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Management Review of the Gully Marine Protected Area

2007-2010





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Background

The Gully is a deep submarine canyon located off the coast of Nova Scotia near Sable Island. This unique environment provides habitat to a diversity of species including cold water corals, fish, and marine mammals such as the endangered Scotian Shelf population of northern bottlenose whales. The Gully was designated a Marine Protected Area (hereafter referred to as “the Gully”) in May 2004 through regulations under the *Oceans Act*.

The Gully Marine Protected Area Management Plan¹ was developed to support the regulations and provide guidance for the protection and management of the area. The plan lays out an overarching vision for the Gully and commits to a number of conservation, management and stewardship, and research and monitoring objectives to help achieve this vision (Box 1). The plan outlines key management commitments and proposed actions to help meet management objectives, and describes roles and responsibilities for Fisheries and Oceans Canada (DFO), the Stakeholder Advisory Committee, and other government regulators for managing the area.

Marine Protected Area management effectiveness is the degree to which management actions contribute to the goals and objectives of the Marine Protected Area.² The Convention on Biological Diversity’s *Programme of Work on Protected Areas* calls for all participating nations (including Canada) to develop and implement systems for assessing the management effectiveness of protected areas (Goal 4.2).³ DFO’s *Marine Protected Area Policy* and the Government of Canada’s *Federal Marine Protected Area Strategy* also call for the evaluation of site management effectiveness against stated goals and objectives as part of Marine Protected Area program implementation.⁴ Similarly, *Canada’s Oceans Strategy* stresses the need for “results-based management and accountability frameworks for measuring progress, relevance and effectiveness”.⁵ Furthermore, the *National Framework for Establishing and Managing Marine Protected Areas*, and the internal *Oceans Act Marine Protected Areas Policy and Operational Framework* both address the need for periodic review of site effectiveness with public input to determine if management objectives are being met.⁶ Finally, the Gully Marine Protected Area Management Plan lists “Monitor and evaluate the design, management, and

¹ DFO, 2008. The Gully Marine Protected Area Management Plan. Oceans and Habitat Branch, Fisheries and Oceans Canada, Dartmouth, N.S. 76 pp.

² Pomeroy, R.S., Parks, J. E., and Watson, L. M., 2004. How is your MPA doing? A guidebook of natural and social indicators for evaluating marine protected area management effectiveness. IUCN, Gland, Switzerland and Cambridge, UK. Xvi + 216 pp.

³ Programme of Work on Protected Areas. Online materials: <http://www.cbd.int/programmes/pa/pow-goals-alone.pdf>

⁴ DFO, 1999. Marine protected area policy. Fisheries and Oceans Canada, Marine Ecosystems Conservation Branch, Oceans Directorate, Ottawa, ON. 11 pp.; Government of Canada, 2005. Canada’s federal marine protected areas strategy. Fisheries and Oceans Canada. Communications Branch, Fisheries and Oceans Canada, Ottawa, ON. 18 pp.

⁵ DFO, 2002. Canada’s Oceans Strategy. Oceans Directorate, Fisheries and Oceans Canada. Ottawa, ON. 39 pp.

⁶ DFO, 1999. National framework for establishing and managing marine protected areas. Online materials: <http://www.dfo-mpo.gc.ca/oceans/publications/mpaframework-cadrezpm/index-eng.asp>; Government of Canada, 2009. *Oceans Act Marine Protected Areas Policy and Operational Framework: A Practitioner’s Guide*. Ottawa, ON. 110 pp.

effectiveness of the site on a regular basis to ensure that it is meeting defined objectives” as one of its Management and Stewardship Objectives (Box 1).⁷

Assessing and reporting on management effectiveness can serve a multitude of purposes. It can help Marine Protected Area site staff prioritize activities, highlight successes, identify gaps and challenges, encourage appropriate resource allocation, capture staff knowledge, and inform adaptive management and management planning.⁸ Transparent reporting on results of management effectiveness can help stakeholders understand the challenges and constraints faced by protected area program staff, and can help build cooperation and support for these initiatives by improving accountability. Repeated assessments provide an opportunity to collect information in a regular, structured way to allow for trends monitoring. Additionally, the evaluation process itself creates an opportunity for program staff to reflect on past performance and encourages experiential learning by planning, acting, reviewing, and adapting.

