

Socio-Ecological Dynamics and Conservation in Southern Patagonia and Antarctica

ENVI-3000(3 credits)

Argentina: People, Environment and Climate Change in Patagonia and Antarctica

This syllabus is representative of a typical semester. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Course Description

This course examines socio-ecological dynamics and conservation in Southern Patagonia and Antarctica, focusing on the interactions between human societies and marine and coastal environments. Students develop an understanding of how historical, cultural, ecological, and institutional factors shape human–environment relationships, with particular attention to Indigenous perspectives, regional history, and contemporary forms of resource use.

The course addresses key issues related to the governance and management of marine resources in Patagonia and Antarctica, including scientific research under the Antarctic Treaty System, Antarctic tourism, marine protected areas, fisheries, and multi-use activities. Emphasis is placed on understanding how state institutions, scientific knowledge, management frameworks, and economic interests interact in decision-making processes, and how different actors participate in the use and conservation of marine resources. These dynamics are examined within the context of fragile polar and subpolar ecosystems and in relation to climate change.

Learning is supported by site visits and field excursions that include classes held in regional museums; visits to Tierra del Fuego National Park to examine ecosystem diversity, resource use, and protected area management; and a multi-day excursion to northern Tierra del Fuego, including the Chilean side of the island, where students explore steppe and coastal environments and engage with a local conservation organization. An expedition to Antarctica further provides opportunities to observe socio-ecological processes in situ and to engage with diverse environmental contexts. Through these combined academic and experiential components, students gain the tools to critically assess socio-ecological systems and reflect on the challenges of sustainable environmental stewardship in Southern Patagonia, Antarctica, and comparable regions.

This course runs concurrently with the Environmental Research Methods and Ethics seminar.

Learning Outcomes

Upon completion of the course, students will be able to:

- Describe historical and social perspectives—including Indigenous worldviews, orientalist narratives, communal and paternalistic approaches—that have shaped human relationships with marine and coastal environments in Southern Patagonia and Antarctica;
- Compare and contrast conservation theories, governance frameworks, and management practices applied in Southern Patagonia and Antarctica, examining how different conceptualizations of nature and resource use inform these approaches;
- Analyze the complexity of decision-making processes related to marine resource use and conservation, including the roles of state institutions, scientific knowledge, economic interests, and local actors at local, national, and international scales;
- Evaluate how climate change interacts with human activities, environmental perceptions, and governance systems to influence conservation strategies and socio-ecological dynamics in marine and coastal environments.

Language of Instruction

This course is taught in Spanish. Students will be exposed to vocabulary related to course content through in-country expert lectures and field visits to a wide range of venues and regional locales.

Instructional Methods

SIT's teaching and learning philosophy is grounded in the experiential learning theory developed by Kolb (1984; 2015) and informed by various scholars, such as Dewey, Piaget, Lewin, among others. Experiential learning theory recognizes that learning is an active process that is not confined to the formal curriculum; "knowledge is created through the transformation of experience" (Kolb, 2015, p. 49). Learning involves both content and process. Learning is holistic and happens through various life experiences upon which students draw to generate new ways of knowing and being. Learning involves a community and is a lifelong endeavor. Learning is transformational. The suggested four step-cycle of a concrete experience, reflective observation, abstract conceptualization, and active experimentation embedded in the experiential learning model is not linear and might not always happen in that specific order, as any learning is highly context dependent. These stages of taking part in a shared experience; reflecting on that experience by describing and interpreting it; challenging their own assumptions and beliefs to generate new knowledge; and ultimately applying new knowledge, awareness, skills, and attitudes in a variety of situations and contexts are important for students to engage in to become empowered lifelong learners.

Assignments and Evaluation

Assignment Descriptions and Grading Criteria

1) Weekly Assignments (35%)

Weekly assignments are short written activities designed to integrate and reinforce the content of each module. These assignments assess students' understanding of key concepts, promote reflection on course material, and support continuous engagement with themes related to climate change, biodiversity, and marine and coastal systems throughout the course.

