

GEOG 457
Marine Protected Areas (MPAs)
January 14 – April 8, 2021

Instructor: Charlie Short

Email: cshort@uvic.ca

Office Hours: Thursdays on request 5pm – 6pm | Location: Remote via call or zoom

Class Schedule: Thursdays 6:30pm - 9:20pm | Remote via zoom

<https://uvic.zoom.us/j/83486946602?pwd=NUxOVWlmR3dpc05rTWN4SzVQc1dRdz09>

Meeting ID: 834 8694 6602

Password: 440217

One tap mobile

+16475580588, 83486946602# Canada

+17789072071, 83486946602# Canada

Course Description

This class will focus on many elements inherent in marine protected area (MPA) design, governance, implementation, management, compliance and monitoring. The course will cover foundational topics like ecosystem-based management and key ecological, socio-economic and cultural considerations in the broader field of marine conservation. The practise of marine spatial planning will also be examined in relation to MPAs. There will be a focus on the Canadian context and on temperate MPAs in British Columbia specifically - international examples will also be drawn upon where applicable.

Course Format

Due to public health measures related to COVID-19, this course will be delivered remotely via zoom. The course will be synchronous (i.e., delivered in real time) and will not be recorded. Students are expected to engage in discussions, Q & A's and surveys as facilitated via remote learning platforms.

Course Evaluation

Students will be expected to carry out a variety of exercises including presentations, short papers and participate in online class discussions. There is no required textbook for this class. Selected course readings will be assigned during term.

1. Briefing Note	20	February 11 th , 2021
2. Group Presentations	20	February 25 th – March 25 th 2021
3. Mid-Term Test	15	March 4 th , 2021
4. Final Written Assignment - Proposal	35	April 8 th , 2021
5. Participation	10	
Final	100	

Learning outcomes

At the end of the course, students will:

- Analyze and connect core principles in ecological and coastal zone management theory to practice;
- Critically evaluate MPA theory and management from an applied perspective;
- Be familiar with the variety of MPA applications and why they may differ from place to place;
- Examine the variety of tools and techniques used in the design and management of MPAs and assess their strengths and weaknesses;
- Hone their critical thinking, written and verbal communication skills through course assignments;

Prerequisites: Geog 357 or by permission

Course Schedule	Focused Topics <i>(subject to some change)</i>
Week 1 Jan 14	<ul style="list-style-type: none">• Introduction to Course• Class Roundtable, Group Assignments, Overview of assignments• The Big Picture<ul style="list-style-type: none">○ Marine Ecology 101<ul style="list-style-type: none">▪ What are MPAs? <p>Recommended Readings:</p> <ol style="list-style-type: none">1. Agardy, T. 2018. Justified ambivalence about MPA effectiveness. – ICES Journal of Marine Science, 75: 1183–1185.2. Worm, B, Barbier, E.B., Beaumont, N, Duffy, E.J., Folke, C, Halpern, B.S., and R. Watson. 2006. Impacts of biodiversity loss on ocean ecosystem services. Science, 314: 778-790.3. Halpern et al. 2012. An index to assess the health and benefits of the global ocean. Nature, 488 (7413): 615-20.

