

Summary of the  
Regional Workshop on  
Marine Spatial Planning:  
A Technical Learning Session

*World Wildlife Fund  
Department of Fisheries and Oceans*

*Halifax, Nova Scotia  
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## Table of Contents

---

<b>Report Overview Regional Workshop on Marine Spatial Planning.....</b>	<b>1</b>
<b>Day 1 .....</b>	<b>3</b>
<b>Welcome.....</b>	<b>3</b>
<b>Panel 1 Setting the Scene .....</b>	<b>3</b>
1. What MSP Implementation Could Change in the Maritimes Region.....	3
2. What MSP Implementation Could Change in the Northeast United States .....	4
3. Recommendations for Implementing Marine Spatial Planning in Canada: Tools and Practical Implications .....	5
Discussion .....	6
<b>Panel 2 The Importance of Planning Certainty and Reliability for Sustainable     Economic Development: The Case of Renewable Ocean Energy .....</b>	<b>6</b>
Discussion .....	8
<b>Panel 3 Tools for MSP: Science and Assessment.....</b>	<b>8</b>
1. Spatial Planning and Coastal Zone Management: An International Council for Exploration of the Sea (ICES) Perspective on Science for Management .....	8
2. Advancing the Assessment of Cumulative Impacts for MSP .....	8
1. Ecological Risk Analysis and How to Incorporate Risk in MSP .....	9
Discussion .....	9
<b>Panel 4 Linkages between Marine Conservation Planning and MSP .....</b>	<b>10</b>
1. MPA Network Planning in the Scotian Shelf Bioregion .....	10
2. Integrated Marine Planning Activities in the Beaufort Sea .....	10
3. Marine Conservation Planning and MSP on Canada’s Pacific Coast .....	11
4. Panel Summary .....	11
Discussion .....	12
<b>Day 2 .....</b>	<b>12</b>
<b>Panel 5 Tools for MSP: Required Knowledge .....</b>	<b>12</b>
1. Spatial Planning in Canada’s Maritimes Region.....	12
2. Designing a Marine Spatial Plan and Integrating Multiple Uses through MSP	13
3. The Rhode Island Special Area Management Plan (SAMP).....	14
Discussion .....	14
<b>Learning from the Experts .....</b>	<b>15</b>
Group 1 Ocean Energy .....	15
Group 2 Cumulative Assessment .....	16
Group 3 Risk Analysis.....	16
Group 4 Spatial Planning and Science .....	17
Group 5 Conservation/Protected Areas and MSP .....	17
Group 6 Multiple Use.....	18

<i>Group 7</i> Zoning as a Component of MSP.....	18
<i>Group 8</i> Assessing Human Activities .....	19
<b>Wrap-up and Next Steps</b> .....	<b>21</b>
Recommendations from Workshop Participants .....	22

## Report Overview

# Regional Workshop on Marine Spatial Planning

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Marine Spatial Planning (MSP) is an internationally emerging policy tool for the management of ocean space.

On June 1–2, 2011, Fisheries and Oceans Canada (DFO) Maritimes Region, in collaboration with World Wildlife Fund Canada (WWF-Canada), hosted a regional workshop in Halifax, Nova Scotia. This technical learning session was a follow-up to the Ocean Summit of June 15, 2010, and engaged key stakeholders in a discussion of:

- Techniques, tools, and approaches that can be used for MSP implementation
- Linkages between marine conservation planning and MSP
- Existing and predictable future marine activities
- Importance of MSP for economic development-related decision-making
- Real-life MSP examples in other countries

Invited participants included representatives from Fisheries and Oceans Canada (DFO), the Maritime Provinces Regional Committee on Coastal and Ocean Management (RCCOM), the US National Oceanographic and Atmospheric Administration (NOAA), the Northeast Regional Ocean Council (NROC), other provincial/federal/state government departments, Aboriginal groups, NGOs, industry, scientists and academics. Together, they:

- Examined existing MSP elements in Canada
- Explored benefits and processes of real-life examples from Europe, Massachusetts, Rhode Island, and other international contexts
- Identified strengths and challenges to MSP implementation in Canada
- Offered suggestions for next steps and items of further study

Participants were engaged and offered positive discussion about the potential of MSP to support decision-making, ecological protection, economic development, and public engagement. Challenges were also identified, including:

- Overlapping jurisdictions
- Emerging industries
- Multiple data formats

- Community engagement
- Capturing the human element in what has traditionally been a biology-centred process

The workshop provided opportunities for participants to learn from expert panels, and concluded with an opportunity for organizers to learn from the participants, who offered some tools and tasks required to move forward. Of particular note was the identified volume of available data and processes and the need for co-ordination between them.

