

The mgcv package as a one-stop-shop for fitting non-linear ecological models

David L Miller, Eric Pedersen, and Gavin L Simpson

Good morning!

Logistics

- where is the coffee?
- where is the bathroom?
- what if there is a fire?

Who are we?

Eric Pedersen

- Population, community, and movement ecologist
- (sort of) Fisheries (sort of) ecologist
- Movement and life-history modelling
- Connecting theoretical models to data with statistics
- Unreasonably obsessed with smoothing and penalization as a solution to all of life's problems

Gavin Simpson

- (Palaeo)ecologist interested in community dynamics & environmental change
- (Palaeo)limnologist interested in environmental change
- Self-taught not-statistician
- Ecological stats software (vegan plus some palaeo stuff)
- To me most things are a model I can (will!) fit with *mgcv*

David L Miller

- Cetacean distribution modelling
- Spatial modelling (esp. model checking)
- Distance sampling distancesampling.org
- Statistical software (Distance, mrds, dsm)
- Trying to shoehorn all projects into mgcv

Who are you?

What is the structure of the day?

Timing

- 8am to 5pm
- Morning session: 8am-12pm
- Aternoon session: 1pm-5pm

(Approximate) schedule

| Time | Thing |
|-----------|-------------------------------|
| 0800-0815 | Intro |
| 0815-0945 | Generalized Additive Models |
| 0945-1000 | Coffee |
| 1000-1045 | Model checking |
| 1045-1130 | Model selection |
| 1130-1200 | Beyond the exponential family |
| 1200-1300 | Lunch |
| 1300-1700 | Extended examples/demos |

Foraging

Wifi