

# Spatio-temporal models for ecologists

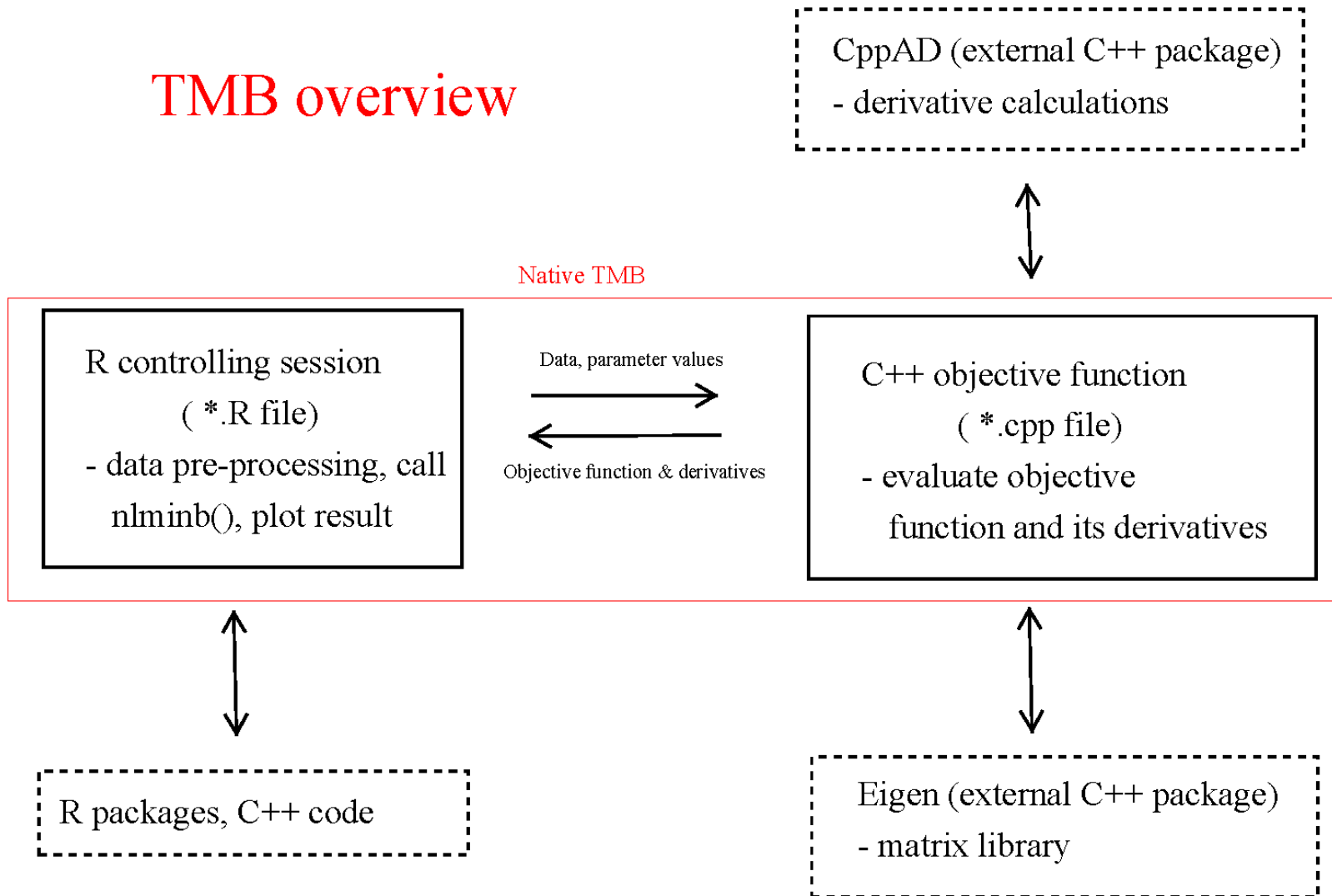
## An overview

Jim Thorson and Noble Hendrix

Spring, 2016