2) Trip Topics Presentation (20%)

During the Antarctica expedition, each student is required to complete a short Trip Topic oral presentation. Trip Topics focus on either a historical figure relevant to Antarctic exploration or a scientific research station, and are assigned by SIT staff prior to the expedition. Presentations are approximately five minutes in length and should include relevant historical, scientific, and contextual background, highlighting the significance of the selected topic within the Antarctic region. Students are expected to prepare their presentations using course materials, lectures, and field-based observations, and to document all supporting information—including notes, drawings, diagrams, maps, or graphs—in their field notebook as part of the preparation process.

3) Group Discussion (30%)

As an integrative assignment, students will participate in a structured group discussion focused on the relationships between science, society, and climate change. Drawing on course lectures, readings, excursions, and field experiences, students will critically examine socio-environmental dynamics in Southern Patagonia and Antarctica, with particular attention to scientific practices, resource use, conservation, and climate change as a global challenge. The goal is not to reach a single or "correct" conclusion, but to demonstrate critical thinking, synthesis of course content, and the ability to articulate informed perspectives on complex socio-ecological issues.

4) Participation (5%)

Participation is assessed based on students' preparation, attendance, and attitude in all lectures, discussions, and excursions. Students are expected to actively contribute to periodic group meetings and to complete all assigned written work in a timely manner. Evaluation also includes culturally respectful behavior, flexibility, punctuality, and enthusiasm, as well as constructive engagement with peers and instructors, in order to support a collaborative learning environment.

5) General Performance (10%)

General performance is evaluated through a combined assessment of the student's learning achievement, the overall quality, rigor, and consistency of the work produced for the course, and the level of effort demonstrated throughout the term. This includes the student's ability to apply course concepts, engage critically with course materials, meet academic standards, and show sustained commitment to coursework and field-based activities.

Assessment

Weekly Assignments 35% (17.5% each)

Trip Topics Presentation 20%

Group Discussion 30%

Participation 5%

General Performance 10%

Attendance and Participation

Due to the nature of SIT Study Abroad programs, and the importance of student and instructor contributions in each and every class session, attendance at all classes and for all program excursions is required. Criteria for evaluation of student performance include attendance and participation in program activities. Students must fully participate in all program components and courses. Students may not voluntarily opt out of required program activities. Valid reasons for absence – such as illness – must be discussed with the academic director or other designated staff person. Absences impact academic performance, may impact grades, and could result in dismissal from the program.

Late Assignments

SIT Study Abroad programs integrate traditional classroom lectures and discussion with field-based experiences, site visits and debriefs. The curriculum is designed to build on itself and progress to the culmination (projects, ISP, case studies, internship, etc.). It is critical that students complete assignments in a timely manner to continue to benefit from the sequences in assignments, reflections and experiences throughout the program.

Example: Students may request a justified extension for one assignment during the semester. Requests must be made in writing and at least 12 hours before the posted due date and time. If reason for request is accepted, an extension of up to one week may be granted at that time. Any further requests for extensions will not be granted. Students who fail to submit the assignment within the extension period will receive an 'F' for the assignment.

Grading Scale

94-100%	A
90-93%	A-
87-89%	B+
84-86%	B
80-83%	B-
77-79%	C+
74-76%	C
70-73%	C-
67-69%	D+
64-66%	D
below 64	F

Program Expectations

SIT Study Abroad programs integrate traditional classroom lectures and discussion with field-based experiences, site visits and debriefs. The curriculum is designed to build on itself and

progress to the culmination (projects, ISP, case studies, internship, etc.). It is critical that students complete assignments in a timely manner to continue to benefit from the sequences in assignments, reflections and experiences throughout the program.

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SIT Policies and Resources

Please refer to the [SIT Study Abroad Handbook](#) and the [Policies](#) section of the SIT website for all academic and student affairs policies. Students are accountable for complying with all published policies. Of particular relevance to this course are the policies regarding: academic integrity, Family Educational Rights and Privacy Act (FERPA), research and ethics in field study and internships, late assignments, academic status, academic appeals, diversity and disability, sexual harassment and misconduct, and the student code of conduct.