A comprehensive evaluation of site effectiveness must consider the biophysical, social, and governance aspects of the Marine Protected Area.⁹ The ecosystem monitoring plan/program for the Gully (currently under development) contains indicators, protocols, and strategies for evaluating the biophysical aspects of the Gully (*i.e.*, primarily to address the conservation objectives). However, the social and governance aspects of the site (*i.e.*, which are addressed by the management and stewardship, and research and monitoring objectives) were not considered part of the ecosystem monitoring plan. As such, the framework described here was developed to evaluate these components of management effectiveness for the Gully.

⁷ *Supra* note 1.

⁸ *Supra* note 2; National Oceanic and Atmospheric Administration. 2007. Performance evaluation manual for the National Marine Sanctuary Program. 72 pp. Online materials: http://sanctuaries.noaa.gov/management/pdfs/performancemanual_2007.pdf; Day, J., Hockings, M., and Jones, G. 2003. Measuring effectiveness in marine protected areas - principles and practice. Paper presented at the World Congress on Aquatic Protected Areas, Cairns, August 2002. 16 pp.; Hockings, M., Stolton, S., Leverington, F., Dudley, N., and Courrau, J. 2006. Evaluating Effectiveness: A framework for assessing management effectiveness of protected areas. 2nd Edition. IUCN, Gland, Switzerland and Cambridge, UK. xiv + 105 pp.; Hockings, M., Cook, C.N., Carter, R.W., and James, R. 2009. Accountability, reporting, or management improvement? Development of a state of the parks assessment system in New South Wales, Australia. *Environmental Management*. 43:1013-1025.

⁹ *Supra* note 2; Wilson, R., and Tsang, P., 2007. Generic monitoring indicators for evaluating MPA effectiveness. Report prepared by 2WE Associates Consulting Ltd. for the Oceans Policy and Planning Branch, Fisheries and Oceans Canada, Ottawa ON. 115 pp.

Box 1: Gully Marine Protected Area Management Plan Vision and Objectives

Vision

To protect the marine ecosystem of the Gully Marine Protected Area for future generations by providing effective programs for management, conservation, research, monitoring, and stewardship.

Conservation Objectives

Protect the health and integrity of the Gully ecosystem:

- Protect the natural biodiversity of the Gully
- Protect the physical structure of the Gully and its physical and chemical properties
- Maintain the productivity of the Gully ecosystem

Management and Stewardship Objectives

Establish effective management of the Gully Marine Protected Area :

- Promote collaboration among all users, regulators and other interests
- Involve stakeholders and the general public in the management of the site
- Establish co-operative agreements with responsible regulatory authorities to meet objectives for the site
- Ensure that human activities within the Gully are consistent with Regulations and the conservation objectives
- Monitor and evaluate the design, management, and effectiveness of the site on a regular basis to ensure that it is meeting defined objectives

Promote stewardship activities:

- Increase understanding of the Gully ecosystem among regulators, user groups and the public
- Promote active participation and engagement in management and research

Research and Monitoring Objectives

- Increase our understanding of the Gully and the potential for human impacts on this ecosystem
- Foster collaboration and communication among managers and natural and social scientists
- Provide managers with accurate and timely information on the state of the Gully ecosystem and potential threats to conservation and management objectives

Objectives of the Assessment

- 1) To evaluate the social and governance aspects of Gully management effectiveness, based on commitments laid out in the Gully Marine Protected Area Management Plan and other *Oceans Act* protected area program guidance and policy documents.¹⁰
- 2) To make recommendations for improving Gully Marine Protected Area management performance and for meeting management commitments.

Scope

The assessment, conducted in the spring and summer of 2010, focused on Gully Marine Protected Area management activities in the last three fiscal years, from April 1, 2007 to March 31, 2010. This was done to ensure that findings were relevant to the current state of Gully management. In some cases, data for the entire period since site designation in 2004 was also included for the purpose of examining longer-term trends and patterns.

