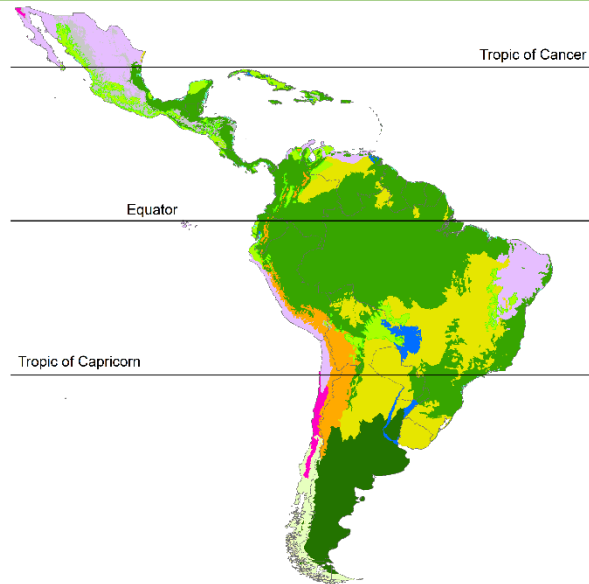


GEOG 239 / LATI 239 / ENVI 294: NEOTROPICAL LANDSCAPES



Ecoregions of the Latin America and the Caribbean (WWF)

Spring 2024

Hello and welcome!

I'm Dr. Xavier Haro-Carrión (he / him; you can call me Xavier if you wish), your course instructor, who is eager to help you understand some fundamental knowledge of Neotropical Landscapes!

Email me at xharocar@macalester.edu
Visit me in **CARN 104F**

Your TA will be Elizabeth Trevathan.
Email her at etrevath@macalester.edu.

Course learning outcomes

- Apply geographic and ecological concepts to evaluate the distinctiveness of Neotropical biomes and ecoregions, exploring both natural and human influences on these landscapes.
- Examine environmental threats impacting these landscapes and interventions (or the lack of) aimed at mitigating them.
- Construct and apply an interdisciplinary framework to the analyzes of landscapes incorporating biophysical, social, and environmental components.

Prerequisites

A lot of enthusiasm!

Course Description

Neotropical ecosystems offer a range of services, both locally and globally, including water sources, climate mitigation, and biodiversity conservation. They are also home to various human groups and support the livelihood of local and global human populations. This course provides students a basic understanding of the most important biophysical and social characteristics of the dominant landscapes within the Neotropical biogeographic region. Among others, these landscapes include the tropical rain forests of the Amazon, the montane forests and páramos of the Andes, and the temperate forests of Patagonia. For each of these landscapes, we learn about key ecological processes that govern their functioning. We also study the people living in them—indigenous communities, afro-descendants, and mestizo populations—and how they interact with the environment. Finally, using examples of these areas, we analyze human-environment processes including land-use change, biodiversity and/or cultural conservation, and climate change impacts and responses.

Meeting times and office hours

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08:30-09:30		In CARN 109			
09:30-10:30					
10:50-11:50					
2:00 - 4:00					
4:00 - 5:00					

	Class times
	Instructor Office hours
	TA Office hours (second floor of library, Idea Lab)

Textbook

This class has no required textbooks. The following books are valuable sources of information for the topics that will be covered (all available in my office). Copies of chapters will be provided for a limited time. Additional sources, such as peer-reviewed papers, news articles, podcasts, are outlined in the “Detailed Weekly Schedule” section of this syllabus and will be accessible in Moodle.

Kricher, J. C. (2011). *Tropical Ecology*. Princeton University Press.

Kricher, J. C. (2017). *The New Neotropical Companion*. Princeton University Press.

Kronik, J., & Verner, D. (2010). *Indigenous Peoples and Climate change in Latin America and the Caribbean*. World Bank.

Wilson, D. J. (1999). *Indigenous South Americans of the past and present: An ecological perspective*. Westview Press.

Course Details

Structure

Throughout the semester, I will employ diverse teaching approaches. Some classes will adopt a "flipped-classroom model," requiring students to engage with the material before class, allowing for more in-depth exploration during our sessions. In certain instances, a "blended-learning model" will be utilized, combining pre-provided material with in-class lectures. Traditional lecture-style delivery will be employed in some classes, while others will focus entirely on discussion. As the semester progresses, I encourage you to provide feedback on the teaching techniques you find most beneficial and engaging!