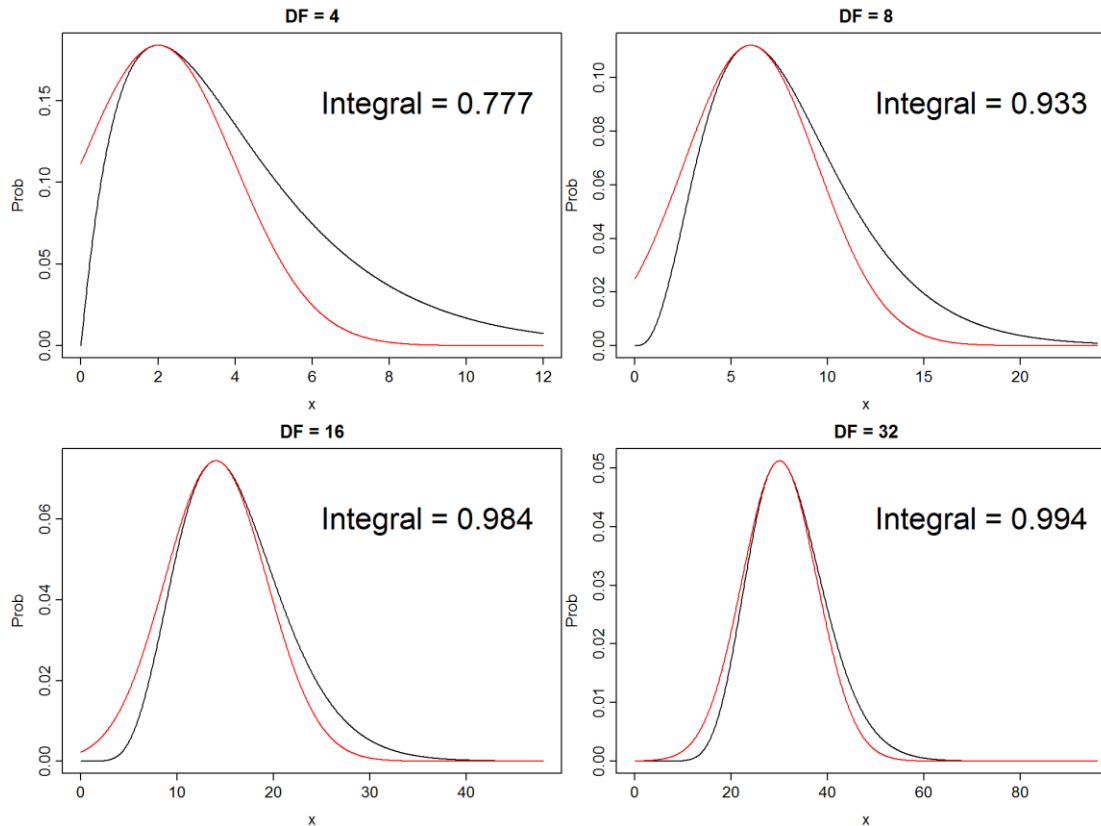
# Week 1

## TMB overview



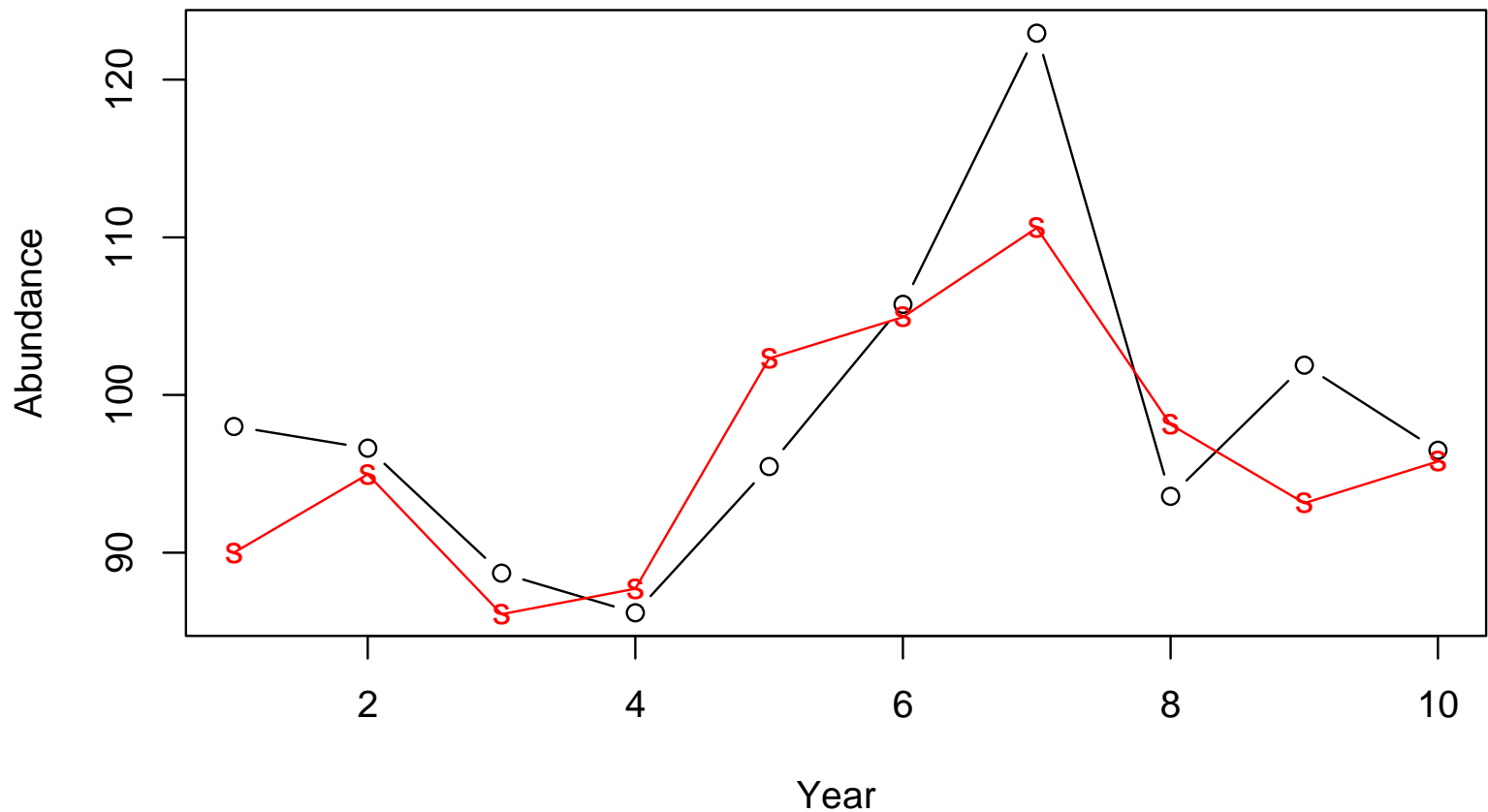
# Week 2

- Generalized Linear Mixed Models
- Laplace approximation



