Universitat Autònoma de Barcelona

2017/2018

Biocultural Diversity

Code: 43058
ECTS Credits: 6

Degree	Type	Year	Semester
4313784 Interdisciplinary Studies in Environmental, Economic and Social Sustainability	OT	0	1

Contact

Name: Victoria Reyes García

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Use of languages

Principal working language: english (eng)

Other comments on languages

Readings will be all in English and Spanish.

Teachers

Petra Johanna Benyei Peco

Beatriz Rodríguez Labajos

Albert Pèlachs Mañosa

Prerequisites

The students need to be interested in the links between human cultures and biodiversity at the local and global levels. Basic knowlege on conservation science would be recommended (e.g. notions on natural resource management and/ or management of natural protected areas), since conventional approaches to conservation will be critically examined during the course. The course will also mobilise advanced concepts from Geography, Anthropology, Ecological Economics and Environmental and Social Science research in general and therefore background knowledge on these fields would also be beneficial, although not strictly required. Good command in spoken Spanish (read in English) and teamwork skills are required.

Objectives and Contextualisation

Biodiversity loss is a well-known phenomenon. According to most projections, over the next thirty years, 20 percent of the world's existing species may cease to exist. Less widely known, though attracting increasing attention, is the loss of the world's languages and cultures. Several authors have remarked that the overlap between biological and cultural diversity is not random, and that the loss of cultural and biological diversity are linked.

In this course, we study biocultural diversity and its loss. The course is divided in three thematic areas a) Drivers of biocultural diversity loss; b) Consequences of biocultural diversity loss; and c) Responses to change in biocultural diversity. The course addresses four main objectives at a theoretical level:

1. To Discuss advanced issues in the field of biocultural diversity by combining knowledge of the fields of Anthropology, Biology, Environmental Sciences, Ecological Economics and Political Ecology, and Environmental Justice.

2. To analyze the pressures faced by vulnerable populations, especially indigenous peoples and rural populations, and the consequent environmental conflicts that emerge from these pressures.

3. To distinguish the impacts of global change, particularly those most directly related with human action, in biocultural diversity.

4. To examine transformations and solutions that arise at different scales, in particular at the local level, to face these pressures and impacts, and to understand how they become forces for the conservation of biocultural diversity.

At the methodological level, the objective of the course is

5. To familiarize the student with literature related to biocultural diversity and search tools (i.e., Web of Science), and to learn how to build a reference's database (in Access).

Skills

- Analyse how the Earth functions on a global scale in order to understand and interpret environmental changes on the global and local scales.
- Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Work in an international, multidisciplinary context.

Learning outcomes

1. Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
2. "Describe the concepts related to the idea of ""biocultural diversity. "
3. Express ideas and opinions on a complex topic (regarding (relationships of human groups and protection of biodiversity).
4. Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.
5. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
6. Work in an international, multidisciplinary context.
7. Work with different case studies on the concept of biocultural diversity.

Content

The course encompasses three main blocks: a) Drivers of biocultural diversity loss (sessions 1-4); b) Consequences of biocultural diversity loss (sessions 5-8); and c) Responses to change in biocultural diversity (9-12).

Many of the lectures will present case studies from ongoing empirical research. Overall, the selected case studies illustrate the overlap between biological and cultural diversity, how the loss of cultures - often involving indigenous and impoverished peoples' removal from their lands, suppression of their societies, and the loss of traditional environmental knowledge- can affect both biodiversity and livelihoods. From there, local responses, often stemming from environmental conflicts occurring worldwide, help to defend and sometimes restore their biocultural diversity.

The contents of each part will be developed according to the calendar presented in the 'Bibliography' section, and include the following topics:

Biocultural diversity loss and its drivers

1. The overlap between biological and cultural diversity: what role for protected areas?

2. Integration to the market, cultural change, and industrialization.

3. Deforestation, fragmentation, and loss of biological diversity.

4. Climate Change.

Consequences of biocultural diversity loss

5. Loss of traditional ecological knowledge and loss of cultural and linguistic diversity.

6. The role of biocultural diversity in shaping the values of biodiversity.

7. Extractive conflicts as drivers of environmental sustainability?

8. Adaptation, coping and governance: how local communities face changes? V Reyes-García (with D Calvo-Boyero)

Responses to change in biocultural diversity

9. Cultural change as a response: changes in uses and representations of community-based management.

10. Participatory monitoring and citizen science as a tool to preserve biocultural diversity.

11. Environmental Justice movements as promoters of biocultural diversity.

Methodology

The module is composed of 12 3-hour sessions. Each session is divided in two parts. During the first part (1.5h), students will attend a lecture and discuss associated readings (see program in bibliography). Students are expected to have read the 2 articles associated to each lecture before the class. During the second part (1.5h), students will work on systematic literature review (meta-analysis) on a topic related to biocultural diversity.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Lecture and reading discussion	18	0.72	2, 3, 5, 1, 7
Type: Supervised			
Systematic litterature review	18	0.72	4, 7, 6
Type: Autonomous			
Essay writting and oral presentation	34	1.36	4, 3, 5, 1, 6
Search and reading of scientific texts	80	3.2	4, 7, 6

Evaluation

The final grade of the course will include the following parts:

15%: Active participation in theoretical part of the class, showing understanding of the topic and readings.