Class Activities

Nearly every class will feature a related activity, such as exit tickets, opening questions, summaries of previous class, paper discussions, and more. These activities have multiple functions: they ensure consistent review of class content, promote class engagement, foster a sense of community, and maintain the cohesion and commitment of our group. As these activities will be conducted almost daily, they will also contribute to tracking attendance. Generally, these activities are not subjected to make-up opportunities (but refer to Attendance policies below for exceptions). I acknowledge that unavoidable circumstances may occasionally hinder your attendance and full participation. To accommodate such situations, the lowest grades of class activities will be disregarded and will not factor into the final calculation of your Class Activities grade.

Exams

Two cumulative exams will be part of this course. One will be scheduled approximately midway through the semester, and the other will take place toward the end of the semester. These exams will encompass short-answer questions, brief essays, map interpretations and applied problem-solving questions. The purpose is to evaluate your knowledge and develop soft skills, such as the ability to work under time-limited and potentially stressful scenarios. People respond differently to these circumstances, and I am open to considering options to make the exam-taking experience as comfortable as possible, including scheduling exams outside of class in the Max Center or adjusting proposed exam dates to better accommodate other academic commitments.

Short essays

You will compose two concise essays, each comprising around four to five paragraphs or approximately 800 to 1,000 words each. Aligned with our completion of major units centered on specific landscapes, these essays will adhere to a structured format. This includes presenting a thesis statement, reinforcing your arguments through robust analysis, and concluding with insightful perspectives. The essay topics will encompass various aspects of the studied landscapes ranging from human impacts, forest conservation, climate change, to socio-environmental issues. Guidance and specific instructions will be provided throughout the semester.

Podcast

You will do a podcast in this class, which will account for a large percentage of your final grade. You will pick the general topic for your podcast based on the various landscapes of the Neotropics studied in class, but you will narrow it down to a specific case study--a region, country, national park(s), biosphere reserve--in other words, a “smaller landscape” than the ones discussed in class that will allow us to explore the topics learned in more detail. We will work during the course of the semester to define your topic and work on this assignment and we will be supported by the Digital Resource Center (DRC) at Macalester.

Here are some sources you will likely use during the entire semester that you should start exploring as soon as you can. How to [Listen to a Podcast for Class](#) provides some good tips on how to approach podcasts as a source of information in class. We'll have at least one podcast as bibliographic material, so be prepared!

[Mac Digital](#) is the general webpage of the Digital Liberal Arts (DLA) at Macalester, and [Podcasting](#) talks specifically about podcasts and lists all the resources that you'll have available at Macalester to do your podcast.

We will also do a short exercise to help prepare you to do your podcast. While probably time consuming, my intention is for this activity to be a fun learning experience.

Course policies and support

Resources

All course materials, including lecture slides, readings and book chapters, will be accessible on Moodle. We will utilize Moodle for submitting assignments that fall outside our regular class schedule, as well as for grade tracking purposes.

Artificial Intelligence (AI)

In this course, the use of Artificial Intelligence (AI) is permitted with certain guidelines. AI can be employed as a starting point for research and to simplify complex ideas, but it must be used cautiously. It is acceptable for checking grammar and proofreading, as long as the content reflects the student's own ideas and effort. AI can aid in understanding intricate readings and serve as a translation tool to facilitate comprehension and communication in English. However, students are prohibited from using AI to generate entire papers or assignments, and any information sourced from AI should be validated from reputable sources.

Attendance

You're warmly invited and encouraged to attend all classes, as attendance is key to our learning journey. Your participation in in-class activities is essential, and these are generally unalterable. Yet, exceptions for academic/sports commitments, illness, or special circumstances can be considered. If religious observances create conflicts, kindly reach out within the first two weeks of class for possible solutions. Your engagement enriches our shared experience!

Late Assignments

Late assignments will be accepted, but there will be a 10% reduction in the final grade for each 24-hour period they are overdue. If you encounter any difficulties that might necessitate adjustments to this policy, please feel free to discuss them with me.

Office Hours

I will maintain regular office hours to delve into any questions, issues or concerns about the course or your experience as first-year students. If your schedule clashes with the posted office hours, we can coordinate an alternative meeting time. Beyond the designated office hours, feel free to contact me via email. I strive to respond promptly, mostly during work hours (8:00 am to 4:00 pm on weekdays).