Methods

Overview of the Evaluation Framework and Questionnaire

The framework developed to evaluate Gully management effectiveness considered 50 indicators, which were designed to address Gully management commitments under the following six categories:

- 1) Stakeholder interactions (17 indicators)
- 2) Education, stewardship and outreach (seven indicators)
- 3) Research, monitoring, and other permitted activities (nine indicators)
- 4) Planning (five indicators)
- 5) Capacity (four indicators)
- 6) Enforcement and compliance (eight indicators)

The framework included a master evaluation form and an Advisory Committee questionnaire. The evaluation form included all 50 indicators (mostly consisting of a question associated with four ranked, multiple choice answers worth zero to three points, as well as several open-ended questions), with space to provide further information, recommendations, and data sources used to answer each question. The evaluation form organized the 50 indicators into six sections, corresponding to the six management categories listed above.

The Advisory Committee questionnaire was developed to allow Committee members to evaluate a subset of the indicators. The questionnaire included 15 questions, corresponding to 12 of the indicators in the 'stakeholder interactions' section, and three indicators in the 'education, stewardship and outreach' section of the evaluation form. The majority of questions in the questionnaire offered four multiple choice answers and space to provide further

¹⁰ *Supra* note 1; *Supra* note 4; *Supra* note 6.

elaboration. Although numerical scores were not associated with the response options for the questions as written in the questionnaire, the corresponding indicators in the evaluation form included point equivalents (zero to three points), just like the other indicators in the evaluation. Several open-ended questions were also included in the questionnaire. While these did not contribute to the scoring component of the assessment, they served to allow Advisory Committee members to provide useful qualitative feedback on various aspects of protected area site management.

Assessment Process

To complete the assessment, a lead evaluator reviewed relevant documents, electronic communications and education and outreach materials, and engaged in interviews and informal discussions with protected area program staff, and staff from other agencies who contribute to management of the Gully. For each indicator, the most appropriate multiple choice response (and associated score) was selected, and additional qualitative information, including recommendations and data sources, was documented on the evaluation form.

Electronic and hard-copy versions of the Advisory Committee questionnaire were distributed to each member of the Advisory Committee. Respondents were asked to provide anonymous answers that reflected the views of the organizations they represented. Committee members were given two months to complete the questionnaire, and 16 of 25 members participated. Once all responses were received, the lead evaluator converted each respondent's selections into the point equivalents. For each question, the average points awarded by all respondents was calculated to determine the score for the corresponding indicator, and any comments and supporting explanations were quoted and included in the space provided for qualitative information on the evaluation form.

Once the evaluation was complete, scores (percentage of total score possible) were calculated for each section and converted to color codes for reporting purposes, as follows:

Colour Code	Management Performance	Score
P	Poor	<50%
A	Adequate	50 – 74%
G	Good	75 – 100%

Findings and Key Recommendations

The following summarizes the findings for each of the six sections of the evaluation in terms of management strengths and weaknesses, and outlines key recommendations to improve Gully MPA management effectiveness.

A Stakeholder Interactions

Protected area program staff used meetings, e-communications, regular mail, and other Fisheries and Oceans Canada-led events and activities to inform Advisory Committee members about the results of research and monitoring, to discuss Gully-related issues, and to encourage input on management activities. At the time of the evaluation, Advisory Committee membership included representatives from most key stakeholder groups such as federal and provincial governments and agencies, the oil and gas industry, the Aboriginal community, the fishing industry, environmental non-government organizations, and academics. However, it was determined that more effort was needed to create opportunities to actively engage Advisory Committee members and other stakeholders (e.g., fish harvesters) in Gully management activities. Advisory Committee meetings were generally not well-attended, and only a fraction of the membership regularly participated in Advisory Committee business. While some regulators, scientists, and industry (fishing, oil and gas) representatives regularly participated, Aboriginal and environmental non-government organizations representatives were less frequent participants in Advisory Committee business.