This report presents a high-level overview of key discussion points from the workshop, with a focus on those that could be helpful or instructive to future action. While the report does not capture speakers' remarks in detail, their presentations are available from WWF-Canada upon request.

## Day 1

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### Welcome

*Faith Scattolon, Regional Director General, Fisheries & Oceans Canada (DFO) Maritimes Region*

*Bob Rangeley, Vice-President, Atlantic Region, World Wildlife Fund (WWF)-Canada*

**Faith Scattolon** spoke of the importance of successful partnerships, such as this collaboration between Fisheries and Oceans Canada (DFO) and WWF-Canada, and of the relationship between Marine Spatial Planning (MSP) and Integrated Management (IM).

**Bob Rangeley** said it is the tenth anniversary of the WWF marine program, and while progress seems slow, it has been positive. He identified the need to link MSP to sustainability and socio-economics, saying successful marine spatial planning will “strike the right balance between activity and nature.”

### *Panel 1*

#### Setting the Scene

##### **MODERATOR**

*Kathleen Connelly, Senior Consultant and Facilitator, Intersol Group Ltd.*

#### 1. What MSP Implementation Could Change in the Maritimes Region

*Tim Hall, Regional Manager, Oceans and Coastal Management Division, DFO Maritimes Region*

Canada’s *Oceans Act (1996)* grants DFO the authority for marine environmental quality and planning. The Minister of Fisheries and Oceans has the authority to plan for MSP. Other oceans-mandated ministers have the authority to implement MSP within their respective authorities; this requires an integrated approach to marine planning.

IM is successful if there is a shared vision of ocean space, if government structure supports collaboration, and if the plan respects existing divisions and legislative authorities at all levels. MSP is successful if there is a shared vision, if information gathered supports taking action, and if a central plan sets specific directions. Care must be taken, as MSP potentially overrides existing authorities.

DFO can incorporate MSP into its IM without compromising authorities and existing plans. One example of this is the Eastern Scotian Shelf Integrated Management (ESSIM) plan, which is focused on sustainable development based on healthy ecosystems. ESSIM is entering the evaluation phase of its five-year plan and is preparing for a rigorous performance review.

MSP was discussed within ESSIM in 2008. Drivers for MSP on the Scotian Shelf include a real desire among participants for action, and spatial and temporal measures to achieve objectives. A marine renewable energy task force and provincial legislation are being developed.

DFO is involved in several collaborative initiatives: the Regional Committee on Ocean Coastal Management; Integrated Coastal and Oceans Management (ICOM), which has in its framework the development of MSP; Bioregional MPA Network Planning; and the Gulf of Maine Council on the Marine Environment.

The eventual goal is to ensure IM and MSP move forward together. Tools and information should be shared in existing systems.

## 2. What MSP Implementation Could Change in the Northeast United States

*Shannon Dionne, Northeast Regional CMSP Senior Program Analyst, U.S. National Oceanographic and Atmospheric Administration (NOAA), Office of International Affairs*

Coastal and Marine Spatial Planning (CMSP) is the term of art used in the United States for MSP. CMSP is defined as a comprehensive, adaptive, integrated, ecosystem-based, and transparent planning process, based on sound science, for analyzing current and anticipated uses of ocean, coastal, and Great Lakes areas. CMSP identifies areas most suitable for various types or classes of activities in order to reduce conflicts among uses, reduce environmental impacts, facilitate compatible uses, and preserve critical ecosystem services to meet economic, environmental, security, and social objectives. In practical terms, CMSP provides a public policy process for society to better determine how the ocean, coasts, and Great Lakes are sustainably used and protected - now and for future generations.

In the United States, the National Policy for the Stewardship of the Ocean, Coasts, and Great Lakes created an interagency National Ocean Council formed of twenty-seven federal entities, to provide sustained, high-level, and coordinated attention to advance the National Policy. The National Policy also establishes a flexible framework for effective CMSP to address conservation, economic activity, user conflict, and sustainable use of ecosystem services.

Four of the nine regional planning areas in the United States share borders with Canada. These regions border the Northeast, Pacific, Great Lakes and Alaska / Arctic regions.

In the Northeast Region (the Atlantic coast, it is expected that a Regional Planning Body (RPB) will be established in late summer / early fall of 2011. It is also expected that a regional CMSP Workshop will be organized later in the year. A Northeast Data Portal is under development. The Northeast Regional Ocean Council (NROC) was formed in 2006 by the New England Governors. NROC consists of Federal and States' agencies. The Gulf of Maine Council is considered a strong partner.

It is important to note that the CMSP Framework does recognize that the US shares maritime boundaries with other nations. Given that activities happening outside of the planning area of each regional planning body may affect CMSP decisions in that area, ex officio or observer membership on these bodies could be extended. The U.S. views that their engagement with international partners bilaterally and multilaterally helps achieve increased cooperation and coordination on ocean issues.

