

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

## ***TOPIC 5: NORTHERN FOOD WEBS***

*Functional responses*

*Merging dynamics with foraging behaviour*

*The world is green hypothesis (HSS)*

*The exploitation ecosystems hypothesis (EEH/OFAN)*

*Exploitation ecosystems in arctic environments*

*Simple or complex food webs?*

*Spill-over predation*

*Tests of exploitation ecosystems*

*Interactions in food webs*

*The dissenters*

### ***Something to think about:***

Cyclical population dynamics appear to be limited to northern herbivores and some of their predators. Why should this be so? What predictions does the exploitation ecosystems hypothesis make about populations in the southern hemisphere?

### ***Required reading:***

Schindler, D. E. et al. 2015. The portfolio concept in ecology and evolution. *Frontiers in Ecology and Environment* 13:257-263.

<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/140275>

***Related reading:***

Boonstra, R., H. P. Andreassen, S. Boutin, J. Hušek, R. A. Ims, C. J. Krebs, C. Skarpe and P. Wabakken. 2016. Why do the boreal forest ecosystems of northwestern Europe differ from those of western North America? *Bioscience* 66:722-734.

<http://www.zoology.ubc.ca/~krebs/papers/302.pdf>

Feit, B. et al. 2019. Apex predators decouple population dynamics between mesopredators and their prey. *Ecosystems* 22:1606-1617.

<https://link.springer.com/content/pdf/10.1007%2Fs10021-019-00360-2.pdf>