Overall, Advisory Committee members who submitted responses to the questionnaire were satisfied with Advisory Committee-related meetings and activities. Most respondents were satisfied with the content and frequency of committee meetings, and committee-related interactions with the Department (*i.e.*, Gully Marine Protected Area program staff). All but one respondent indicated that Fisheries and Oceans Canada was doing a ‘good’ or ‘excellent’ job of managing the site, and all respondents agreed that the Advisory Committee is a necessary component of site management. However, many also felt that the Advisory Committee has been only ‘somewhat effective’ in its contribution to management of the site. To explain their concerns for the effectiveness of the Advisory Committee, members noted the top-down nature of the management structure and lack of decision-making power. In terms of their expectations for the Gully, while some respondents expressed expectations that the Marine Protected Area preserve the Gully ecosystem, others expressed their hope that that the Gully will continue to serve as a positive model for Canadian Marine Protected Areas, for the “development of (Canadian) marine management policy”, and “as a template for future coastal zone management endeavours” and “public engagement in marine management”. One respondent further commended Fisheries and Oceans Canada for maintaining a balanced Advisory Committee without special preferences for any particular sector.

Key Recommendations:

- 1) Create more opportunities to engage Advisory Committee members in Gully management activities.
- 2) Create more opportunities to engage other stakeholders who do not currently serve on the Advisory Committee (e.g., fish harvesters) in Gully management activities.

A Education, Stewardship and Outreach

The education, stewardship, and outreach activities and materials generated during the evaluation period were extensive and included presentations, video, and print media directed at

a variety of audiences. Most Advisory Committee members who submitted responses to the questionnaire considered these materials to be of acceptable quality. Further, newspaper and magazine articles that mention the Gully (written since site establishment) have communicated primarily positive messages to the public. However, the Gully Marine Protected Area email account has been neglected, and the Gully website requires updating and revision.

Key Recommendations:

- 1) Protected area program staff should continue to develop and refine education and outreach materials/activities for the Gully.
- 2) The Gully website should be considered an important interface for engaging the public, and efforts should be made to keep the site up-to-date.
- 3) Public inquiries through the Gully email account should be considered an important aspect of public outreach and addressed promptly.

G Research, Monitoring, and Other Permitted Activities

Research and monitoring are critical for adaptive management, and Gully program staff encourages these activities provided they support Management Plan objectives and do not cause excessive, unnecessary, or unjustifiable disturbance, damage, destruction or removal of Gully ecosystem components.

Researchers working in the Gully have regularly published their findings, both in peer-reviewed literature and/or through the Fisheries and Oceans Canada technical documents series. Research findings have also been shared with protected area program staff, stakeholders, and the academic community through presentations at Advisory Committee meetings, other Gully-specific science meetings, and national and international symposia. However, some gaps in ecosystem monitoring coverage exist, and data from certain long-term Gully monitoring programs have not yet been analyzed. A comprehensive ecosystem monitoring plan and implementation program are currently under development, which should help identify monitoring gaps and provide the impetus for data analysis.

There is a well-developed activity approval process in place to screen applications for activities that occur in the Gully and require Ministerial approval. However, processing procedures can vary from one submission to another as protected area program staff endeavour to accommodate applicants and streamline the approval process for repeated activities. As such, there is a need to develop/update policies and guidance to standardize the processing of submissions and determine permissible variations in processing procedures. As well, a recent increase in ecotourism interest in the area has indicated a need to develop guidelines and protocols to control these activities in the site.

Key Recommendations:

- 1) Develop and implement a comprehensive Gully ecosystem monitoring plan/program.
- 2) Develop guidelines and policies to manage ecotourism activities in the Gully.
- 3) Update and standardize the activity approval application submission and evaluation

policies and protocols to ensure a comprehensive and efficient process.

A Planning

The Gully Marine Protected Area Management Plan is published and up-to-date. The plan is scheduled to undergo review and revisions over the next several years.