3. Recommendations for Implementing Marine Spatial Planning in Canada:  
Tools and Practical Implications

*Nicole Schaefer, Director, Sustainable Ocean Solutions Inc.*

Interest and political awareness of MSP is growing internationally. Australia is the most experienced in MSP. Its Great Barrier Reef Plan was set up 20 years ago. Belgium, the Netherlands, Germany, Norway, and Portugal are in various stages of MSP development. Sweden and the United Kingdom have legislation and authorities, but no plans yet. China has a *Law on the Management of Sea Use (2002)* and a right to sea-use authorization system.

Regarding Integrated Ocean Management (IOM) and MSP, MSP is not a new system, but it is embedded in existing IOM processes.

Nicole Schaefer worked two years ago with WWF-Canada and DFO to determine the benefits of MSP for Canada. She presented key findings:

- MSP tends to gravitate toward densely used marine areas.
- A need exists to define the criteria and threshold for compliance rather than zones for particular use.
- There is a need to use the best available knowledge and data, rather than wait for new data or the “perfect” situation.
- Science should accompany the entire MSP.
- MSP needs to be flexible and adaptive.
- International MSP examples include Norway and Scotland, who use strong science and a good knowledge base, and who examine sectoral impacts and identify overall pressures. Ireland’s Sea Change Policy feeds MSP, but it is designed to transform the maritime economy.

Schaefer posed a key question that MSP must answer: How does one plan for constant change?

## Discussion

The U.S. executive order provides authority but no money. In Canada there is funding but no mandate for others to listen to DFO. Both funding and a mandate are required for an effective MSP.

Norway has modeled scenarios to 2020. The approach required extensive stakeholder involvement to set priorities and guiding principles on how to co-exist. All government departments with an ocean mandate have signed on voluntarily, bound not by law but by belief in the system.

### *Panel 2*

#### The Importance of Planning Certainty and Reliability for Sustainable Economic Development: The Case of Renewable Ocean Energy

##### **MODERATOR**

*Darren Williams, Manager, Ocean Industries and Socio-economic Division, DFO*

##### **PRESENTERS**

*Hans Christian Sorensen, Director, European Ocean Energy Association*

*John Woods, Vice-President, Energy Development, Minas Basin Pulp and Power Co. Ltd.*

*Fara Courtney, Executive Director, U.S. Offshore Wind Collaborative*

*Sandra Farwell, Manager, Strategic Policy, Planning & Services, Nova Scotia Department of Energy*

**Darren Williams** said multiple use is driving spatial planning as renewable energy development grows in awareness and reality. A mechanism is needed to integrate ocean energy with other industries and marine activities.

There is enormous potential in Europe for energy production by wind and tidal power.

Offshore employment in wind farms is an estimated 11 jobs per megawatt (MW), and employment in wave/tidal operations is estimated at 6.5 direct jobs and three indirect jobs per MW.

MSP has minimized the risk of conflicts, which has enabled faster project development and cheaper costs per MW.

Public consultation enabling technology or other visual demonstration gains information and builds support for coexistence.

**John Woods** said two mathematical models of the Bay of Fundy (from the National Research Council and Acadia University) show that 2,500 MW of electricity can be generated without measureable tidal change. The Fundy Ocean Resource Centre for Energy is pursuing this option.

Newfoundland, Nova Scotia, and Prince Edward Island have good potential for wind turbines. MSP for ocean energy needs to include the four Atlantic Provinces, bring together all stakeholders, demonstrate both current use and potential conflicts, and provide credible assessments.

A change in attitude is needed to make MSP a success. Everyone needs to share the sea, and the importance of renewable energy must be acknowledged.

**Fara Courtney** said MSP for offshore wind energy generation and marine spatial planning helps leverage interest and financial investment.

The U.S. Offshore Wind Collaborative is advocating for a new industry without a national energy policy. Its stakeholders include environmental experts, energy advocates, and public and private interests.

The U.S. wind energy industry generates 488 MW per minute, whereas Europe generates 25 gigawatts (GW) per minute.

Wind generation requires a complex, concentrated system of facilities and support that fits well into an MSP. An MSP serving the needs of the wind energy industry would include equal partnership with other marine users, clear rules and efficient timelines to build investor confidence, and flexibility to adapt to new opportunities and technology.

The United States and Canada need “wet steel.” They must build and demonstrate to gain the data and understanding needed to continue growth. Collaborative Offshore Wind Research into the Environment (COWRIE) in the United Kingdom is a charitable trust established to conduct environmental research. All of its data is available to the public. Germany has permanent structures dedicated to wind energy demonstration and research.