Week 2 Jan 21	<ul style="list-style-type: none"> • The Big Picture continued <ul style="list-style-type: none"> ○ Ocean Economy ○ Ocean Users • Marine Ecosystem Based Management / Integrated Resource Management • Marine Spatial Planning – Case Study: <i>Marine Planning Partnership for the North Pacific Coast</i> • Why MPAs? <p>Recommended Readings:</p> <ul style="list-style-type: none"> • Leslie, H and K. McLeod, 2007. Confronting the Challenges of Implementation Marine Ecosystem Based management. <i>Frontiers in Ecology and the Environment</i>, 5(10): 540-548 • Diggon, S., Short, C., Bones, J., Smith, J., Dickinson, M., Wozinack, K., Topelko, K., and K. Pawluk. 2020. The Marine Plan Partnership for the North Pacific Coast – MaPP: A collaborative and co-led marine planning process in British Columbia. <i>Marine Policy</i>, 104065. • Peruse this website: Marine Planning Partnership: www.mappocean.org • Ban, Natalie C., Karin Bodtker, David Nicolson, Carrie Robb, Krista Royle, Charlie Short. 2013. Setting the stage for marine spatial planning: ecological and social data collation and analyses in Canada’s Pacific waters. <i>Marine Policy</i>, 39:11-20
Week 3 Jan 28	<ul style="list-style-type: none"> • Types of MPAs • Different MPAs for Different Contexts • Benefits and challenges of MPAs <ul style="list-style-type: none"> ○ Economic, Social, Cultural, Ecological • MPA Effectiveness and Implications • Overview of MPA management issues and challenge <p>Recommended Readings:</p> <ol style="list-style-type: none"> 1. Agardy, T., Claudet, J., and Day, J. 2016. Dangerous targets revisited: old dangers in new contexts plague marine protected areas. <i>Aquatic Conservation: Marine and Freshwater Ecosystems</i>, 1–15 2. Edgar, G. J., Stuart-Smith, R. D., Willis, T. J., Kininmonth, S., Baker, S. C., Banks, S., Barrett, N. S., et al. 2014. Global conservation outcomes depend on marine protected areas with five key features. <i>Nature</i>, 506: 216–220. 3. Lester and Halpren, (2008). Biological responses in marine no-take reserves versus partially protected areas. <i>Marine Ecology Progress Series</i>, 367: 49-56. 4. White et al., 2013. A comparison of approaches used for economic analysis in marine protected area network planning in California. <i>Ocean & Coastal Management</i>, 74: 77-89.
Week 4 Feb 4	<ul style="list-style-type: none"> • MPA Design – techniques, tools & assessments • MPA Networks <p>Recommended Readings:</p> <ol style="list-style-type: none"> 1. Sala et al., 2002. A general model for Designing Networks of Marine Reserves. <i>Science</i>, 298: 1991-1993. 2. Gleason, et al., 2013. Designing a network of marine protected areas in California: Achievements, costs, lessons learned, and challenges ahead. <i>Ocean and Coastal Management</i>, 74: 90-101. 3. Canada-British Columbia Marine Protected Area Network Strategy. 2014. ISBN: 978-1-100-21129-9.

<p>Week 5 Feb 11</p> <p><i>Briefing Note Due</i></p>	<ul style="list-style-type: none"> • MPA Governance – International Synopsis • MPA Governance in Canada • MPA Governance in British Columbia • Current Challenges <p>Recommended Readings: <i>Executive Summary from IUCN document:</i></p> <ol style="list-style-type: none"> 1. Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Broome, N.P., Phillips, A., 2013. Governance of Protected Areas: From Understanding to Action, in Best Practice Protected Area Guidelines 20. IUCN, Gland. https://www.iucn.org/sites/dev/files/content/documents/governance_of_protected_areas_from_understanding_to_action.pdf.
<p>Week 6 Feb 25</p>	<ul style="list-style-type: none"> • MPAs in BC and Canada (guest lecture possible) <ul style="list-style-type: none"> ○ History, progress and challenges ○ Temperate MPAs ○ Canadian case study <p>Recommended Readings:</p> <ol style="list-style-type: none"> 1. Whitaker, A. 2014. Marine Protected Areas in Canada: A Comparative Law Analysis of the Nova Scotia and British Columbia Experience. <i>Ocean yearbook</i>, 28(1): 245-268 2. Council of the Haida Nation and Her Majesty the Queen in Right of Canada, represented by the Chief Executive Officer of Parks Canada, 2018. Gwaii Haanas Gina 'Waadluxan KilGuhlGa Land-Sea-People Management Plan PDF: R64-464/2018E-PDF ISBN: 978-0-660-27508-6 <p><i>Class Presentations Round 1</i></p>
<p>Week 7 March 4</p> <p><i>Mid-Term Test</i></p>	<p>Mid-Term Test</p>
<p>Week 8 March 11</p>	<ul style="list-style-type: none"> • MPAs and Communities (<i>guest lecture possible</i>) <ul style="list-style-type: none"> ○ Values, perceptions and social impacts of MPAs ○ Indigenous (First Nations) people and MPAs <p>Recommended Readings:</p> <ol style="list-style-type: none"> 1. Ban, N., E. Wilson, and D. Neasloss. 2019. Strong historical and ongoing indigenous marine governance in the northeast Pacific Ocean: a case study of the Kitasoo/Xai'xais First Nation. <i>Ecology and Society</i>, 24(4):10. https://doi.org/10.5751/ES-11091-240410 2. McNeill, A, Clifton, J and E. S. Harvey. 2018. Attitudes to a marine protected area are associated with perceived social impacts. <i>Marine Policy</i>, 94:106-118 <p><i>Class Presentations Round 2</i></p>
<p>Week 9 March 18</p>	<ul style="list-style-type: none"> • MPAs – The Art of Engagement and Process Design <ul style="list-style-type: none"> ○ Who needs to play ball? ○ Critical components to success <p>Recommended Readings:</p> <ol style="list-style-type: none"> 1. Kelly, R., Pecl, G., and A. Fleming. 2017. Social licence in the marine sector: a review of understanding and application. <i>Marine Policy</i>, 81: 21-28 2. Fox et al., 2013. Enabling conditions to support marine protected area network planning: California's Marine Life Protection Act Initiative as a case study. <i>Ocean & Coastal Management</i>, 74: 14-23 <p><i>Class Presentations Round 3</i></p>