# Week 3

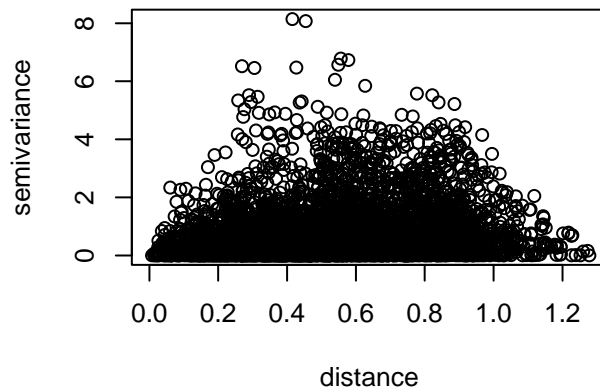
- Temporal and state-space models



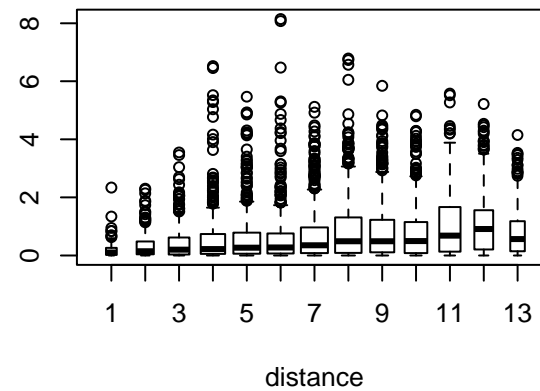
# Week 4

- Geostatistical Models