**Sandra Farwell** said the potential of tidal energy in Nova Scotia is estimated at 2,500 MW. Offshore and onshore wind potentials are estimated at 60,000 MW each.

In 2011–15 about 5 MW of tidal generating is expected for the Bay of Fundy. That could grow to 10–64 MW in the years 2015–2020.

Economic modeling by the Atlantic Energy Gateway shows that the best-case scenario for 2020–25 is 300–1,000 MW of tidal power generation in the Bay of Fundy. The scenario forecasts industrial-scale development centred in the Minas and Cumberland basins and clearly defined licensing for small community development.

The ESSIM stakeholder process would not work for marine renewables, as it is localized geographically. Effective MSP for ocean energy involves more provincial stakeholders, local planning engagement rather than interest groups, and working to industry timelines.

## Discussion

ESSIM is pushing the Province of Nova Scotia for a coastal strategy, and the Nova Scotia Department of Energy is proceeding outside of this coastal strategy. Bruce Cameron, director of strategic policy and services at the Nova Scotia Department of Energy, said a community-scale, renewable energy strategy, focused on small projects generating in the kilowatt rather than in the megawatt range, is set to launch. Large-scale industrial projects, such as those discussed for the Cumberland and Minas basins, require a different approach to planning and stakeholder engagement. ESSIM's territory does not include the basins considered for industrial development.

The question of whether a system can be both secure and flexible was raised. For security, and given the timelines and possibilities of what may occur, developers require the flexibility to launch a project and adapt as technology and resources permit. "If we don't start, we will never get the answers," Sorensen said.

Wind and wave projects are good for renewable energy, but can pose navigational and recreational obstacles. This speaks to the need for planned coexistence. "Show me the deed to your path if you're going to claim the sea," said Woods.

### *Panel 3*

#### Tools for MSP: Science and Assessment

##### **MODERATOR**

*Kathleen Connelly*

1. Spatial Planning and Coastal Zone Management:  
An International Council for Exploration of the Sea (ICES) Perspective on Science for Management

*Roland Cormier, Regional Director, Oceans and Habitat Branch, DFO Gulf Region*

ICES, formed in 1905, has more than 100 working groups. The Working Group on Marine Planning and Coastal Management acknowledges the need for both social science and biology for effective marine planning. In 2012 the working group will identify methods to evolve from pure ecology to an anthropological approach.

MSP requires ecosystem-based principles to unite anthropology and ecology.

2. Advancing the Assessment of Cumulative Impacts for MSP

*Hussein Alidina, Marine Science and Planning Office, WWF-Canada*

Ecosystem-based management differs from most approaches by focusing on all sectors. The vulnerability of the ecosystem and the intensity of the activity must be examined.

Quantifying cumulative impacts is a challenge. For example, the sum of impacts could be less than the total effect, as some individual sources may be mitigated.

An effective quantification model is needed for planning and decision making.

A 2008 study mapped and quantified cumulative impacts in a coastal area of British Columbia. Spatial data of various activities was organized by impact, and the sum totals were charted.

Potential applications for MSP include selecting areas for preservation or restoration, zoning on the basis of sensitivity, and mitigating and taking precautionary measures.

Much research is needed in this area, but the tool holds the potential to measure impact.

#### 1. Ecological Risk Analysis and How to Incorporate Risk in MSP

*Marc Ouellette, Coordinator, Centre of Expertise for Coastal Management, DFO Gulf Region*

Zones can be managed in various units based on human value, as long as the system is transparent and understandable to all users.

Risk communication should be considered to ensure that all stakeholders are included and working together, throughout the process. Prepare for what *could* go wrong. Risk analysis also includes risk identification, risk assessment, and risk management.

Natural sciences are critical to defining pathways of environmental effects and how they can alter the state of ecosystems. Social sciences are critical in defining the ecosystem goods and services that we rely upon. The DPSIR conceptual model (drivers, pressures, state of the ecosystem, impacts, and responses) can be useful in determining the critical paths and points to consider.

A good understanding of the pros and cons of our responses (e.g. mitigation measures) is required at the beginning of the planning process to demonstrate the consequences attached to actions and to forecast cost effectiveness. An ecosystem-based risk management framework is currently in development, using the risk analysis principles, to increase our effectiveness in integrated coastal and oceans management.

#### Discussion

The greatest challenge for risk-based assessment is setting risk criteria for determining the consequence. Some methods are quantitative, while others include qualitative elements, such as social and cultural perspectives.

There is no perfect model. It can be easy to get “bogged down in picky science issues” and to forget that there are no absolutes.

Thresholds are different for science and social interests. A 10% margin may be comfortable for the scientific community, but not for the general public.