Diversity

I recognize that the scientific content in this course has historically been shaped by a limited subset of privileged perspectives, potentially leading to both overt and covert biases. To achieve a more comprehensive understanding of science, I am committed to actively diversifying the range of voices and experiences integrated into the curriculum. Beyond course materials, I am dedicated to cultivating an inclusive learning environment that respects your unique identities, encompassing factors like race, gender, class, nationality, and religion. Your feedback is essential in this endeavor. Please don't hesitate to share suggestions for enriching course materials, promoting diversity, and enhancing inclusivity, either through direct communication or anonymous feedback.

Disabilities

I am dedicated to providing all students, including those with disabilities, equal access to course content. If you are facing obstacles that we can address, please let me know. I'm eager to collaborate with you to ensure your success in the course.

For students with documented disabilities, reasonable accommodations are available. To discuss your individual needs, please reach out to the Disability Services office via email at disabilityservices@macalester.edu or by calling 651-696-6874 to schedule an appointment to discuss your individual needs.

Well-Being

At Macalester, valuing your well-being is paramount. By dedicating time to self-care, you'll enrich your academic experience. Remember, you're more than a student – you carry your own experiences, emotions, and identities. Acknowledge any stressors you face, whether mental, emotional, physical, or financial, and understand their potential academic impact. Recognize your body's needs. During class, stay hydrated, take breaks as needed, and prioritize emotional well-being. Beyond class, prioritize sleep, movement, and connections with peers to foster resilience at Macalester. If well-being challenges arise, feel free to contact me or explore support resources [here](#).

Academic Support

You can access personalized tutoring, academic support, and study skills assistance through [Macalester Academic Excellence \(MAX\)](#). These resources are designed to aid you, and I strongly urge you to utilize them.

Academic Integrity

Students are required to independently complete and submit their own work, adhering to established academic conventions for appropriately using and citing external materials and ideas. Participating in cheating or plagiarism will lead to a failing grade for the course. Further details about Macalester's academic integrity can be accessed [here](#). I recommend thoroughly reviewing this information.

Public Health

If you do not feel well, please do not come to class. When we're on campus for class, we will be following the [Mac Stays Safer Community Commitment](#).

Title IX

Macalester prioritizes a secure and inclusive environment for all. Those experiencing sexual harassment, violence, or stalking are encouraged to seek help. As faculty, I must report such disclosures to the Title IX Office to ensure support. Rest assured, your privacy is respected, and the report is confidential. You can contact Macalester's Title IX Coordinator directly at titleixordinator@macalester.edu.

Grading

Assignment	Points
Class Activities	20% (averaged)
Short essays	20% (averaged)
Podcast	30%
Exam I	15%
Exam II	15%

Scale Letter	Range
A	93.0% to 100 %
A-	90.0% to < 93.0 %
B+	87.0% to < 90.0 %
B	83.0% to < 87.0 %
B-	80.0% to < 83.0 %
C+	77.0% to < 80.0 %
C	73.0% to < 77.0 %
C-	70.0% to < 73.0 %

D+	67.0% to < 70.0 %
D	63.0% to < 67.0 %
D-	60.0% to < 63.0 %
F	0.0% to < 60.0 %

Detailed Weekly Schedule

Disclaimer: This schedule represents my current plan and objectives. Details about pre-class assignments, readings and specific dates might be added / adjusted as we progress in the semester with the goal of enhancing your learning experience.

Week 1: Welcome

January 19

Learning outcome. This week, we'll outline the scope of the course.

- **Friday.** Come to class having read the following:
Haro-Carrión, X. 2024. Neotropical Landscapes Syllabus Spring 2024

Week 2: Key Concepts

January 22, 24 and 25

Learning outcome. We'll study what's a landscape, what are the Neotropics and learn key ecological and social concepts for studying landscapes.

This week:

We'll study what's a landscape and what are the Neotropics.