Please refer to the SIT Study Abroad Handbook and SIT website for information on important resources and services provided through our central administration in Vermont, such as [Library resources and research support](#), [Accessibility Services](#), [Counseling Services](#), [Title IX information](#), and [Equity, Diversity, and Inclusion](#) resources.

Course Schedule

**Please be aware that topics and excursions may vary to take advantage of any emerging events, to accommodate changes in our lecturers' availability, and to respect any changes that would affect student safety. Students will be notified if this occurs*

The following modules occur between week 4 and 8 of program time in Ushuaia, Tierra del Fuego and on excursions and site visits.

Module 1: Human Relations to their Environment Historically

This module introduces students to historical and anthropological perspectives on human–environment relationships in Southern Patagonia. Students examine native populations and their relationships with nature, with particular attention to food systems, symbolic representations, and territorial practices. The module also addresses regional history through the study of early explorers and the processes of encounter, colonization, and settlement in Tierra del Fuego. Through lectures, discussions, and visits to regional museums, students analyze how different historical actors understood, used, and represented marine and coastal environments, and how these perspectives have shaped contemporary socio-environmental dynamics. Emphasis is placed on recognizing the diversity of worldviews and the long-term implications of historical relationships between humans and nature.

Session 1: Native populations and nature
Session 2: Regional history and early explorers
Session 3: Regional history and native populations

Required Readings:

Carman, M., & González Carman, V. (2016). La fragilidad de las especies: tensiones entre biólogos y pescadores artesanales en torno a la conservación marina. *Etnográfica. Revista do Centro em Rede de Investigação em Antropologia*, 20(2), 411-438.

Pálsson, G. (2001). Relaciones humano-ambientales. Orientalismo, paternalismo y comunalismo. *Naturaleza y sociedad: perspectivas antropológicas*, 80-100.

Suggested Readings:

Luiz, M. T., & Schillat, M. (1998). Tierra del Fuego: Materiales para el estudio de la historia regional. Ushuaia: Editorial Fuegia.

Ministerio de Educación y Deportes de la Nación. (2016). Tehuelches y Selk'nam (Santa Cruz y Tierra del Fuego): no desaparecimos. Ciudad Autónoma de Buenos Aires: Ministerio de Educación y Deportes. (Pueblos indígenas en la Argentina; 12).

Oría, J., & Tivoli, A. M. (Eds.). (2014). Cazadores de mar y tierra: Estudios recientes en arqueología fueguina. Ushuaia: Viento de Hojas; Editora Cultural Tierra del Fuego.

Orquera, L., Piana, E. L., Fiore, D., & Zangrando, A. F. (2012). Diez mil años de fuegos: Arqueología y etnografía del Fin del Mundo. Buenos Aires: Dunken.

Tivoli, A. M. (Dir.). (2022). Pueblos originarios del Onashaga: Pasado, presente y futuro. Ushuaia: Angélica Montserrat Tivoli; Centro Austral de Investigaciones Científicas (CADIC-CONICET); Administración de Parques Nacionales; Consejo Federal de Ciencia y Tecnología (COFECyT).

Module 2: Current Uses of Marine Resources and Conservation Efforts

This module focuses on current uses of marine resources in Southern Patagonia and Antarctica, with an emphasis on the governance, scientific research, tourism, and multi-use activities. Students explore how marine environments are accessed, managed, and regulated, particularly in the unique Antarctic context under the Antarctic Treaty System.

Key topics include scientific research in Antarctica, Antarctic tourism, the establishment and management of marine protected areas, and recreational activities in marine and coastal environments. Students examine how different uses of marine resources coexist, the actors involved in decision-making processes, and the challenges of balancing economic activities with conservation objectives.

Session 4: The Antarctic Treaty System and science in Antarctica
Session 5: Antarctic tourism
Session 6: Marine Protected Areas in Antarctica
Session 7: Recreational activities and multi-use of marine environments

Required Readings:

Sylvester, Z. T., & Brooks, C. M. (2020). Protecting Antarctica through co-production of actionable science: Lessons from the CCAMLR marine protected area process. *Marine Policy*, 111, 103720.