All science can do is show the available data, which can be actual measurements or professional judgment. The best approach is to share what is available with everyone involved and make a decision, rather than to wait 25 years for more data.

#### *Panel 4*

### Linkages between Marine Conservation Planning and MSP

#### **MODERATOR**

*Maxine Westhead, Manager, Marine Protected Areas, DFO Maritimes Region*

#### 1. MPA Network Planning in the Scotian Shelf Bioregion

*Marty King, DFO Maritimes Region*

Marine Protected Area (MPA) network planning is a good example of MSP. Both MPA planning and MSP are systematic and objective-based, and involve stakeholders early and often. Both also require methods or tools for analyzing spatial information to help identify planning solutions.

This is a data-rich region, yet there are gaps and challenges.

In 2007, the protected-area planning software, Marxan, was used to analyze ecological data to help identify an Area of Interest for MPA designation on the Eastern Scotian Shelf. Looking ahead, the ecological data layers will be updated and put through a DFO peer-review exercise as part of a formal bioregional MPA network planning process that will take place within a broader Integrated Coastal and Ocean Management (ICOM) context.

The Scotian Shelf *Human-Use Atlas* is being updated by our ICOM team with the most recent information on human activities, such as commercial fishing, shipping, offshore petroleum, and submarine cables. Data gaps include potential future activity, such as tidal and wind energy, and methods to validate human-use information.

This human use information will eventually be analyzed using Marxan along with the updated ecological data to identify a suite of areas that collectively satisfy the conservation objectives of the MPA network but attempt to avoid areas of high economic value. The results will be the focus of continued dialogue with other government agencies, Aboriginal groups and stakeholders as we proceed toward an MPA network plan for the bioregional.

Marxan is a decision-support tool, not a decision-making tool.

#### 2. Integrated Marine Planning Activities in the Beaufort Sea

*Leah Brown and Adrienne Paylor, DFO Central and Arctic Region*

The planning region has six distinct coastal communities and a wealth of local knowledge.

The public engagement process began in 2005. Partnership now includes 82 members. The plan was developed with seven overarching goals, objectives, strategies, and specific actions.

Partnership working groups are developing action plans.

Challenges include vetting or reviewing information used for mapping, the lack of data in some areas, and the issue of science versus traditional knowledge.

### 3. Marine Conservation Planning and MSP on Canada's Pacific Coast

*Neil Davis, DFO Pacific Region*

MSP is a tool to achieve conservation planning. It can also achieve IM.

MSP allows for the zoning of different areas for protection. Zoning is typically approached as a restriction on activity. However, zoning can be approached differently. For example, a plan can create a vertical zone to allow shipping and to protect a certain species.

Better linkages of data banks are needed. There is so much data gathering and assembly, but there is a need to take advantage of what already exists.

Multiple processes challenge everyone. A solution is to bring conservation discussions into one place, and discuss how to achieve goals in a more centralized way.

The Pacific North Coast Integrated Management Area is a coordinated assembly of spatial data and a collaborative effort with government, First Nations, and stakeholders.

### 4. Panel Summary

*Camille Mageau, Director, Oceans Policy and Planning, DFO National Capital Region*

Highlights from the panel are included in the following points:

- A number of processes and governance bodies, as well as advisory, technical and working groups, are needed to maintain the commitments of legislation.
- Visual presentations are an important engagement tool.
- MSP informs the decision; it doesn't make the decision.
- All desire a plan to provide clarity for marine activity that encourages multiple uses, but that maintains a healthy ecosystem.
- Marine Conservation Planning (MCP) and MSP both speak to spatial plans. They are adaptive and integrated, using common analytical tools and are ecosystem-based. MCP and MSP are both transparent.
- The processes need to be integrated to avoid duplication.

- The need exists to facilitate data sharing and ensure consistent use of knowledge. The question was raised as to whether there is room for confidentiality, in that the ocean is common property.
- A way must be found to locate efficiencies in government without fettering the jurisdictional mandate, overwhelming participants, and losing the particularities of each region.

#### Discussion

To what extent does MSP include climate change? A joint Canada–United States–Mexico project is working to identify the drivers of climate change and is examining the possibility of flexible boundaries or sector management in significant areas.

- The question of whether MSP will result in a loss of MPAs was discussed. There are many ways to achieve goals and objectives without MPAs. Having an IM plan in place will also achieve multiple objectives. There is a trend toward numerous small-block MPAs and away from fewer large-block MPAs. Connecting those smaller blocks creates another set of impacts.
- No one agency should try to consolidate all the data needed.
- A proactive approach—not just a “give me your data” approach, but a “how can I share my data with you?” approach—toward data sharing may be needed.
- A primary issue is not data availability, but ease of access. There is more information available than can be used, but little is known about where to find the information and how to format or manipulate it.
- An interim MSP rather than a final plan may be required, to ensure that areas of stress and activity are properly identified and regulated.