Week 10 March 25	<ul style="list-style-type: none"> • Management of MPAs and Challenges <ul style="list-style-type: none"> ○ Role of Education, Awareness, and Capacity Building ○ Compliance and Enforcement <p>Recommended Readings:</p> <ol style="list-style-type: none"> 1. Day, J. 2008. The need and practice of monitoring, evaluating and adapting marine planning and management—lessons from the Great Barrier Reef. <i>Marine Policy</i>, 32: 823–831. 2. Ban, N. C., Kushneryk, K., Falk, J., Vachon, A., and Sleigh, L. 2019. Improving compliance of recreational fishers with Rockfish Conservation Areas: community–academic partnership to achieve and evaluate conservation. – <i>ICES Journal of Marine Science</i>, doi:10.1093/icesjms/fsz134. 3. McCook et al., 2010. Adaptive Management of the Great Barrier Reef: A globally significant demonstration of the benefits of networks of marine reserves. <i>Proceedings of National Academy of Sciences</i>. <p><i>Class Presentations Round 4</i></p>
Week 11 April 1	Final Paper Preparation (your time)
Week 12 April 8	<ul style="list-style-type: none"> • Course Wrap Up and Summary • Applications in the field • Final Evaluation

Undergraduate Grading**

Undergraduate Grading Scale			
Passing Grades	Grade Point Value	Percentage *	Description
A+ A A-	9 8 7	90 – 100 85 – 89 80 – 84	An A+, A, or A- is earned by work which is technically superior, shows mastery of the subject matter, and in the case of an A+ offers original insight and/or goes beyond course expectations. Normally achieved by a minority of students.
B+ B B-	6 5 4	77 – 79 73 – 76 70 – 72	A B+, B, or B- is earned by work that indicates a good comprehension of the course material, a good command of the skills needed to work with the course material, and the student's full engagement with the course requirements and activities. A B+ represents a more complex understanding and/or application of the course material.
C+ C	3 2	65 – 69 60 – 64	A C+ or C is earned by work that indicates an adequate comprehension of the course material and the skills needed to work with the course material and that indicates the student has met the basic requirements for completing assigned work and/or participating in class activities.
D	1	50 – 59	A D is earned by work that indicates minimal command of the course materials and/or minimal participation in class activities that is worthy of course credit toward the degree.
COM	Excluded Grade	N/A	Complete (pass). Used only for 0-unit courses and those credit courses designated by the Senate. Such courses are identified in the course listings.
CTN	Excluded Grade	N/A	Continuing . Denotes the first half of a full-year course.
Failing Grades	Grade Point Value	Percentage *	Description
E	0	0 – 49	Conditional supplemental. Supplemental examinations are not offered by all departments and the allowable percentage may vary by program (e.g. 35-49). Students will be advised whether supplemental will be offered and if the percentage range varies when assessment techniques are announced at the beginning of the course.
F	0	0 – 49	F is earned by work, which after the completion of course requirements, is inadequate and unworthy of course credit towards the degree.
N	0	0 – 49	Did not write examination or complete course requirements by the end of term or session; no supplemental.
N/X	Excluded Grade	N/A	Did not complete course requirements by the end of the term; no supplemental. Used only for Co-op work terms and for courses designated by Senate. Such courses are identified in the course listings. The grade is EXCLUDED from the calculation of all grade point averages.
F/X	Excluded Grade	N/A	Unsatisfactory performance. Completed course requirements; no supplemental. Used only for Co-op work terms and for courses designated by Senate. Such courses are identified in the course listings. The grade is EXCLUDED from the calculation of all grade point averages.