- **Monday.** Come to class having read the following:
Society, N. G. (2011, January 21). Landscape. National Geographic Society.
<http://www.nationalgeographic.org/encyclopedia/landscape/>
David M., Eric Dinerstein, Eric D. Wikramanayake, Neil D. Burgess, George V. N. Powell, Emma C. Underwood, Jennifer A. D'amico, et al. "Terrestrial Ecoregions of the World: A New Map of Life on Earth." *BioScience* 51, no. 11 (2001): 933.
[https://doi.org/10.1641/0006-3568\(2001\)051\[0933:TEOTWA\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2001)051[0933:TEOTWA]2.0.CO;2).
- **Wednesday.** Come to class having read the following:
Kricher, J. C. (2017). Chapter I: Welcome to the Torrid Zone. In: The new neotropical companion. Princeton University Press
Kricher, J. C. (2017). Chapter II: Why is it hot, humid, and rainy in the Tropics. In: The new neotropical companion. Princeton University Press
Butler, R. A. (2020).
- **Friday.** Come to class having read the following:
Antonelli, A., & Sanmartín, I. (2011). Why are there so many plant species in the Neotropics? *TAXON*, 60(2), 403–414. <https://doi.org/10.1002/tax.602010>

Week 3: Tropical Rainforest – The Amazon

January 29, 31 and February 2

Learning outcome. We'll start of exploration of Neotropical landscapes with the Amazon, one of the world's last strongholds for uncontacted indigenous communities.

This week.

- **Monday.** Come to class having read the following:

The Amazon Rainforest. Mongabay. Retrieved from <https://rainforests.mongabay.com/amazon/>

- **Wednesday.** Come to class having read the following:

Povos Indígenas no Brasil. (n.d.). Mebêngôkre (Kayapó)—Indigenous Peoples in Brazil Retrieved August 26, 2021, from

[https://pib.socioambiental.org/en/Povo:Meb%C3%Ang%C3%B4kre_\(Kayap%C3%B3\)](https://pib.socioambiental.org/en/Povo:Meb%C3%Ang%C3%B4kre_(Kayap%C3%B3))

Wilson, D. J. (1999). Chapter VI: Amazonian Villages and Chiefdoms. In: Indigenous South Americans of the past and present: An ecological perspective. Westview Press.

- **Friday.** Come to class having read and listed to the following:

Science Magazine Podcast. (2023, January 5). A controversial dam in the Amazon unites Indigenous people and scientists, and transplanting mitochondria to treat rare diseases. <https://open.spotify.com/episode/50Upru4WRjdu55eb4VjnhA?si=f8d4b44f06cf478c> (Listen up to min 13)

He, Y., Baldiviezo, J. P., Agrawal, A., Candaguira, V., & Perfecto. (n.d.). *Guardians of the Forests: How should an indigenous community in eastern Bolivia defend their land and forests?* Gala. Retrieved January 11, 2023, from <https://www.learnkala.com/cases/bolivia-forests>

Gatti, Luciana V., Camilla L. Cunha, Luciano Marani, Henrique L. G. Cassol, Cassiano Gustavo Messias, Egidio Arai, A. Scott Denning, et al. "Increased Amazon Carbon Emissions Mainly from Decline in Law Enforcement." *Nature*, August 23, 2023. <https://doi.org/10.1038/s41586-023-06390-0>.

Week 4: Tropical Rainforests - Beyond the Amazon

February 5, 7, and 9

This week. Tropical rainforests also encompass other landscapes, such as the Atlantic Forest and more. We'll study some of them this week.

- **Monday.** Come to class having read the following:

Fagua, J. C., & Ramsey, R. D. (2019). Geospatial modeling of land cover change in the Chocó Darien global ecoregion of South America; One of most biodiverse and rainy areas in the world. PLOS ONE, 14(2), e0211324. <https://doi.org/10.1371/journal.pone.0211324>

Chapter 3. Central America and the Caribbean: Island and Isthmus Deforestation. In *Tropical Forests*, 33–50. Columbia University Press, 2005. <https://doi.org/10.7312/rude13194-005>.

- **Wednesday.** Come to class having read the following:

de Rezende, C. L., Uezu, A., Scarano, F. R., & Araujo, D. S. D. (2015). Atlantic Forest spontaneous regeneration at landscape scale. *Biodiversity and Conservation*, 24(9), 2255–2272. <https://doi.org/10.1007/s10531-015-0980-y>

- **Friday.** Come to class having read the following:

Invited speaker: Megan Butler, Macalester College

Week 5: Montane Forests, Páramo and Puna

February 12, 14, and 16

Learning outcome: Altitude can profoundly impact landscapes! This week, we'll learn about mountain landscapes and their inhabitants.

This week.