## Day 2

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### *Panel 5*

#### Tools for MSP:

#### Required Knowledge

##### **MODERATOR**

*Kathleen Connelly*

#### 1. Spatial Planning in Canada’s Maritimes Region

*Glen Herbert, DFO Maritimes Region*

*Scott Coffen-Smout, DFO Maritimes Region*

*Tanya Koropatnick, DFO Maritimes Region*

The Spatial Conservation Action Plan (SCAP) is the first collaborative action plan under ESSIM. It was started four years ago with several partners, including WWF and the Ecology Action Centre.

SCAP's gap analysis showed a need for mapping multiple-use fishing areas. Draft socio-economic principles for conservation planning have been developed.

The updating of fisheries maps in the *Human-Use Atlas* is ongoing. Shipping traffic was a challenge, but long-range identification and tracking data have been obtained and analyzed for the Atlantic. The Pacific and Great Lakes data is in raw form. New data needs a validation process.

The GIS for Management of the Oceans (GISMO, a decision-support tool) was developed in-house for the *Human-Use Atlas*.

The joint fisheries–cable industry working group, established in 2005, is an example of MSP in practice. Route planning that includes both submarine cables and fisheries interactions reduces the threat of legal liability for cable damage and the loss of fishing access. Data and coordination have been provided for a new cable installation between Halifax and Somerset, England, planned for 2012.

Mapping and monitoring is recording the impact of Transport Canada's decision to zone a portion of the Gully MPA for vessel ballast exchange. Mapping, to date, is showing compliance with regulations, but also some evidence of potential non-compliance.

Fisheries and coral conservation is an example of a stakeholder group established when science showed that an area needed protection. In one case, the long-line fishery in a coral area devised a boundary to allow access to the fishing grounds without disturbing the coral.

Next steps include expanding and updating the mapping of human activities, working with industry, communicating and sharing spatial information, applying spatial analysis tools, and working with other regulatory authorities.

## 2. Designing a Marine Spatial Plan and Integrating Multiple Uses through MSP

*John Weber, Northeast Regional Ocean Council*

The Massachusetts Ocean Plan was signed into law in 2008. The law passed quickly, indicating a sense of urgency. The Massachusetts governor was concerned about climate change and saw renewable energy as an important job opportunity. The plan focuses on "blue water," the area of 1,500 feet to three miles, not on dock and pier management.

The US national *Oceans Act (2000)* dictates that the Massachusetts Ocean Plan must be spatial, contain goals, cite priorities and standards, and identify and protect special, sensitive or unique sites.

A task force was given 12 months to develop a draft plan. A firm timeline is recommended.

Public involvement included hundreds of meetings in 12 months that gathered ideas, educated the public, tabulated available science and data, and focused on goals, objectives, and decisions.

Translating the US national *Oceans Act (2000)* to an ocean plan through spatial data involves goals and strategies, a compatibility assessment, screening criteria (a GIS exercise), plan development and a draft plan.

A five-year science plan is under way. Goals include further work on the cumulative impacts.

### 3. The Rhode Island Special Area Management Plan (SAMP)

*Grover Fugate, Executive Director, Rhode Island Coastal Resources Management Council*

The Rhode Island Coastal Resources Management Council was set up as an MSP in 1971, and drafted its first MSP in 1983.

The need for utility-grade wind energy turbines launched a process that put the planning perspective first. The process involved federal and state task forces, a technical panel, and stakeholders. A built-in fishermen's advisory board established early interaction with the fishing community. The University of Rhode Island (URI) was a key research partner.

A GIS assessment model developed by URI included a technical development index, a technical challenge index, and power production potential.

The GIS model resulted in a map with low construction costs and high production potential. The map was over-laid with maps for commercial traffic, biology, and geology to identify the best sites.

The final plan is 1,000 pages long, with 2,000 pages of technical documents. It was adopted by the State of Rhode Island in 2010 and is now going through the process of federal consistency to extend authority to 30 miles offshore.

#### Discussion

Maps create transparency and engage the public. Clarity is needed, however, on how the data is obtained, analyzed, and translated into a map. Restricted zones can be controversial, and benchmarks need to be clear on what makes one region red and another only yellow.

The Massachusetts Ocean Partnership is a private entity that assisted Massachusetts with the development of its marine plan prior to the federal US *Oceans Act (2000)*. John Weber compared the partnership's involvement to that of URI in Rhode Island's SAMP, providing funding, research, and planning support.

The foundation supporting the Massachusetts Ocean Partnership is also involved in work in British Columbia, which has generated some controversy. Weber said involvement with the private partnership in Massachusetts required clear delineation of responsibility and authority. The State of Massachusetts was the identified developer of the plan. Clear guidelines and communication avoided controversy.