15%: Presentation of work during the practical part of the class.

35%: 2.000-word essay on a topic to be chosen by the student.

35%: 15-minute oral presentation of the essay. Creative presentation formats are welcome.

Attendance is mandatory. If a student misses any part of a class, s/he will have to write a 500-word critical essay on the corresponding readings.

Topic of the essay must be communicated to professors by 13th December (latest). Essay is due on 29th January 2018.

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Essays	35%	0	0	4, 3, 1, 7
Oral presentation of the final essay	35%	0	0	3, 7
Participation in the class	15%	0	0	4, 2, 3, 5, 6
Work in the systematic litterature review	15%	0	0	4, 7, 6

Bibliography

Lesson	Date	Speaker	Theoretical part	Practical
Drivers of biocultural diversity loss				
1	4/12/17	V. Reyes-García	Introduction to the module The overlap between biological and cultural diversity: what role for protected areas?	Topic selection The use of search engines for bibliographic search. Selection of key words.
2	11/12/17	P. Benyei	Integration to the market, cultural change, and industrialization	Criteria for inclusion List of works
3	13/12/17	A. Pèlachs	Deforestation, fragmentation, and loss of biological diversity	Design of the database. Basic Access
4	18/12/17	V. Reyes-García	Climate change	Design and filling of the database
Consequences of biocultural diversity loss				

5	20/12/17	V. Reyes-García	Loss of traditional ecological knowledge and loss of cultural and linguistic diversity	Entering data on the database: Coding
6	8/1/18	B. Rodriguez-Labajos	The role of biocultural diversity in shaping the values of biodiversity.	Entering data on the database: Coding
7	10/1/18	B. Rodriguez-Labajos	Extractive conflicts as drivers of environmental sustainability?	Data analysis: descriptive indicators
8	15/1/18	V. Reyes-García with D. Calvo-Boyero	Adaptation, coping and governance: how local communities face changes?	Data analysis: bivariate relations
Responses to change in biocultural diversity				
9	17/1/18	A. Pèlachs	Cultural change as a response: changes in uses and representations of community-based management.	Data analysis: spatial representation
10	22/1/18	P. Benyei	Participatory monitoring and citizen science as tool to preserve biocultural diversity.	Discussion of results
11	24/1/18	B. Rodriguez-Labajos	Environmental Justice movements as promoters of biocultural diversity	Discussion of results
12	29/1/18	All teachers	Students presentations	Students presentations

Session 1: The overlap between biological and cultural diversity: what role for protected areas? V. Reyes-García

Brief description: The concept of biocultural diversity refers to the geographical overlap between biological and cultural diversity. After reviewing the concept and prominent research on biocultural diversity, we will examine two different biodiversity management models: protected areas and working forest, in the attempt to assess whether restrictive conservation policies are a threat to biocultural diversity.

Readings:

Maffi, L. (2005). Linguistic, Cultural, and Biological Diversity. Annual Review of Anthropology, 34, 599-618. Available here.

Porter-Bolland, L., E.A. Ellis, M.R. Guariguata, I. Ruiz-Mallén, S. Negrete-Yankelevich, V. Reyes-García. Community managed forest and forest protected areas: An assessment of their conservation effectiveness across the tropics. Forest Ecology and Management. 268(SI):6-17. 2012. Available here.

Session 2: Integration to the market, cultural change, and industrialization. P. Benyei

Brief description: Rural communities around the world hold important pockets of biocultural diversity. However, rural livelihoods are changing rapidly as industrialized food systems expand. This process leads to changes in landscapes and cultures, and has being of interest to many researchers that try to understand how these changes may be affecting the biocultural memory of these communities. In this session we will review some of the literature covering rural biocultural diversity and present the case study of traditional agroecological knowledge loss in Spain.

Readings:

Toledo V.M. & Barrera-Bassols, N. 2008. ¿Qué es la memoria biocultural?. Introduction in Toledo and Barrera-Bassols (Eds.) La memoria biocultural: la importancia ecológica de las sabidurías tradicionales. Icaria, Barcelona. Available here.

Gómez-baggethun, E., Mingorría, S., Reyes-garcía, V., Calvet, L., & Montes, C. (2010). Traditional Ecological Knowledge Trends in the Transition to a Market Economy: Empirical Study in the Doñana Natural Areas. Conservation Biology, 24(3), 721-729. Available here.