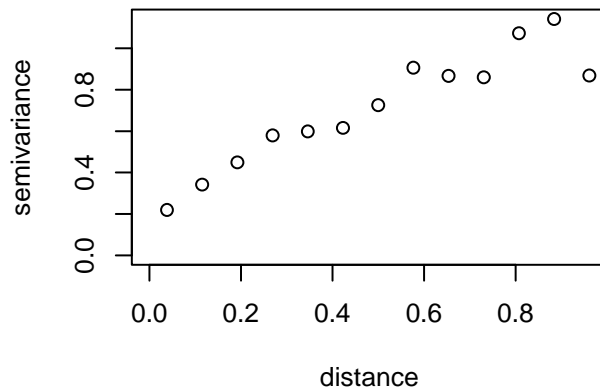
**variogram cloud**



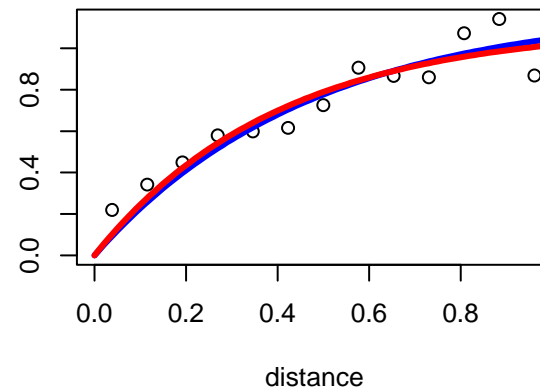
**classical variogram**



**binned variogram**