Massachusetts and Rhode Island have actual no-go zones; Canada does not. There needs to be better legislation and political will to provide top-level advice and decisions.

Massachusetts and Rhode Island have voluntarily declared an area of mutual use, where marine borders converge and share in the impacts and benefits of activities in that region. The area is in federal waters, but the agreement is between the two states.

## Learning from the Experts

### **MODERATOR**

*Kathleen Connelly*

Participants were asked to discuss one of eight topics in small working groups. Each group was given one hour for discussion and was asked to record highlights to share with the group at large.

Each working group was asked to conclude what its insights were, and what was collectively learned in the discussion.

### *Group 1*

*Ocean Energy*

Renewable energy dominated the discussion. Highlights include the following points:

- MSP makes sense as a tool for ocean energy development.
- Economics is a driver in the United States, whereas renewable energy targets and jobs are drivers in Europe. Canada is more localized: some provinces have energy targets, and some are focused on job creation.
- Strategic Environmental Assessments must first ask the question: is the development commercial scale?, then take into account timelines and production limits.
- The need exists to decide whether strategic environmental assessment is appropriate, to consider the use of an area, involve the community, and understand activity.

- The supply chain is a key assessment component.
- An adaptive process is needed to accommodate project scope and scale, and incremental production.
- The price of electricity could impact approval.

**Suggested actions:**

- Understand and define the main drivers guiding industry development. Possibilities include technical limitations and transfer, site selection, finances, and community support.
- Consider land-related transmission and grid components in overall plan.

*Group 2*

Cumulative Assessment

Highlights from the discussion include the following points:

- Cumulative assessment can capture high-pressure areas, pick up on areas previously unsuspected, and assess risk aversion. This can be useful in scenario-building, planning, and management decisions.
- A cumulative assessment model can be a good communication tool for stakeholders, providing an understandable, visual demonstration of steps and decisions.
- Little guidance or information on spatial components is available.
- A petroleum environmental management tool created by the Department of Aboriginal Affairs and Northern Development will soon be available online.

**Suggested actions:**

- Clarify assumptions, data validity, scoring, and weighting within qualitative assessments.
- Determine thresholds and tipping points within ecosystems. This would have a practical application for multiple-use determination.
- Assess how a stressor or stressors impacts different habitat types.

*Group 3*

Risk Analysis

Highlights from the discussion include the following points:

- Risk analysis serves as a triage function with MSP, identifying issues and priorities.
- Terms must be clearly defined. Note the difference, for example, between “assessment” and “analysis.”

- With clearly defined criteria, risk analysis is a good, transparent process.
- Risk analysis puts all proponents on the same playing field.
- Risk assessment can be a great screening tool. It is important to capture a sense of risk, both spatially and temporally.

**Suggested actions:**

- Clarify existing activities, terms, and unified commitment—the public can sense strife.
- Look within DFO to compare various risk approaches to understand the different interpretations of “risk analysis.”
- Clearly define and standardize terminology.
- Develop clear criteria to determine environmental consequences on vulnerable ecosystem components.

*Group 4*  
Spatial Planning and Science

Highlights from the discussion include the following points:

- The data needs to be up-to-date.
- Standards are needed for mapping and data sharing. These standards must be responsive, open, and transparent.
- Regulators determine acceptable levels of risk. Spatial management requires science for monitoring objectives and outcomes.

**Suggested actions:**

- Move from descriptive assessment to susceptibility and vulnerabilities related to risk.
- Use ecological data layers as a starting point.
- Clarify interactions between layers in MSP.

*Group 5*  
Conservation/Protected Areas and MSP

Highlights from the discussion include the following points:

- As many layers and views as possible must be included — including social and economic, not just ecological.
- MPAs have a conservation purpose, which must be included in MSP.

- ESSIM is a good starting point.
- Industry must be engaged, and its objectives must be learned from the start.
- A small community MSP would gain confidence in the process. Provide a toolkit to assist.

**Suggested actions:**

- Prioritize marine protected areas (MPAs) as conservation zones.
- Determine precise definitions of MPAs and more specific objectives.
- Examine and present government data to encourage industry reaction.

*Group 6*  
Multiple Use

Highlights from the discussion include the following points:

- Starting point is ecological, but socio-economics is an essential consideration.
- Multiple use can be interpreted to be compatibility, conflict resolution, and policy calls.
- Attention must be paid to all other policy drivers.
- Public acceptance and buy-in is mandatory.
- A good starting point might be ecological and/or environmental concerns.
- Use qualitative as well as quantitative measures.
- Ways in which to visualize, such as maps with existing data available for public use, are required.

