

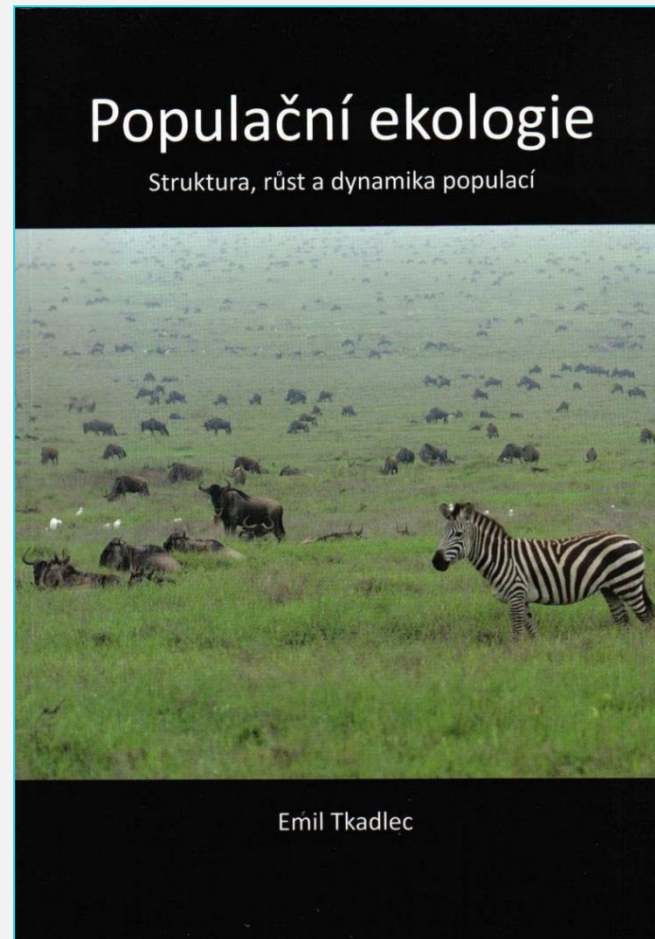
Population Ecology of Animals



Content

- ▶ Population ecology (Resources, Conditions, Models)
- ▶ Population growth (Population censuses)
- ▶ Population structure (Stage/Age life-tables, k-factor analysis)
- ▶ Geographic variation (Temperature models)
- ▶ Intraspecific competition (Harvesting, Allee effect)
- ▶ Spatial ecology (Distribution, Dispersal, Metapopulations)
- ▶ Interspecific competition (Mutualism)
- ▶ Predation (Functional and numerical responses)
- ▶ Predation models (Host-pathogen/parasite, Prey-predator, Host-parasitoid, Plant-herbivore)

Literature



Tkadlec E. 2009. Populační ekologie. Struktura, růst a dynamika populací. Univerzita Palackého.

Literature

Akcakaya H.R., Burgman M.A. & Ginzburg L.R. 1999. Applied Population Ecology. Principles and Computer Exercises using RAMAS. EcoLab. Sinauer.

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Begon M., Mortimer M. & Thompson D.J. 1996. Population Ecology: A unified study of animals and plants. Blackwell.

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Jarošík V. 2005. Růst a regulace populací. Academia.

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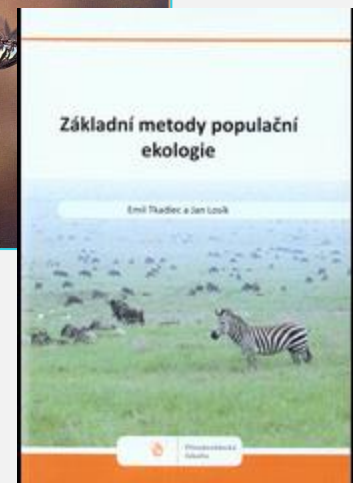
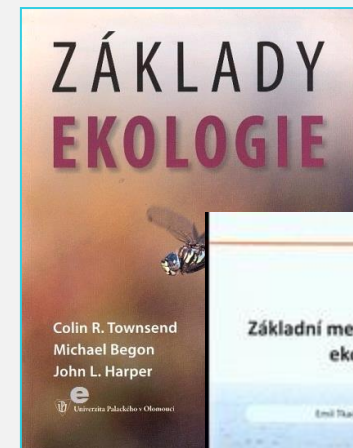
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Vandermeer J.H. & Goldberg D.E. 2003. Population Ecology: First principles. Princeton.

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Presentations

No.	Topics	Date
1.	Adaptation, fitness, phenotypic plasticity	7.10.
2.	Genetic variability, natural selection, r/K - selection	7.10.
3.	Abundance and cycles	14.10.
4.	Evolution of sex, sex determination	14.10.
5.	Sex ratio	21.10.
6.	Geographic variability (speciation, clines, geographic rules)	21.10.
7.	Intraspecific competition, Sustainable harvesting	4.11.
8.	Management of endangered species	4.11.
9.	Regulation of pests	17.11.
10.	Cooperation, Allee effect	18.11.
11.	Dispersal. movement, and metapopulations	25.11.
12.	Dormancy, navigation, and migration	25.11.
13.	Interspecific competition, competitive exclusion principle, apparent competition	2.12.
14.	Niche and coexistence (storage effect, heteromyopy, resource partitioning)	2.12.
15.	Amensalism, comensalism, mutualism	9.12.
16.	Defence against predators (crypsis, aposematism, mimicry)	9.12.
17.	True predators, parasitoids and host manipulation	16.12.
18.	Herbivores, Parasites and pathogens and host manipulation	16.12.

Projects

1. Functional response
2. Population size
3. Numerical response



Homework

- ▶ Study chapters 1 & 2 and the description of a selected project
- ▶ Renew your maths knowledge

Pekár S. & Kintrová K. 2013.
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příkladech. MUNI Press, Brno.