For each year of the evaluation period, an internal work-planning document was created to guide Gully management activities. On average, 67% of the management commitments listed in the Gully work plan were addressed for each year. This is due in part to the redirection of staff efforts to take advantage of unexpected opportunities to contribute to Gully management (e.g., to facilitate new research, develop and nurture partnerships, etc.), which resulted in delays in the completion of certain work plan commitments. However, protected area program staff should make every effort to accomplish commitments laid out in the work plan, and should update the plan as additional activities arise. Otherwise, a comprehensive understanding of management activities and accomplishments is not possible.

The Gully Marine Protected Area Management Plan identifies monitoring and evaluation of “the design, management, and effectiveness of the Marine Protected Area” as a management objective for the site. This evaluation contributes to the assessment of the social and governance aspects of Gully effectiveness. However, the ecosystem monitoring program, which will evaluate the biophysical aspects of site effectiveness, is currently under development and has yet to be fully implemented. Further, the Management Plan promises annual reports on accomplishments and management priorities, but no such reports have yet been produced. The need to focus management efforts on monitoring and reporting was underscored by several Advisory Committee members who submitted responses to the questionnaire. Several respondents stressed the importance of implementing an ecosystem monitoring plan as a marker of effective site management, and another respondent called for regular reporting on Gully effectiveness to stakeholders and the general public.

Key Recommendations:

- 1) Evaluations of the social, governance, and biophysical aspects of Gully management effectiveness should be conducted as part of a regular management cycle, and the findings should be used to inform Management Plan review and revisions.
- 2) Annual management commitments should be discussed with the Advisory Committee and documented in the Gully work plan, which should be used to guide management activities.
- 3) Annual reports should be produced to document management accomplishments, current research, priorities and challenges for the upcoming year.

A Capacity

In the past, personnel capacity for Gully management has been variable, but generally limited to an average annual contribution of one full-time employee. However, the recent addition of student interns has helped relieve the workload on protected area program staff. A regular

contribution of 1.25 to 1.5 full-time employees to the management of the Gully would help ensure that management commitments are addressed. Although it is beneficial to have a dedicated Departmental staff member serving as primary contact for the site, additional personnel support could come from other Departmental staff, contractors, interns, or volunteers.

Training is considered a priority for Departmental staff, and staff members are provided with regular opportunities to take advantage of training through courses and workshops. For example, staff have received training in a number of subjects important for Marine Protected Area management, including socio-economics for site planning, financial administration, performance measurement, communications and media relations, surveillance and enforcement, and regulatory impact analysis statement training. Staff have also attended international workshops and conferences to learn how counterparts in other countries address Marine Protected Area-related challenges, and to share Gully management experience. Knowledge gaps identified where training would be beneficial include aboriginal relations, conflict resolution, permitting and approvals, program and project management, and training on various legal issues.

A review of the annual Departmental budget for Gully Marine Protected Area operations and maintenance found that for each year of the evaluation period, a significant portion of the funds were used to support the additional personnel (e.g., interns and contractors) needed to adequately address management commitments. While the annual budget was determined to be generally acceptable for regular site operations during the evaluation period, it is important to note that for the entire period, additional 'special project' funds from the *Health of the Oceans Initiative* were distributed to government partners (e.g., Science Branch) to support various Gully-related projects, such as the contribution of science advice for a Gully ecosystem monitoring plan. If the budget for Gully Marine Protected Area Operations and Maintenance is to be used to implement a comprehensive ecosystem monitoring program based on the plan developed from science advice, the current funding level is not adequate.

Inconsistent record keeping and frequent changes in accounting practices made it difficult to track budgetary allocations and spending for the Gully. Improvements in book-keeping are needed.

Effective site management requires the establishment and maintenance of effective collaborative partnerships. Although protected area program staff have enlisted many partners to collaborate on site management activities, effort is needed to renew some of these relationships and take full advantage of potential opportunities.