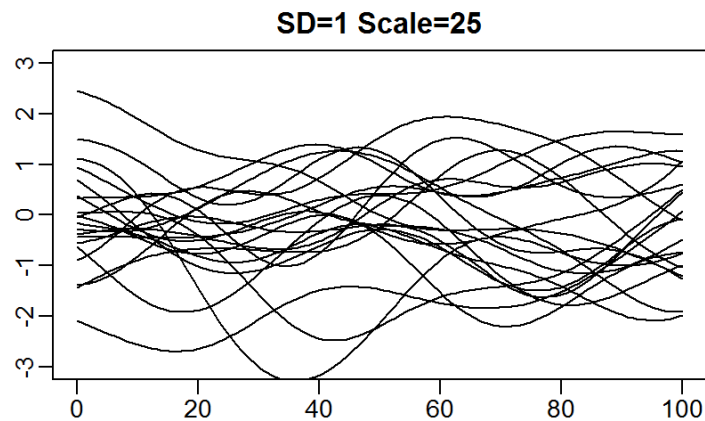
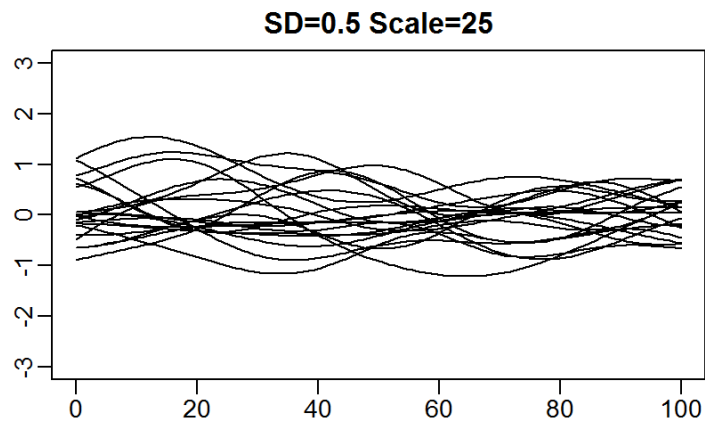
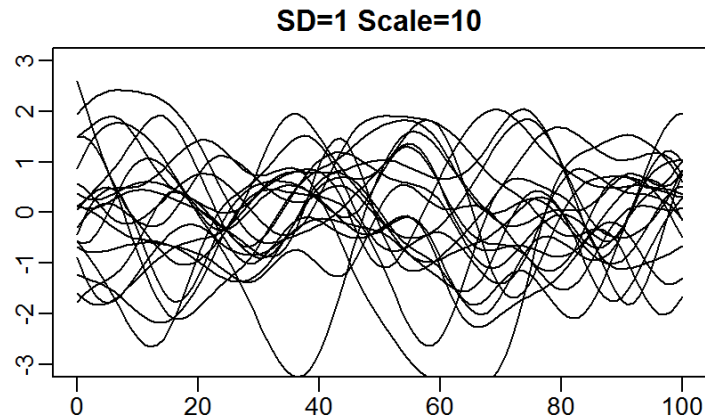
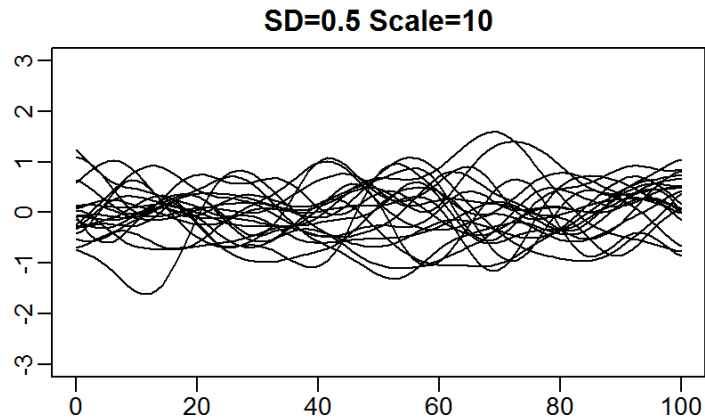


