological_interest.html

Bowie Seamount, BC.
Photo: Lynne Yamanaka

13 IUCN World Commission on Protected Areas (IUCN-WCPA). 2008. Establishing Marine Protected Area Networks – Making it Happen. Washington, DC: IUCN-WCPA, NOAA and The Nature Conservancy. 118p. and

Fox, E., S. Hastings, M. Miller-Henson, D. Monie, J. Ugoretz, A. Frimodig, C. Shuman, B. Owens, R. Garwood, D. Connor, P. Serpa, and M. Gleason. 2013. Addressing policy issues in a stakeholder-based and science-driven marine protected area network planning process. Ocean & Coastal Management 74:34-44.

14 Kirlin, J., M. Caldwell, M. Gleason, M. Weber, J. Ugoretz, E. Fox and M. Miller-Henson. 2013. California's Marine Life Protection Act Initiative: Supporting implementation of legislation establishing a statewide network of marine protected areas. Ocean & Coastal Management 74:3-13.

15 Kirlin et al. 2013

16 http://www.environment.gov.au/topics/marine/marine-reserves/overview/background

17 http://www.environment.gov.au/topics/marine/marine-reserves/overview

18 http://www.environment.sa.gov.au/marineparks/About

19 http://www.bbc.com/news/uk-scotland-20721875

20 Gleason, M., E. Fox, S. Ashcraft, J. Vasques, E. Whiteman, P. Serpa, E. Saarman, M. Caldwell, A. Frimodig, M. Miller-Henson, J. Kirlin, B. Ota, E. Pope, M. Weber, and K. Wiseman. 2013. Designing a network of marine protected areas in California: Achievements, costs, lessons learned, and challenges ahead. Ocean & Coastal Management 74:90-101.

21 Gleason et al. 2013:91.

22 http://www.scotland.gov.uk/Resource/Doc/295194/0114024.pdf

23 http://www.environment.gov.au/resource/goals-and-principles-establishment-national-representative-system-marine-protected-areas

24 Barr, L.M. and H.P. Possingham. 2013. Are outcomes matching policy commitments in Australian marine conservation planning? Marine Policy 42:39-48.

25 Devillers, R., R.L. Pressey, A Grech, J.N. Kittinger, G.J. Edgar, T. Ward and R. Watson. 2014. Reinventing residual reserves in the sea: are we favouring ease of establishment over need for protection? Aquatic Conserv: Mar. Freshw. Ecosyst. DOI: 10.1002/aqc.2445

26 http://www.snh.gov.uk/docs/A1277139.pdf and http://jncc.defra.gov.uk/pdf/JNCC_518_webA.pdf

http://jncc.defra.gov.uk/scottish-mpa-consultation

27 http://www.snh.gov.uk/docs/A1277972.pdf

28 Saarman and Carr 2013:47

29 http://www.environment.gov.au/node/20725

30 Kirlin et al. 2013

31 http://www.budget.gov.au/2012-13/content/bp2/html/bp2_expense-21.htm

http://www.budget.gov.au/2011-12/content/bp2/html/bp2_expense-21.htm

http://www.budget.gov.au/2010-11/content/bp2/html/bp2_expense-09.htm

http://www.budget.gov.au/2006-07/bp2/html/bp2_expense-07.htm

32 http://www.scotland.gov.uk/Resource/0044/00448930.pdf

33 Gleason et al. 2013:96.

34 http://www.environment.gov.au/topics/marine/marine-reserves/overview/background

35 Klein, C.J., V.J. Tulloch, B.S. Halpern, K.A. Selkoe, M.E. Watts, C. Steinback, A. Scholz, and H.P. Possingham. 2013. Tradeoffs in marine reserve design: habitat condition, representation, and socioeconomic costs. Conservation Letters 6(5):324-332.

Rassweiler, A., C. Costello, and D.A. Siegel. 2012. Marine protected areas and the value of spatially optimized fishery management. PNAS 109(29):11884-11889.

36 http://www.snh.gov.uk/docs/A990244.pdf

http://jncc.defra.gov.uk/PDF/SNH%20and%20JNCC%20MPA%20network%20advice%20-%20Final%20report.pdf

37 http://marinemap.org/

38 http://www.environment.gov.au/topics/marine/marine-bioregional-plans/conservation-values-atlas

39 http://www.environment.gov.au/resource/guide-integrated-marine-and-coastal-regionalisation-australia-version-40-june-2006-imcra

40 http://www.scotland.gov.uk/Resource/0042/00428577.pdf

41 http://www.centerforoceansolutions.org/initiatives/marine-spatial-planning/california-marine-spatial-planning-project

42 http://www.environment.gov.au/topics/marine/marine-bioregional-plans

Photo credits for pg.26–28 (from top)

Narwhals, polar bear and seal – A.S. Wright; auk chick – unknown; glass sponge – Neil McDaniel; killer whale – Cory Lagasse; humpback whale – Duane Fuerter; Wolffish – Ocean Quest Adventure Resort; Leatherback turtle – Rick Herren, Inwater Research; beluga – GREMM; blue whale – Patrick DeBacker; gannets – Andrea Schaffer; North Atlantic Right Whale and calf – Penn State; Wolffish – Ocean Quest Adventure Resort.

For further information, contact:

CPAWS

Canadian Parks and Wilderness Society
506-250 City Centre Ave, Ottawa, ON K1R 6K7

Telephone: (613) 569-7226 | Toll Free: 1-800-333-WILD (9453) | Fax: (613) 569-7098
info@cpaws.org | www.cpaws.org