Key Recommendations:

- 1) Maintain adequate personnel capacity to ensure management commitments are addressed.
- 2) Protected area program staff should continue to engage in relevant training to acquire the core competencies needed to effectively manage the Gully.
- 3) Perform a full cost-accounting of *all* Gully-related operations to determine the true cost of running an offshore protected area and to support requests for additional resources.
- 4) Improve book-keeping methods to track Operations and Maintenance funds allocated to

the Gully.

- 5) Renew and/or formalize collaborative relationships with other government departments, agencies, universities, environmental non-government organizations, and other organizations to take full advantage of available expertise and potential opportunities.

A **Surveillance, Enforcement and Compliance**

A review of the *Oceans Act* and Gully regulations found them to be mostly adequate to support the goals and objectives of the Gully. However, certain terms in the Gully Marine Protected Area Regulations (e.g., ‘disturbance’, ‘vicinity’, ‘natural variation’, ‘living marine organisms’, and ‘habitat’) require definition for operational purposes.

Because the Gully is located beyond the 12 nautical mile territorial sea, international navigation rights cannot be restricted under the Gully Regulations. Mariners must comply with the *Canada Shipping Act* and regulations, and should comply with guidance provided in the Coast Guard’s Annual Notice to Mariners and guidelines set by the International Maritime Organization. Additional control over shipping could be achieved by designating the Gully as a *Particularly Sensitive Sea Area* through the International Maritime Organization.

Like other offshore marine protected areas, surveillance is an ongoing challenge for the Gully, yet Departmental staff and surveillance and enforcement partners use a relatively sophisticated suite of surveillance tools for monitoring the Gully. These include geo-referenced fisheries logbook data, observer reports, aerial surveillance for fishing and pollution, and satellite-based Vessel Monitoring System for fisheries surveillance, and Long Range Identification and Tracking System for shipping surveillance. Protected area program staff should continue to research surveillance opportunities to ensure that the most appropriate, cost-effective tools are used for compliance monitoring.

Time should be invested in developing and maintaining relationships with surveillance, enforcement, and other regulatory partners. Departmental staff should work with these partners as necessary to develop appropriate planning, procedural, and communication mechanisms to ensure adequate surveillance, enforcement, and compliance with Gully Regulations.

An *Oceans Act* component will soon be added to the training program for the Fishery Officer recruits. This presents an opportunity to provide general training on *Oceans Act* Marine Protected Area regulations. Gully-specific training could also be provided for officers based in the Maritimes Region.

Users of the Gully should be encouraged to engage in surveillance and monitoring activities while in the area. While researchers working in the site have conducted surveillance in the past, fish harvesters who frequent the area should also be encouraged to participate. To improve stewardship activities amongst all user groups, information about what to do when violations are observed should be available.

Key Recommendations:

- 1) Develop operational guidance for regulatory terminology to help practitioners interpret

and enforce the Gully Regulations.

- 2) Further evaluate options for ensuring activities occurring in the Gully are conducted in a manner that minimizes ecological risk, such as strengthened activity approval processes.
- 3) Consider applying for *Particularly Sensitive Sea Area* designation under the International Maritime Organization.
- 4) Develop and maintain relationships with surveillance and enforcement partners.
- 5) Continue to research surveillance opportunities to ensure the most appropriate, cost-effective tools are being used, and to ensure available intelligence is accessible to inform decision-making.
- 6) Work with regulatory partners to ensure appropriate planning, procedural, and communication mechanisms are in place to support surveillance, enforcement and compliance.
- 7) Encourage users of the Gully (fish harvesters, researchers, etc.) to engage in surveillance and stewardship activities when they are in the area.

Conclusions

The Gully management effectiveness assessment has helped document staff knowledge, provided a venue for anonymous Advisory Committee feedback, identified strengths and weaknesses of Gully Marine Protected Area management, and provided important recommendations for enhancing Gully management performance. This evaluation will serve as the foundation for the Gully Marine Protected Area Management Plan review, scheduled to occur in the next fiscal year (2012-2013), and will be repeated every five years as part of a regular management cycle. While some of the key recommendations have already been addressed, the findings from the evaluation will continue to guide resource allocation and work planning for Gully management over the next several years.