Session 3: Deforestation, fragmentation, and loss of biological diversity. A. Pèlachs

Brief description: This session will discuss basic concepts such as baseline, threshold, or resilience taking a long-term ecological perspective.

Readings:

Pèlachs et al. The Role of Environmental Geohistory in High-Mountain Landscape Conservation. Available here.

Session 4: Climate Change. V. Reyes-García

Brief description: An increasing body of research indicates that indigenous peoples are potential allies to understand climate change at the local scale. The Intergovernmental Panel on Climate Change (IPCC) recommends the use of Local Environmental Knowledge (LEK) to set up detailed and close monitoring of climate change, but yet, the breakthrough of LEK into the arena of climate research remains awaiting. In view of this gap, the lesson will be devoted to explore (a) different examples of first-hand, unique and complex systems of climatic knowledge of indigenous peoples; and (b) potential partnerships and dialog between scientific and local knowledge of a changing climate.

Readings:

Klein, J.A., Hopping, K.A., Yeh, E.T., Nyima, Y., Boone, R.B., Galvin, K.A. (2014) Unexpected climate impacts on the Tibetan Plateau: Local and scientific knowledge in findings of delayed summer. Global Environmental Change 28, 141-152. Available here.

Marin, A. (2010) Riders under storms: Contributions of nomadic herders' observations to analysing climate change in Mongolia. Global Environmental Change 20, 162-176. Available here.

Session 5: Loss of traditional ecological knowledge and loss of cultural and linguistic diversity. Victoria Reyes-García

Brief description: Despite the recent movement of reaffirmation of indigenous populations claiming the rights to keep their cultures and their land and to self-govern, the disappearance of many of the languages and ways of knowing that were created during human evolution will probably be among the costs of economic growth of the 20th and 21st centuries. Such unaccounted loss goes together with the decrease in traditional ecological

knowledge systems, or the knowledge of natural resources and of ecosystem functions and dynamics, as well as associated management practices, beliefs, traditions, and institutions, developed by societies with historical and intergenerational continuity in resource use and management. This session will analyze case studies of the loss of knowledge

Readings:

Gomez-Baggethun, E., & Reyes-Garcia, V. (2013). Reinterpreting Change in Traditional Ecological Knowledge. Human Ecology, 41(4), 643-647. Available here.

Berkes, F., Colding, J., & Folke, C. (2000). Rediscovery of traditional ecological knowledge as adaptive management. Ecological Applications, 10(5), 1251-1262. Available here.

Session 6: The role of biocultural diversity in shaping the values of biodiversity. B. Rodriguez-Labajos

Brief description:

Our discussion today rests on instances showing the analytical implications of three main socio-economic meanings of biodiversity loss: 1) the loss of natural capital; 2) the loss of ecosystem functions; and 3) the loss of cultural values and human rights to livelihood. We review several approaches to include economic considerations in biodiversity conservation. We show cases where monetary valuation is relevant and other cases where it is controversial and even counterproductive, as it undermines the objectives of conservation. In order to substantiate these points, we will focus on the growing amount of research on economic quantifications and valuations of cultural ecosystem services (CES) in agricultural systems. We will use this literature to understand the interrelations between the different CES and their relationships with the landscape with a case study on the Ifugao Rice Terraces of the Philippines.

Readings:

Rodríguez-Labajos, B. & Martínez-Alier, J. 2013. The Economics of Ecosystems and Biodiversity: Recent Instances for Debate. Conservation and Society, 11(4): 326-342. Available here.

Tilliger, B., Rodríguez-Labajos, B., Bustamante, J.V. & Settele, J. 2015. Disentangling Values in the Interrelations between Cultural Ecosystem Services and Landscape Conservation-A Case Study of the Ifugao Rice Terraces in the Philippines. Land, 4: 888-913. Available here.

Session 7: Extractive conflicts as drivers of environmental sustainability? B. Rodriguez-Labajos

Brief description:

Are mining resistance movements limited to preventing a project in a given area, or do they demand broader transformative policies and changes in the current political economy? This lecture analyses tensions ecological distribution conflicts around mining projects situating mining activities as a political problem of social environmental justice. Five main types of responses stemming from worldwide environmental justice struggles related to mining and their role in forging pathways to sustainability are then presented and discussed.

Readings:

Özkaynak B. & Rodriguez-Labajos, B. 2017. Mining conflicts. In Routledge Handbook of Ecological Economics: Nature and Society (Clive L. Spash, Ed), Routledge, Oxon, New York. Available here.

Rodríguez-Labajos, B. & Özkaynak, B. 2017. Environmental justice through the lens of mining conflicts. Geoforum, 84: 245-250. Available here.