Undergraduate Grading Scale (Continued)			
Temporary Grades	Grade Point Value	Percentage *	Description
INC	N/A	N/A	Incomplete. Used only for those credit courses designated by the Senate, to be replaced with a final grade by June 1 for Winter Session courses and by October 1 for Summer Session courses. Such courses are identified in the course listings.
DEF	N/A	N/A	Deferred status granted. Used only when deferred status has been granted because of illness, an accident or family affliction. See "Deferred Status" (page 50).
INP	N/A	N/A	In Progress. Used only for courses designated by Senate, to be replaced with a final grade by the end of the next Winter Session except for TIED courses (identified in the Calendar). In TIED courses the INP must be replaced with a final grade by the end of the subsequent term (including Summer Session) or, where a COOP Work Term, or other activity approved by the academic unit, intervenes, within eight months. If a student fails to complete the second course of a TIED course sequence, then the final grade will be N.
CIC	N/A	N/A	Co-op Interrupted Course. See "General Regulations: Undergraduate Co-op" (page 64).
Grade Note			Description
AEG	N/A	N/A	Aegrotat. Transcript notation accompanying a letter grade, assigned where documented illness or similar affliction affected the student's performance or prevented completion of all course work.
WE	N/A	N/A	Withdrawal under extenuating circumstances. The WE registration status will replace a course registration or grade when approved by the Dean following a request for academic concession from a student. This registration status is excluded from the calculation of all grade point averages; it will appear on the official transcript.
<p>* The grading scale for the evaluation of course achievement at the University of Victoria is a percentage scale that translates to a 9 point GPA/letter grade system. The 9 point GPA system is the sole basis for the calculation of grade point averages and academic standing. Standardized percentage ranges have been established as the basis for the assignment of letter grades. The percentage grades are displayed on the official and administrative transcripts in order to provide fine grained course assessment which will be useful to students particularly in their application to graduate studies and for external scholarships and funding. Comparative grading information (average grade [mean] for the class), along with the number of students in the class, is displayed for each course section for which percentage grades are assigned.</p>			

** As stated in the 2020-21 UVic Undergraduate Calendar

Geography Departmental web site: uvic.ca/socialsciences/geography

Undergraduate Advising: geogadvising@uvic.ca

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the Centre for Accessible Learning (CAL) as soon as possible. The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations uvic.ca/services/cal/. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

The University of Victoria is committed to promoting, providing and protecting a positive and safe learning and working environment for all its members.

Appendix 1

Course Assignment Instructions

1. Briefing Note

CMM01 – Briefing Note Assignment

Prepare a two-page briefing note on a major report using the format below. The document will be worth 20% of the total course mark and is due by 1830 Thursday, February 11th, 2021 (i.e., prior to class). Use the font style and font size from the format.

Purpose:

The purpose of the assignment is to learn and demonstrate the ability to comprehend a complex document and to communicate critical information and its implications in a clear and concise manner.

The Scenario:

Developing your scenario is very important! Imagine that you are working for an organization involved in oceans and coastal resource management – including MPA establishment and management. This organization can be in the public, private or not-for-profit sectors. For example: a government agency at a specified level, a private enterprise business, an industry or trade association, or a not-for-profit organization such as an environmental advocacy group. You are a lower-level research officer within the organization and have been asked, on very short notice, to read and summarize a large and complex report that will be released the following day, for a senior decision maker in the organization. The person you are writing for could be as high up as the Chairman of the Board, the Chief Executive Officer or your direct boss; you decide. At the appropriate places in the format provided, specify the name of your organization, your name and your imaginary title, and the name and title of the person that it is being prepared for. It's VERY IMPORTANT that you establish your scenario, both on paper in the briefing note, and in your own mind.