- **Monday.** Come to class having read the following:

Kricher, J. C. (2017). Chapter XIII: Scaling the Andes. In: *The new neotropical companion*. Princeton University Press.

Evans, M. (2020, October 26). Cloud forests: Narrow bands of biodiversity filled with mist, fog and mystery. *Landscape News*.

<https://news.globallandscapesforum.org/47924/cloud-forests-narrow-bands-of-biodiversity-filled-with-mist-fog-and-mystery/>

- **Wednesday.** Come to class having read the following:

Wilson, D. J. (1999). Chapter VII: Contemporary Central Andean Villages. In: *Indigenous South Americans of the past and present: An ecological perspective*. Westview Press.

- **Friday.** Come to class having read the following:

Buytaert, Wouter, Vicente Iñiguez, and Bert De Bièvre. "The Effects of Afforestation and Cultivation on Water Yield in the Andean Páramo." *Forest Ecology and Management* 251, no. 1–2 (October 2007): 22–30. <https://doi.org/10.1016/j.foreco.2007.06.035>.

Pineda, Eduardo, Claudia Moreno, Federico Escobar, and Gonzalo Halffter. "Frog, Bat, and Dung Beetle Diversity in the Cloud Forest and Coffee Agroecosystems of Veracruz, Mexico." *Conservation Biology* 19, no. 2 (April 2005): 400–410.

<https://doi.org/10.1111/j.1523-1739.2005.00531.x>.

Week 6: Wetlands (or wet savannas) and Mangroves

February 19, 21, and 23

Learning outcome: This week we'll cover two landscapes in which water plays a critical role, wetlands and mangroves.

This week.

- **Monday.** Come to class having read the following:

Schulz, C., Whitney, B. S., Rossetto, O. C., Neves, D. M., Crabb, L., de Oliveira, E. C., Terra Lima, P. L., Afzal, M., Laing, A. F., de Souza Fernandes, L. C., da Silva, C. A., Steinke, V. A., Torres Steinke, E., & Saito, C. H. (2019). Physical, ecological and human dimensions of environmental change in Brazil's Pantanal wetland: Synthesis and research agenda. *Science of The Total Environment*, 687, 1011–1027. <https://doi.org/10.1016/j.scitotenv.2019.06.023>

Oliphant, E., Broda, A., & Simon. (n.d.). Rural Electrification: Which infrastructure is best for the Brazilian Pantanal? Gala. Retrieved January 11, 2023, from <https://www.learnkala.com/cases/rural-electrification>

- **Wednesday.** Come to class having read the following:

Romero-Ruiz, M.H., S.G.A. Flantua, K. Tansey, and J.C. Berrío. "Landscape Transformations in Savannas of Northern South America: Land Use/Cover Changes since 1987 in the Llanos Orientales of Colombia." *Applied Geography* 32, no. 2 (March 2012): 766–76. <https://doi.org/10.1016/j.apgeog.2011.08.010>.

Langstroth Plotkin, R. "Biogeography of the Llanos de Moxos: Natural and Anthropogenic Determinants." *Geographica Helvetica* 66, no. 3 (December 18, 2012): 183–92. <https://doi.org/10.5194/gh-66-183-2011>.

- **Friday.** Come to class having read the following:

Lacerda, L. D., Borges, R., & Ferreira, A. C. (2019). Neotropical mangroves: Conservation and sustainable use in a scenario of global climate change. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 29(8), 1347–1364. <https://doi.org/10.1002/aqc.3119>

Growing Up in Ecuador's Mystical Mangroves. (2015, January 30). Photography. <https://www.nationalgeographic.com/photography/article/growing-up-in-ecuadors-mystical-mangroves?loggedin=true&rnd=1673539648518>

The Blue Crab, Guardian of the Mangroves of Esmeraldas. (2019, September 24). Slow Food International. <https://www.slowfood.com/the-blue-crab-guardian-of-the-mangroves-of-Esmeraldas/>

Week 7: Tropical Dry Forests

February 26, 28, and March 1

Learning outcome: The tropics can also be dry too, and in fact, dry landscapes are among the most endangered due to human activities. This week, we'll examine some of these landscapes.

This week.

- **Monday.** Come to class having read the following:

DRYFLOR, K. Banda-R, A. Delgado-Salinas, K. G. Dexter, R. Linares-Palomino, A. Oliveira-Filho, D. Prado, et al. "Plant Diversity Patterns in Neotropical Dry Forests and Their Conservation Implications." *Science* 353, no. 6306 (September 23, 2016): 1383–87. <https://doi.org/10.1126/science.aaf5080>.

