Modeling Population Dynamics: Estimating Demographic Parameters for Wildlife Conservation

Programme

Lecturer:
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Norwegian Institute for Nature Research

Workshop 13–19 January 2020
University of Debrecen, Hungary

WORKSHOP PROGRAMME

Monday, 13 January 2020	
Session	*Topic*
9:00- 10:00	Lecture: Introduction to population ecology and statistical paradigms
10:00- 10:30	coffee break
10:30- 12:00	Lab: Introduction to Program R and statistical analyses
12:00- 14:00	lunch break
14:00-15:00	Lec. Occupancy models for determining population status and trends
15:00- 15:30	coffee break
15:30-17:00	Lab. Estimation of occupancy rates from detection-non detection data for unmarked individuals
Tuesday, 14 January 2020	
Session	*Topic*
9:00- 10:00	Lec. Count-based models for population dynamics, with negative density-dependence and Allee effects
10:00- 10:30	coffee break
10:30- 12:00	Lab. Exponential and logistical population growth, population viability analysis and extinction thresholds, effects of harvest
12:00- 14:00	lunch break
14:00- 15:00	Lec. Closed population models for estimation of abundance
15:00- 15:30	coffee break
15:30- 17:00	Lab. Closed population models with marked individuals
Wednesday, 15 January 2020	
Session	*Topic*
9:00- 10:00	Lec. Time-to-event models for estimating survival and hazard rates
10:00- 10:30	coffee break
10:30- 12:00	Lab. Kaplan-Meier, Cox proportional hazards and hazard rate models for radio-telemetry data and sessile organisms
12:00- 14:00	lunch break
14:00- 15:00	Lec. Open population models for estimating apparent survival and other transition rates
15:00- 15:30	coffee break
15:30- 17:00	Lab. Closed population models with marked individuals
Thursday, 16 January 2020	
Session	*Topic*
9:00- 10:00	Lec. Basics of life-tables for demographic data
10:00- 10:30	coffee break
10:30- 12:00	Lab. Estimation of life table statistics such as population growth rate, net reproductive rate, generation time, and life expectancy
12:00- 14:00	lunch break
14:00- 15:00	Lec. Projection matrices and life-cycle diagrams
15:00- 15:30	coffee break
15:30- 17:00	Lab. Demographic analysis of projection matrices: lambda, reproductive value, stable age distributions, sensitivity and elasticity values

Friday, 17 January 2020	
Session	*Topic*
9:00- 10:00	Lec. Life-table response experiments (LTRE)
10:00- 10:30	coffee break
10:30- 12:00	Lab. Fixed and random effect LTRE models for estimating the variance of the finite rate of population change (λ)
12:00- 14:00	lunch break
14:00- 15:00	Lec. Stochastic population models, estimation of variance components, life-stage simulation analyses (LSA)
15:00- 15:30	coffee break
15:30- 17:00	Lab. Analytical solutions based on the delta method, numerical solutions based on bootstrapping.
Saturday, 18 January 2020	
Session	*Topic*
9:00- 10:00	Consultation and development of participants projects
10:00- 10:30	coffee break
10:30- 12:00	Consultation and development of participants projects
12:00- 14:00	lunch break
14:00-15:00	Consultation and development of participants projects
15:00- 15:30	coffee break
15:30- 17:00	Consultation and development of participants projects
Sunday, 19 January 2020	
Session	*Topic*
9:00- 10:00	Consultation and development of participants projects
10:00- 10:30	coffee break
10:30- 12:00	Consultation and development of participants projects
12:00- 14:00	lunch break
14:00-15:00	Consultation and development of participants projects
15:00- 15:30	coffee break
15:30- 17:00	Consultation and development of participants projects