BIOL/ENST/NORT 3313: ECOLOGICAL STRUCTURE IN NORTHERN ENVIRONMENTS

TOPIC 6: CONSERVATION AND MANAGEMENT

The desperate state of Earth's biodiversity

The Canadian context

Ecological traps

Invasive species and the tens rule

Management of exploited species

Who knows: Conservation biologists or resource managers?

How many species will survive?

Reconciliation ecology

Something to think about:

Populations can only yield resources for humans and other predators if they exist below their resource and density-limited carrying capacity. With this in mind, contrast the strategies used by farmers, ranchers and pastoralists with that of wildlife, fisheries and forest managers. Should they converge? If so, why? If not, why?

Required reading:

Estes, J. A. et al. 2011. Trophic downgrading of planet earth. Science 333:301-306. http://dx.doi.org/10.1126/science.1205106

Morris, D. W. et al. 2013. The Lakehead Manifesto: principles for research and development in the North. Arctic 66: iii-iv.

Ogden, A., and Thomas, M.-E. 2013. Letter to the editor. Re: The Lakehead Manifesto. Arctic 66: 508. http://arctic.journalhosting.ucalgary.ca/arctic/index.php/arctic/article/view/4342/4322

Audla, T., and D. Smith. 2014. Letter to the editor. A principled approach to research and development in Inuit Nunangat starts with the people. Arctic 67: 120-121. http://pubs.aina.ucalgary.ca/arctic/Arctic67-1-120.pdf

Workshop 6:

Editing the class term research proposal.

Merge documents and edit the draft proposal. Allocate tasks for the penultimate draft. At the end of class, select one of the following terms describing your self-assessment on this task (exceptional, outstanding, very strong, strong, moderate, insufficient). Do the same for the class as a whole. Submit both 'scores' to your GA before leaving. Answer the following questions:

What works?

What is missing?

What would an independent reviewer think of our proposal?

Does it flow seamlessly from abstract to conclusion?

What do we need to do to improve it?

Some related reading:

Schlaepfer, M. A., M. C. Runge and P. W. Sherman. 2002. Ecological and evolutionary traps. Trends in Ecology and Evolution 17:474-480. http://www.sciencedirect.com/science/article/pii/S0169534702025806

Barnosky, A. D. et al. 2011. Has the Earth's sixth mass extinction already arrived? Nature 471:51-57. http://www.nature.com/nature/journal/v471/n7336/full/nature09678.html

Short, J. and S. Murray. 2011. A frozen hell. Nature 472:162-163. http://www.nature.com/nature/journal/v472/n7342/full/472162a.html

Rosenzweig, M. L. et al. 2012. An ecological telescope to view future terrestrial vertebrate diversity. Evolutionary Ecology Research 14:247-268. http://aaronflesch.com/Publications/Peer-referred%20articles/Rosenzweig%20et%20al.%202012.pdf

Robertson, B. A., J. S. Runge and A. Sih. 2013. Ecological novelty and the emergence of evolutionary traps. Trends in Ecology and Evolution 28:552-560. https://www.sciencedirect.com/science/article/pii/S0169534713001067

WWF. 2016. Living planet report 2016. Risk and resilience in a new era. WWR International, Gland, Switzerland. https://www.wnf.nl/custom/LPR_2016_fullreport/

Robertson, B. A., R. S. Ostfeld and F. Keesing. 2017. Trojan females and Judas goats: evolutionary traps as tools in wildlife management. Bioscience 67:983-994. https://academic.oup.com/bioscience/article/67/11/983/4564179