Suggested Reports:

Students are free to review a report of interest to them and it should be relevant to the course material - please check with me first.

Five suggested / example reports are below:

1. WWF Comparison of Wild Fisheries Certification Schemes (2012)

[WWF Review of Fisheries Certification Schemes 2012.pdf](#)

2. Ocean Plastic Footprint (IUCN 2020)

<https://portals.iucn.org/library/sites/library/files/documents/2020-001-En.pdf> (Links to an external site.)

3. SeaStates Report on North America's Marine Protected Areas (CPAWS and Marine Conservation Institute 2016)

[CPAWS Dare to be Deep Report Card on MPAs 2016.pdf](#)

4. A Blueprint for Ocean and Coastal Sustainability (UNESCO 2011)

[Blueprint for Oceans and Coastal Sustainability.pdf](#)

5. Ocean deoxygenation: everyone's problem (2019)

<https://portals.iucn.org/library/node/48892>

Hints:

- You probably don't have to read the whole report, that's what Executive Summaries are for, but you should at least browse the whole thing.
- Try to find out some background on the report, look for press releases or reactions at the time that it was released. If you can, dig into the background of the authors a bit.
- "Fly the plane at the right altitude"; you are expected to be the expert, but don't get lost in detail. Only communicate the key information to the senior decision maker in your organization that they need to know. You are reading the report for them.
- This is a real-life assignment that happens all the time in any organization. Have fun.

The required format for the Briefing Note and detailed instructions for completing it are on the next page. Please follow the format and instructions as closely as you can.

Required Format – Please Follow. Note: Briefing documents are limited to 2 pages maximum, 11 pt font size (delete all instructions like this in your final note)

PREPARED FOR: [insert name and title of person from your scenario - who the b/n is being prepared for] (For Example: *Honourable XXX, Minister of XXX* or *XXX, CEO for XXX*)

TITLE: Concise title to reflect the issue (limit number of words to under 10), a busy person should be able to glance at this title among a pile of papers on his desk and know what it is about without having to refer to the whole document.

(For example: “*UN FAO Review of Global Overfishing*”)

PURPOSE: Briefly state (approx. 20-30 words) the reason for the briefing document and why it is important to the reader; tell them why they need to spend their busy time reading it. (For Example: *To brief the CEO on the main contents and findings of the FAO Report on Global Overfishing prior to its release*)

BACKGROUND:

This is the descriptive section. Briefly describe the report under review, who prepared it and why. You might want to do some background research here. Summarize the contents, main findings and conclusions so that the reader will know most of what the report says without having to read it for themselves. This should occupy most of the first page and, possibly, a small portion of the second page, and would be about a half to two thirds of the content of the briefing note. Use indented bullet format for this and remember, facts only here.

☐ Like this.....

ANALYSIS/IMPLICATIONS:

This is the analytical section. Review the implications of the report’s findings for the organization that you are a part of that you have established in your scenario. Analyze the potential impact for your organization and the likely reaction from interested parties of relevance to your organization. In the FAO Report example, if the report is to be released publicly and your organization will be affected by it, what will the report mean to reader and what might they have to do? Some outside research might be helpful here. Write this section in parenthetical style – no bullets.

CONCLUSION/RECOMMENDATIONS:

This is the action section. Provide concluding remarks and recommendations to the person(s) for whom the briefing note is prepared, including any specific actions required by them. If appropriate, you can include suggested speaking points that they can use. This section should be quite short and usually written in bullet or numbered format.