Gardiner, N. B., Liggett, D., Gilbert, N., & Cvitanovic, C. (2025). Practitioners' perspectives on the enablers and barriers to successful Antarctic science-policy knowledge exchange. *Environmental Policy and Governance*, 35(2), 362-381.

Suggested Readings:

Gardiner, N. B., Gilbert, N., Liggett, D., & Bode, M. (2025). Measuring the performance of Antarctic Treaty decision-making. *Conservation Biology*, 39(1), e14349.

Schillat, M., Jensen, M., Vereda, M., Sánchez, R. A., & Roura, R. (Eds.). (2016). *Tourism in Antarctica: A multidisciplinary view of new activities carried out on the white continent* (pp. 75–99). Cham: Springer.

Schwarz, S. (2017). Geoturismo en el paisaje estepario de Tierra del Fuego (Argentina): repensando su atraktividad. *PASOS. Revista de Turismo y Patrimonio Cultural*, 15(1), 105–119.

Schwarz, S., & Coronato, A. (2018). Valoración de recursos paisajísticos: estudio de percepción en Tierra del Fuego (Argentina). *Aportes y Transferencias*, 16(2), 29–44.

Secretaría del Tratado Antártico. (2021). *Compilación de documentos fundamentales del Sistema del Tratado Antártico* (5th ed.). Buenos Aires: Secretaría del Tratado Antártico.

Sylvester, Z. T., & Brooks, C. M. (2020). Protecting Antarctica through co-production of actionable science: Lessons from the CCAMLR marine protected area process. *Marine Policy*, 111, 103720.

Module 3: Current Uses of Resources and Conservation in Southern Patagonia and Antarctica

This module examines marine resource use and conservation from a socio-ecological perspective, with a particular focus on fisheries and climate change. Students analyze historical and contemporary fisheries, the structure of fishing activities, and the roles of different actors involved in resource use and management.

The module also addresses how climate change affects marine resources and fisheries, and how diverse perspectives—scientific, economic, and experiential—contribute to understanding and managing these challenges. Guest lectures and discussions provide students with insights into different approaches to resource use, conservation, and sustainability in Southern Patagonia and Antarctica.

Session 8: Fisheries: historical and contemporary perspectives

Session 9: Fisheries and climate change

Session 10: Perspectives on resource use: artisanal fishers voices

Session 11: Perspectives on resource use: economy and public policy approaches

Required Readings:

Lovrich, G. A., & Tapella, F. (2016). Estado poblacional de la centolla *Lithodes santolla* en el Canal Beagle. Informe técnico, Convenio CONICET–UNTDF (Res. 361/15), Clúster de Pesca Artesanal Tierra del Fuego.

Suggested Readings:

Diez, M. J., Cabreira, A. G., Madirolas, A. O., & Lovrich, G. A. (2015). Hydroacoustical evidence of the expansion of pelagic swarms of *Munida gregaria* (Decapoda, Munididae) in the Beagle Channel and the Argentine Patagonian Shelf, and its relationship with habitat features. *Polar Biology*, 38(2), 217–228.

Gómez, L., Bitar, S., et al. (2022). Aportes a la discusión sobre la matriz productiva fueguina: Mapa de la gobernanza de los recursos naturales en Tierra del Fuego. *Revista Desarrollo, Estado y Espacio*, 1(2). <https://doi.org/10.14409/dee.2022.1.e0012>

Pascual, M. S., Castaños, C., Reussi, A. M., Elvira, M., Fernández-Cartes, V., & Rodríguez, V. (2002). Diagnóstico de la pesca artesanal en Río Grande: Variables sociales, económicas y técnicas vinculadas a su ordenamiento y potenciación. Consejo Federal de Inversiones.

Thermes, S., Van Anrooy, R., Gudmundsson, A., & Davy, D. (2023). Classification and definition of fishing vessel types (2nd ed.). FAO Fisheries and Aquaculture Technical Paper No. 267. Rome: FAO. <https://doi.org/10.4060/cc7468en>

Valle, J., Romano, S., & Kataishi, R. (2017). El clúster de pesca artesanal en Tierra del Fuego: Diagnóstico y desafíos futuros. *Ciencia & Trópico*, 11(2), 61–78.