

Lecture Schedule (subject to change)

Part I. Introduction to Conservation Biology

Sep 4 – Drivers and quantification of species extinctions

Sep 9 – History of conservation biology (interdisciplinarity of conservation biology)

Sep 11 – Fundamentals of biodiversity

Sep 16 – The value and measurement of biodiversity

Part II. Threats to Biodiversity

Sep 18 – Land use change

Sep 23 – Overharvesting

Sep 25 – Invasive species

Sep 30 – Climate change

Oct 2 – Altered disturbance regimes

Part III. Approaches to Conservation

Oct 7 – Species and population conservation

Oct 9 – Ecosystem and landscape/seascape conservation

Oct 14 – *No lecture (Indigenous People's Day)*

Oct 16 – **MIDTERM**

Oct 21 – Conservation in human modified landscapes

Oct 23 – Ex-situ conservation

Oct 28 – Artificial intelligence and conservation (Guest lecture: Prof Milind Tambe, Harvard Computer Science)

Oct 30 – Using remote sensing in conservation

Nov 4 – Conservation genetics (Guest lecture: Prof Scott Edwards, Harvard OEB)

Nov 6 – Adaptive management as a conservation tool (Guest lecture: Dr Angela Gaylard, African Parks)

Nov 11 – The Price of Beauty: Exploring Indonesia's Songbird Trade through Education and Storytelling (Dr. Ben Mirin, Cornell)

Nov 13 – Quantifying conservation efficacy

Part IV. Looking Forward

Nov 18 – Conservation priorities in the Anthropocene

Nov 20 – Research-implementation gap (from theory to practice)

Nov 25 – Hopeful visions for the future

Nov 27 – *No lecture (Thanksgiving recess)*

Dec 2 – Conservation biology as a career

Section Schedule (subject to change)

Week 2 (September 12th/13th) – Species extinctions

- Ceballos et. al. (2015) Accelerated modern human-induced species losses: Entering the sixth mass extinction *Science Advances* 1: e1400253
- Ripple et. al. (2017) World Scientists’s Warning to Humanity: A Second Notice. *BioScience* 67, 1026-1028

Week 3 (September 19th/20th) – Value and measurement of biodiversity

- Duffy et al. 2017 (Nature) Biodiversity effects in the wild are common and as strong as key drivers of productivity. *Nature* 549, 261-264
- Pimm (1997) The value of everything. *Nature* 387, 231-232

Week 4 (September 26th/27th) – Overharvesting

- Lindsey et. al. (2013) The bushmeat trade in African savannas: Impacts, drivers, and possible solutions. *Biological Conservation* 160, 80-96.
- Golden et. al. (2011) Benefits of wildlife consumption to child nutrition in a biodiversity hotspot. *Proceedings of the National Academy of Sciences* 108, 19653-19656

Week 5 (October 3rd/4th) – Invasive species and climate change

- Gallardo et. al. (2017) Protected areas offer refuge from invasive species spreading under climate change. *Global Change Biology* 23, 5331-5343

Week 6 (October 10th/11th) – Species and population conservation

- Packer et al. (2013) Conserving large carnivores: dollars and fence. *Ecology Letters* 16, 635-641.
- Creel et al. (2013) Conserving large populations of lions – the argument for fences has holes. *Ecology Letters* 16, 1413-e3.

Packer et al. (2013) The case for fencing remains intact. *Ecology Letters* 16, 1414-e4

Week 7 (October 17th/18th)

- No section (midterm)

Week 8 (October 24th/25th) – Conservation in human modified environments/landscape conservation

- Arroyo-Rodriguez et. al. (2020) Designing optimal human-modified landscapes for forest biodiversity conservation. *Ecology Letters* 23, 1404-1420.

Week 9 (October 31st/November 1st) – Ex-situ conservation

- Dolman et al. (2015) Ark or park, the need to predict relative effectiveness of *ex situ* and *in situ* conservation before attempting captive breeding. *Journal of Applied Ecology* 52, 841-850.

Week 10 (November 7th/8th) â€” Remote sensing in conservation

- Asner et al. (2017) Airborne laser-guided imaging spectroscopy to map forest trait diversity and guide conservation. *Science* 355, 385-389

Week 11 (November 14th/15th) â€” Restoration ecology

- Strassburg et al. (2020) Global priority areas for ecosystem restoration. *Nature* 586, 724-729

Week 12 (November 17th/18th) â€” Conservation priorities

- Jung et al. (2021) Areas of global importance for conserving terrestrial biodiversity, carbon and water. *Nature Ecology and Evolution* 5, 1499-1509.
- Wyborn & Evans (2021) Conservation needs to break free from global priority mapping. *Nature* 5, 1322-1324.

Week 13 (November 21st/22nd)

- No section (Thanksgiving break)