Session 8: Adaptation, coping and governance: how local communities face changes? V Reyes-García (with D Calvo-Boyero)

Brief description: Rural livelihoods are exposed to multiple stressors including climate variability or market prices volatilityamong others. Rural households' heterogeneity and the diversity of stressors explain the existence of a wide range of adaptive and coping responses in rural communities that may or not result in more

sustainable livelihoods. In this regard, several studies point toward a number of considerations for understanding how responses are articulated and why they result in differentiated outcomes across multiple contexts. First, it has been suggested that cultural framings play an important role in enhancing or undermining households' adaptive capacity. Worldviews, preferences, desires and identities are aspects that motivate or discourage the development of adaptive responses. Second, it has been noted that risk perception and perceived adaptive capacity mediate in the selection and execution of adaptive responses, paying attention to individual fears, behaviour, previous experiences and other cognitive factors. And third, it has been suggested that formal (e.g., national laws) and informal (e.g., conventions and codes of behaviour) institutions entail opportunities and barriers to transform adaptive capacity into actual adaptation. Institutions are thus central to understand how social groups that differ in decision-making power and resources relate to each other.

Readings:

Agrawal, A. Perrin, N. 2008. Climate adaptation, local institutions, and rural livelihoods. International Forestry Resources and Institutions Program, IFRI. Working Paper W08I-6. Available here.

Schmook, B. van Vliet, N. Radel, C. Manzón-Che, M.J. McCandless, S. 2013. Persistence of Swidden Cultivation in the Face ofGlobalization: A Case Study from Communities in Calakmul, Mexico. Human Ecology 41: 93-107. Available here.

Session 9: Cultural change as a response: changes in uses and representations of community-based management. A. Pèlachs

Brief description: In the session, "traditional" mountain activities (i.e., commons management of forest and pastures) will be discussed. The focus will be on the complexity of this management practices and their effects on biodiversity, underlying the importance of understanding these managements systems to understand current biodiversity.

Readings:

Pèlachs, A., Changes in Pyrenean woodlands as a result of the intensity of human exploitation: 2,000 years of metallurgy in Vallferrera, northeast Iberian Peninsula. Available here.

Session 10: Participatory monitoring and citizen science as a tool to preserve biocultural diversity. Petra Benyei

Brief description: Participatory monitoring and citizen science have been proved to be very effective to expose and confront environmental impacts of extractive industries, empower local communities and to influence on-the-ground management activities. In this session we will review some of these concepts and present a case study in which Citizen Science is used to protect Traditional Ecological Knowledge.

Readings:

Stepenuck, K. F., & Green, L. T. (2015). Individual- and community-level impacts of volunteer environmental monitoring: a synthesis of peer-reviewed literature. Ecology and Society, 20(3), 19. Available here.

Burke, B. J., & Heynen, N. (2014). Transforming participatory science into socioecological praxis: Valuing marginalized environmental knowledges in the face of neoliberalization of nature and science. Environment and Society: Advances in Research, 5, 7-27. Available here.

Session 11: Environmental Justice movements as promoters of biocultural diversity. B. Rodriguez-Labajos

Brief description:

In their own battles and strategy meetings since the early 1980s, EJOs (environmental justice organizations) and their networks have introduced several concepts to political ecology that have also been taken up by academics and policy makers. In this session, we explain the contexts in which such notions have arisen, providing definitions of a wide array of concepts and slogans related to environmental inequities and sustainability, and explore the connections and relations between them. These concepts include: environmental justice, ecological debt, popular epidemiology, environmental racism, climate justice,

environmentalism of the poor, water justice, biopiracy, food sovereignty, 'green deserts', 'peasant agriculture cools downs the Earth', land grabbing, Ogonization and Yasunization, resource caps, corporate accountability, ecocide, and indigenous territorial rights, among others. We examine how activists have coined these notions and built demands around them, and how academic research has in turn further applied them and supplied other related concepts, working in a mutually reinforcing way with EJOs. We argue that these processes and dynamics build an activist-led and co-produced social sustainability science, furthering both academic scholarship and activism on environmental justice.

Readings:

Schlosberg, D. 2013. Theorising Environmental Justice: The Expanding Sphere of a Discourse, Environmental Politics, 22(1): 37-55. Available here.

Martinez-Alier J., Anguelovski I., Bond P., Del Bene D., Demaria F., Gerber J.-F., Greyl L., Haas W., Healy H., Marín-Burgos V., Ojo G., Porto M., Rijnhout L., Rodríguez-Labajos B., Spangenberg J., Temper L., Warlenius R. & Yánez I., 2014, Between activism and science: grassroots concepts for sustainability coined by Environmental Justice Organizations, Journal of Political Ecology, 21: 19-60. Available here.