**semivariance**

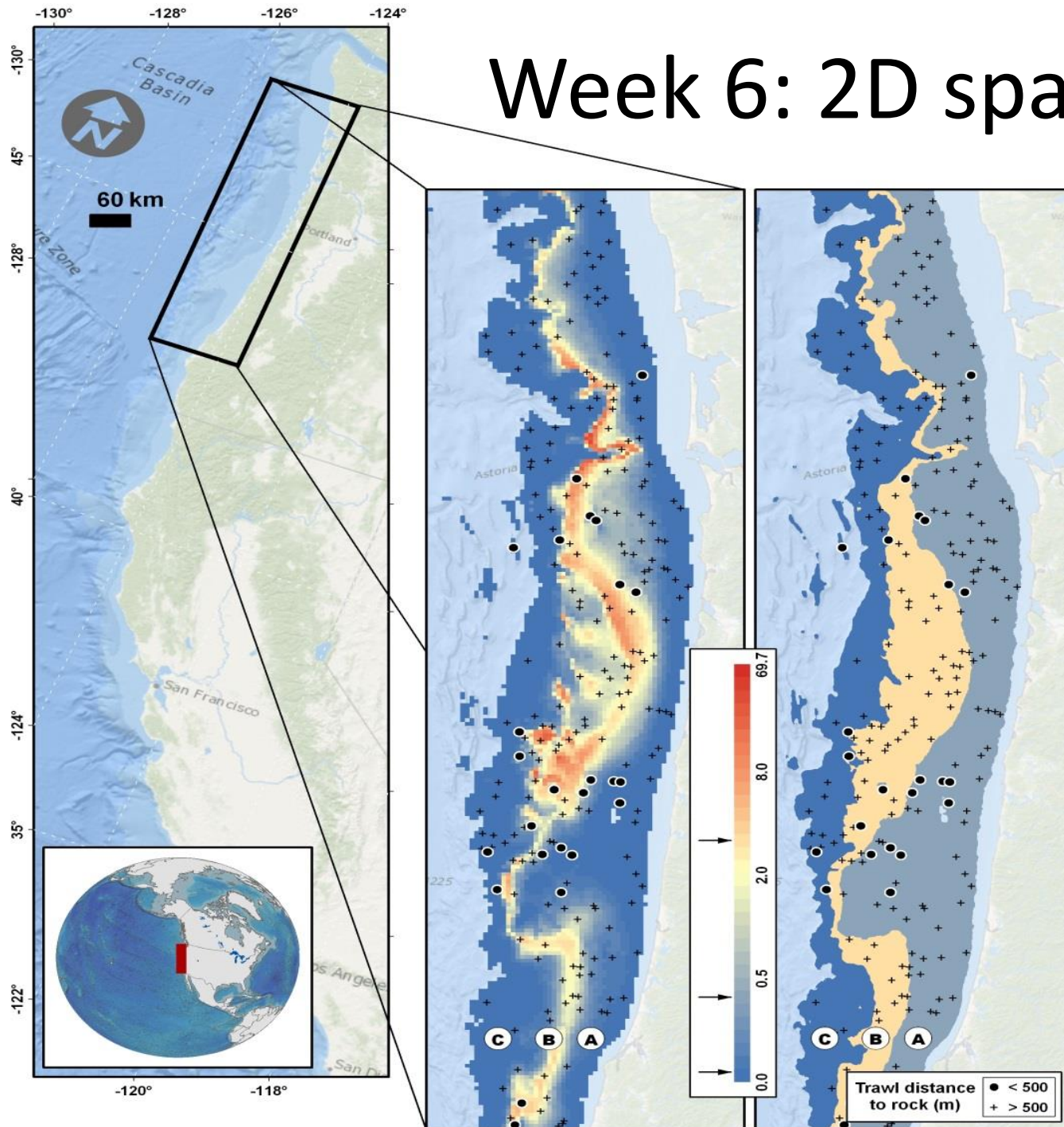


# Week 5

- 1-D spatial models and Gaussian Process



# Week 6: 2D space