TBD

- **Wednesday.** Come to class having read the following:

da Silva, J. M. C., & Lacher, T. E. (2020). Caatinga—South America. In *Encyclopedia of the World's Biomes* (pp. 554–561). Elsevier.

<https://doi.org/10.1016/B978-0-12-409548-9.11984-0>

TBD

- **Friday.** Come to class having read the following:

Kuemmerle, Tobias, Mariana Altrichter, Germán Baldi, Marcel Cabido, Micaela Camino, Erika Cuellar, Rosa Leny Cuellar, et al. “Forest Conservation: Remember Gran Chaco.” *Science* 355, no. 6324 (February 3, 2017): 465–465. <https://doi.org/10.1126/science.aal3020>.

Fernández, Pedro David, Nestor Ignacio Gasparri, Tobias Nicolás Rojas, Natalia Romina Banegas, José Andrés Nasca, Esteban Gabriel Jobbágy, and Tobias Kuemmerle. “Silvopastoral Management for Lowering Trade-Offs between Beef Production and Carbon Storage in Tropical Dry Woodlands.” *Science of The Total Environment* 912 (February 2024): 168973.

<https://doi.org/10.1016/j.scitotenv.2023.168973>.

Week 8: Dry Grasslands, Savannas and Shrublands

March 4, 6 and 8

Learning outcome: We'll continue examining dry landscapes, but focus more on places dominated by grasses.

This week.

- **Monday.** Come to class having listened to the following:

Mongabay Newscast. (n.d.). Mongabay Newscast: Cerrado solutions: Creative conservation for Brazil's massive savanna. Retrieved January 11, 2023, from

<https://mongabay.libsyn.com/cerrado-solutions-creative-conservation-for-brazils-massive-savanna>

- **Wednesday.**

TBD

- **Friday.** Exam I

Week 9: Spring Break

March 11, 13 and 15

Learning outcome: Appreciate the importance of taking a break, enjoying doing things outside of academic commitments and taking care of yourself. Enjoy the break!

Week 10: Deserts and “Cono Sur” - Temperate Landscapes of the Neotropics

March 18, 20, and 22

Learning outcome: Did you know that the driest place on Earth is in the Neotropics? This week, we'll learn about deserts! We'll also start studying Neotropical temperate landscapes, focusing first on grasslands.

This week.

- **Monday.** Come to class having read the following:

South American Coastal Deserts (NT8). (n.d.). One Earth. Retrieved August 23, 2021, from <https://www.oneearth.org/bioregions/south-american-coastal-deserts-nt8/>

Azua-Bustos, Armando, Carlos González-Silva, and Alberto G. Fairén. "The Atacama Desert in Northern Chile as an Analog Model of Mars." *Frontiers in Astronomy and Space Sciences* 8 (January 12, 2022): 810426. <https://doi.org/10.3389/fspas.2021.810426>.

- **Wednesday.** Come to class having read the following:

Bonnail, E., Díaz-García, A., Cruces, E., García, A., & Borrero-Santiago, A. R. (2022). Coastal uses and contaminant spread in the desert coastal region of Atacama. *Chemosphere*, 288, 132519. <https://doi.org/10.1016/j.chemosphere.2021.132519>

- **Friday.** Come to class having read the following:

TBD SOMETHING ABOUT TEMPERATRE GRASSLANDS, STEPPE, PAMPAS

Week 11: "Cono Sur"- Temperate Landscapes of the Neotropics

March 25, 27, and 29

Learning outcome: Not all the landscapes of the Neotropics lie within the tropics. In fact, temperate Neotropical areas are the only ones in the planet that make it so far south! We'll take a week to learn the basics about them.

This week.

- **Monday.** Come to class having read the following:

Rodríguez-Echeverry, James, Cristian Echeverría, Carlos Oyarzún, and Luis Morales. "Impact of Land-Use Change on Biodiversity and Ecosystem Services in the Chilean Temperate Forests." *Landscape Ecology* 33, no. 3 (March 2018): 439–53. <https://doi.org/10.1007/s10980-018-0612-5>.