{Insert footnote to denote the author, job title and date}

2. Group Assignments (randomly assigned groups will be determined once class size settles)

- Your group is to present on MPAs in an assigned geography and you will need to research background on:
 - MPA proposals, key policies, strategies, legislation, science; and,
 - Pressures, issues and/or drivers for MPAs in that particular coastal/ocean environment.
- You will also take a deeper dive and choose a case study. This could be a specific MPA, set of MPAs, piece of legislation or policy, etc. You'll need to clearly articulate:
 - Who are the key players;
 - challenges;
 - successes; and,
 - current and future status of topic
- Finally, your group will need to summarize findings and offer some original thought that can lead into a broader class discussion.
- Ensure you corroborate your research and insights with peer reviewed literature and relevant background information – use references!
- You have **20-25 min** per group of four and **25-30 min** per group of five.
- You can use visual aids (i.e., power point, keynote, etc) and will submit the supporting materials as part of the assignment.
 - **MAX 10-12** slides

How you and your group will be evaluated:

- 1. Individual mark assessment: / 4**
- 2. Intro / context / background research / 4**
- 3. Case study analysis / 8**
- 4. Discussion / 4**

Total: / 20

3. Final Paper Proposal

Premise: You have just been given an opportunity to apply for a \$75,000 CAD grant to do a research project on Marine Protected Areas. The grant can be used towards any type of research: social, cultural, institutional/administrative, economic, governance related, legislative reform, biophysical, ecological, applied management and/or operational (see attachment 1 for examples/ideas).

You have two years to complete your work and write up a research report.

To access the grant however, you need to demonstrate that you can carry out such research and utilize the grant funds efficiently and effectively.

You are required to write a research proposal.

The research proposal should outline the following and be no longer than five, double-spaced, pages including a minimum of ten primary sources of literature cited. To save space, endnotes are recommended for references.

RECOMMENDED OUTLINE

1. Research proposal title
2. Key question to be asked “the proposal”
3. Background and literature review
 - a. Why important / context
 - b. Relevant related research
4. Proposed method of data collection and analysis
 - a. How are you going to get the information?
 - b. How are you going to determine the results?
5. Expected results
 - a. Based on similar research – what do you expect?
6. Contribution to field of research / Discussion / Conclusion
 - a. Succinct wrap up with future contributions

Extra (not included in five-page proposal)

7. Any maps, figures or tables that will help in proposal
 - a. Be sure to reference properly (e.g., Figure 1, Table 1, etc)
8. Appendix 1 – proposed budget (\$75K)
 - a. Must itemize your budget requirements over Year 1 and Year 2 (e.g., equipment, travel expenses, contracted support, analysis support)
9. Literature cited
 - a. Use in text endnotes and reference in this format:

Leisher, C., Mangubhai, S., Hess, S., Widodo, H., Soekirman, T., Tjoe, S., Wawiyai, S., Larsen, S.N., Rumetna, L., Halim, A. and M. Sanjayan. 2012. Measuring the benefits and costs of community education and outreach in marine protected areas. *Marine Policy*, 36(issue #): 1005-1011.

Attachment 1 – Some example ideas for proposals

Themes:

Ecological

1. Determining effective ecological design criteria for MPAs
2. Demonstrating ecological benefits of MPAs
3. Are MPAs the most effective species/habitat conservation tool?
4. How effective are temperate MPAs?
5. What types of species/communities benefit most from MPAs?

Socio-cultural

1. Determining the key social / cultural barriers to MPA effectiveness.
2. Experimental MPA planning processes. What works best (i.e., most efficient)?
3. Are community based MPAs effective?
4. What are the indigenous equivalents to MPAs – do these exist and/or is there a difference. How are they managed?
5. Legislative reform for MPAs in Canada? What would this look like and why has Canada been so slow to establish MPAs compared to other countries?

Economics

1. Are MPAs a benefit or a detriment to local economies?
2. Which sectors benefit most from MPAs – why?
3. Do MPAs benefit the fisheries economy?
4. Effective tools to evaluate the economics of MPAs

Administrative

1. What are the most pressing challenges for MPA managers?
2. Effective tools for compliance and enforcement
3. Do voluntary compliance models/approaches work?
4. What are the key ingredients for visitor satisfaction?

Governance

1. A critical review of MPA legislation in Canada
2. How can MPA governance (or law) be more effective?

3. What are the challenges associated with MPA establishment?
4. A critical review of MPA governance – international comparison
5. How to set MPA objectives – international examples & effective process design