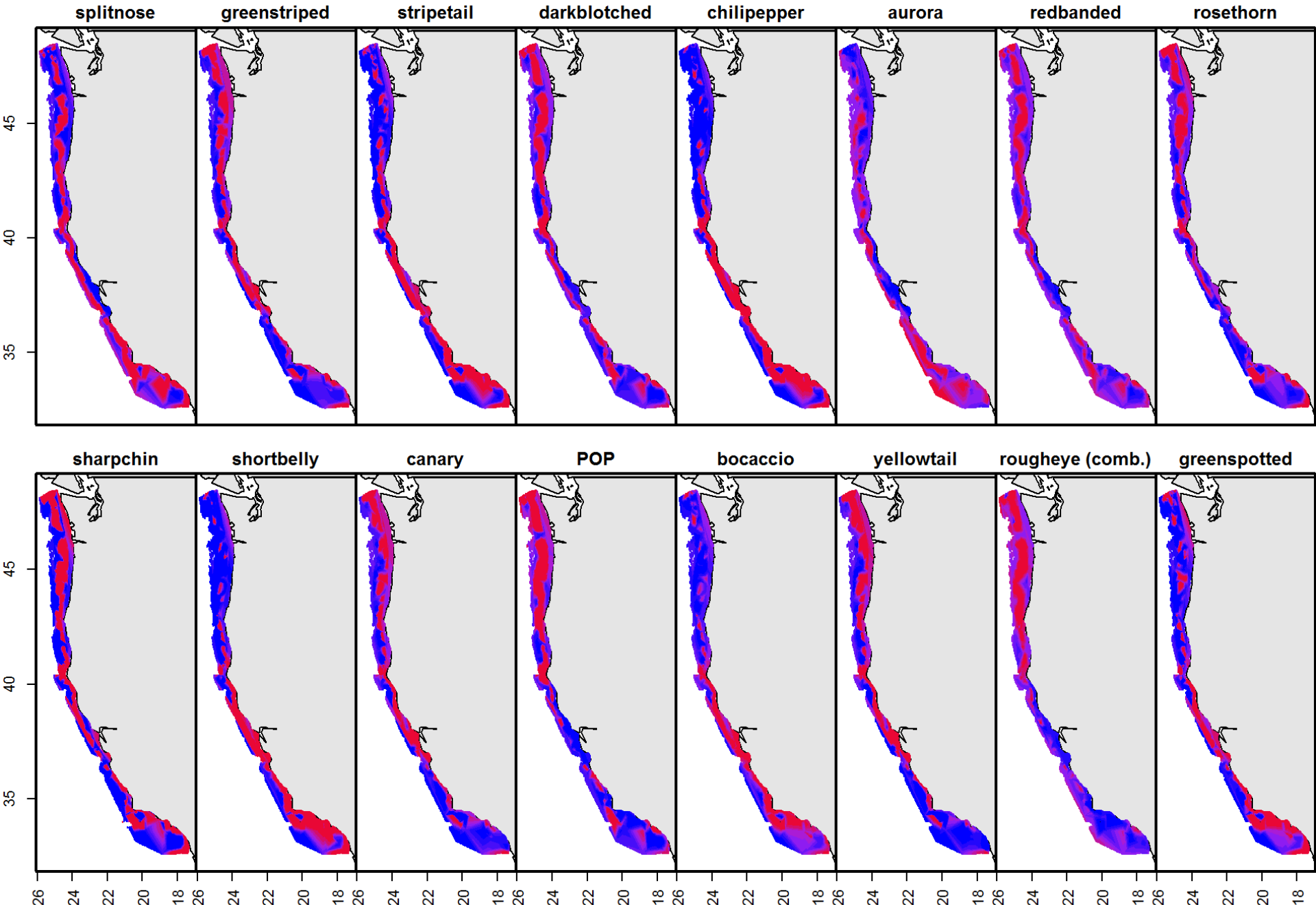






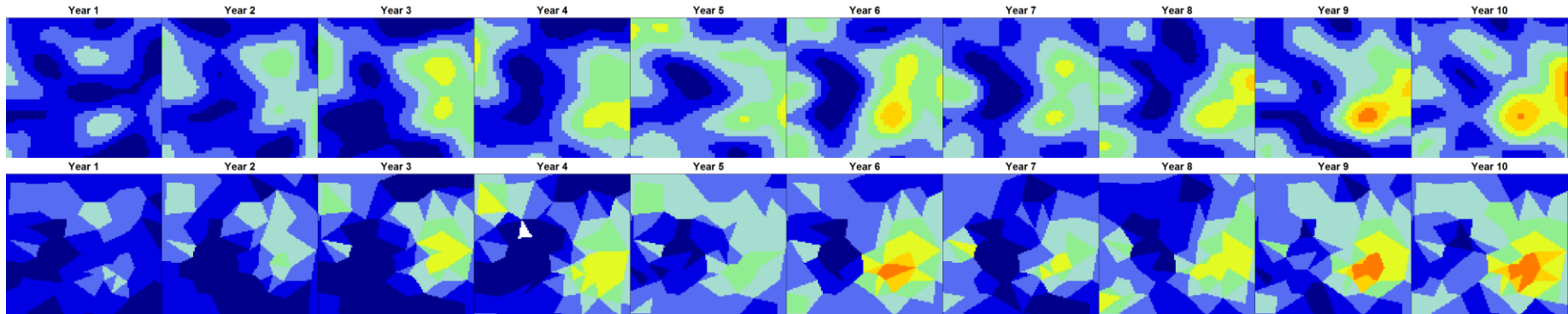


# Week 8: Multivariate



# Week 9: Movement

Est / True



Est / True