**Suggested actions:**

- Engage the public early and often: community valuation criteria are important for quantification.
- Determine methods of analysis for economic impacts within an ecological space.
- Make data available to the public: let them “play with it.”

*Group 7*  
Zoning as a Component of MSP

Highlights from the discussion include the following points:

- A high-level, political driver to make zoning happen is needed. As in Rhode Island, it may come about in the aftermath of an event such as the Gulf oil spill or through a key economic driver.

- The potential for performance-based zoning exists.
- Collaborative arrangements, such as sharing resources within capacity, should be considered. Funding can be secured with external partners.
- Financing tied to a seabed access permit is effective, where banks can leverage a legal title against enforcement action.
- There are questions about overlapping authority and whether sectoral-based systems can be integrated.

**Suggested actions:**

- Establish a timeline to finish the plan.
- Determine who has the authority to undertake zoning in areas of overlapping federal-provincial authorities.
- Include performance-based measures and thresholds in zoning plans, rather than a strictly no-use zone.

*Group 8*  
Assessing Human Activities

Highlights from the discussion include the following points:

- Compatibility measures and classification codes are needed.
- Well-identified issues can be mitigated.
- It is difficult when dealing with use versus a larger conservation plan.
- It is challenging to consider historical and future/unknown use patterns.
- Pressure and receptor evaluation need to evolve from sector specific to pressure specific.
- Good, consistent criteria for evaluation are needed.
- There is a need to be able to go back to pure ecology and a pure socio-economic picture, and to connect the two when mapping and network planning.
- The need exists for good data and confidence in how the data is collected. Universities could be of help here.

**Suggested actions:**

- Map areas of priority or essential use.
- Maintain “building blocks” of human use and ecological attributes, providing flexibility in parameters and targets when assessing interactions while preserving baseline information.

- Involve stakeholders in data selection and collection, to build trust in data quality and process.

## Wrap-up and Next Steps

### **MODERATORS**

*Tim Hall, Regional Manager, Oceans and Coastal Management Division, DFO Maritimes Region*  
*Andrew Dumbrielle, Manager, National Oceans Governance, WWF-Canada*

**Tim Hall** said there is recognition that MSP needs to be based on local conditions and drivers. MSP is not something to fear, and it will not replace existing systems.

DFO Maritimes Region is committed to the following steps:

- Build marine spatial planning into the DFO region-wide ICOM framework to advance integrated ocean management objectives;
- Harmonize integrated ocean management areas with MPA bioregional planning scales;
- Undertake MSP-relevant mapping and analysis in support of Government of Canada-mandated bioregional MPA network planning;
- Focus on building spatial analysis tools and update regional information base for adaptive management;
- Work with government partners and industry to ensure map products are validated, accepted and used in planning, management and decision making;
- Communicate spatial information to regulators, industry, and the general public (e.g., multipurpose marine cadastre, geo-referenced pdfs);
- Apply spatial analysis tools (e.g., spatial risk assessment, intensity of use metrics, cumulative impacts analyses, future scenario modeling) to identify user-user and user-ecosystem conflicts and compatibilities in marine space;
- Work with other regulatory authorities to coordinate sectoral-based spatial planning and regional environmental assessments;
- Advance Canada-USA workplan under the Gulf of Maine Council on coastal and marine spatial planning in the Gulf of Maine;
- Implement marine spatial planning approaches in bioregional planning areas where use, conflict and sensitivity demand it; and
- Undertake a 5-year performance evaluation of the ESSIM Plan.

**Andrew Dumbrielle** said the workshop objectives had been accomplished. The need now is to build on these conversations and keep the momentum going. He asked participants to share suggestions for next steps.

WWF is committed to the following steps:

- Preparing a report of the workshop and making sure presentations are distributed to all the participants.
- Working within the Gulf of Maine Council as an active member to share resources and expertise to further cross-border marine planning.
- Work closely with DFO Maritimes Region to advance marine planning and develop tools and approaches for conservation and sustainable development.

#### Recommendations from Workshop Participants

Participants made suggestions for the future:

- Host a session addressing obstacles to MSP development and implementation.
- Focus on communication. Details at the technical level and “at 30,000 feet” have been well shared, but the middle layer, explaining MSP to the public, is needed.
- Attach timelines to any next steps.
- Choose a few topics or issues to prioritize, leading to products and outcomes that can serve as an example of the work.
- Develop a how-to working model on information sharing, with an emphasis on socio-economic data.
- Cement the relationship between Canada and the United States, and build on expertise shared at this workshop.
- Target thresholds in MSP; avoid battles in front of stakeholders.
- Release federal principles on MSP. Regions are making their own plans, but are held up by the lack of federal guidance.
- Ensure that the engagement of stakeholders’ groups remains a priority.