

# 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:

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>

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>

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>

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

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/](https://www.wnf.nl/custom/LPR_2016_fullreport/)