

# Biodiversity in the Anthropocene

Master – Winter Term (Wintersemester)

The course will be taught in English

<b>Module 7/8: Biodiversity in the Anthropocene</b>			ECTS credits: 10
<p><u>Educational and qualification objectives:</u> Participants will deepen and broaden their knowledge on biodiversity concepts, theory and spatial and temporal patterns. Based on contemporary, international literature, students will acquire an understanding of the main characteristics of biodiversity change in the Anthropocene and which drivers shape these changes, such as climate change, habitat conversion and fragmentation or overexploitation. By exploring topics at the research frontier of global change effects on biodiversity, students will learn to critically reflect on and jointly discuss scientific literature, to synthesise across sometimes controversial positions, and to understand both the state of knowledge and the uncertainty in this dynamically developing field of biodiversity research. Finally, students will attain an overview on contemporary conservation efforts and policy frameworks aimed at confronting the ongoing biodiversity crisis. Methodologically, students will get exposed to a range of tools and methodologies to analyse biodiversity change and to set priorities in conservation projects covering both terrestrial and aquatic perspectives. In sum, the course will equip students with the theoretical background, critical thinking, and practical tools to address biodiversity loss in the Anthropocene.</p>			
<p><u>Prerequisites for participation in the module or specific courses within the module:</u> Modules 1, 2, 3 and 4. Knowledge in statistics (OLS regression, test statistics), basic knowledge in geographic information systems, basic knowledge in R.</p>			
Type of course	Time of attendance, workload in hours	ECTS credits (LP) and requirements for their issuance	Topics, contents
SE (seminar)	<u>2 SWS</u> <sup>1</sup> <u>120 hours</u> 25 hours attendance, 95 hours pre-and post-processing of the course	4 LP, active participation, small presentations	<p>The seminar will provide an overview of</p> <ul style="list-style-type: none"> <li>- Biodiversity concepts and theory</li> <li>- Major drivers of biodiversity change in the Anthropocene</li> <li>- Key international policy initiatives</li> <li>- Conservation approaches, efforts, and organizations</li> <li>- Global biodiversity observation networks and information facilities</li> </ul> <p>A core component of the seminar will be the discussion of current frontiers in global change and biodiversity research, based on up-to-date scientific literature. Possible topics include:</p> <ul style="list-style-type: none"> <li>- Shifting baselines and their importance for conservation</li> <li>- The habitat amount hypothesis: does habitat fragmentation really matter?</li> <li>- Trade-offs between agriculture and biodiversity: land sparing versus land sharing</li> <li>- The half Earth proposal – feasible, desirable, enough?</li> <li>- Rewilding as a new paradigm for restoration and biodiversity conservation</li> </ul>
PC SE (computer seminar)	<u>2 SWS</u> <u>120 hours</u> 25 hours attendance, 95 hours pre- and post-processing of the course	4 LP, active participation, exercises, project work	In the PC SE, topics covered in the SE will be deepened, including via practical applications to case studies. The PC SE also provides hand on experience on biodiversity databases and sources and showcases conservation tools such as prioritization frameworks.
Module exam	<u>60 hours</u> term paper (10 pages/ ca. 15,000-20,000 ZoL oM <sup>2</sup> )	2 LP, pass	A term paper will be written where students can chose from a range of topics.
Duration of module		<input checked="" type="checkbox"/> 1 Semester	<input type="checkbox"/> 2 Semester
Begin of module		<input checked="" type="checkbox"/> WS	<input type="checkbox"/> SS

<sup>1</sup> SWS = Semesterwochenstunden (hours of attendance per semester week)

<sup>2</sup> „ZoL oM“ = Zeichen ohne Leerzeichen und ohne Materialanhang (characters without space and without appendix)