- **Wednesday.** Come to class having read the following:

Chile's Mapuche People vs the State: A Battle for Ancestral Lands | Talk to Al Jazeera, 2020. <https://www.youtube.com/watch?v=r257TNiN3os>.

- **Friday.** Come to class having read the following:

Let's Make the World Wild Again | Kristine Tompkins, 2020. <https://www.youtube.com/watch?v=UWothclPazU>.

Louder, Elena, and Keith Bosak. "What the Gringos Brought: Local Perspectives on a Private Protected Area in Chilean Patagonia." *Conservation and Society* 17, no. 2 (2019): 161. https://doi.org/10.4103/cs.cs_17_169.

Week 12: Climate Change and the Neotropics

April 1, 3 and 5

Learning outcome: Climate change affects the Neotropics in various ways, both ecologically and socially. Similarly, the Neotropics impact the planet's climate and could hold significant roles in adaptation and mitigation. This week we'll examine and discuss these themes.

This week.

- **Monday.** Come to class having read the following:

Iwama, A. Y., Araos, F., Anbleyth-Evans, J., Marchezini, V., Ruiz-Luna, A., Ther-Ríos, F., Bacigalupe, G., & Perkins, P. E. (2021). Multiple knowledge systems and participatory actions in slow-onset effects of climate change: Insights and perspectives in Latin America and the Caribbean. *Current Opinion in Environmental Sustainability*, 50, 31–42.

Moutinho, Sofia. "South American Rainforests Are on the Brink of Becoming Carbon Sources." *Eos*, October 17, 2023.

<http://eos.org/articles/south-american-rainforests-are-on-the-brink-of-becoming-carbon-sources>.

- **Wednesday.** Come to class having read the following:

United Nations. "New Report Details Dire Climate Impacts in Latin America and the Caribbean | UNFCCC," 2022.

<https://unfccc.int/news/new-report-details-dire-climate-impacts-in-latin-america-and-the-caribbean>.

- **Friday.** Come to class having read the following:

Environment, U. N. "Responding to Climate Change." UNEP - UN Environment Programme, October 24, 2017.

<http://www.unep.org/regions/latin-america-and-caribbean/regional-initiatives/responding-climate-change>.

Week 13: The trial of the hippos – understanding Neotropical conservation through a unique case study

April 8, 10 and 12

Learning outcome: Through the semester we have explored numerous conservation cases associated with the landscapes we've studied. This week we'll immerse ourselves in a lively debate concerning a slightly unconventional conservation challenge, but that will hopefully shed light on the intricacies of doing conservation in the Neotropics and beyond.

This week:

- **Monday.** Exam II
- **Wednesday.** Background information and course preparation. Come to class having read the following:

Aridi, R., Charles, D., & McCoy, B. (2022, January 14). The Debate About Pablo Escobar's Hippos. NPR.

<https://www.npr.org/2022/01/13/1072903214/the-debate-about-pablo-escobars-hippos>

Magazine, S., & Katz, B. (n.d.). Pablo Escobar's Pooping Hippos Are Polluting Colombia's Lakes. Smithsonian Magazine. Retrieved January 11, 2023, from

<https://www.smithsonianmag.com/smart-news/pablo-escobars-hippos-may-pose-poopy-problem-colombia-180974202/>

Pablo Escobar's love for animals—How to handle Colombia's narco-hippos | The Americas | The Economist. (n.d.). Retrieved January 6, 2020, from

<https://www.economist.com/the-americas/2019/10/24/how-to-handle-colombias-narco-hippos?fbclid=IwAR322bLxf5eI0NgFllcIIOdyJAc1CRNJYi-SpYJ-INP0Td2e0435uKacsY>

- **Friday.** The trial

Week 14: Podcast preparation

April 15, 17 and 19

Learning outcome: We will dedicate all this week to prepare our podcasts

This week:

- **Monday.** DRC
- **Wednesday.** Podcast independent work.
- **Friday.** Podcast independent work.

Week 15: Podcast Presentation and Discussion

April 22, 24 and 26

Learning outcome: Ever been to an indie film festival, discussing films with directors afterward? Our podcast session will be like that. After listening to each other's podcasts, we'll have a 'light' discussion to delve deeper into our projects.

This week:

- **Monday.** TBD
- **Wednesday.** Podcast presentation and discussion
- **Friday.** Podcast presentation and discussion

Week 16: Course Evaluations

April 29

- **Monday.** Course Evaluations