Welcome & landscape

David L Miller & Jason J Roberts

Welcome!

Who are we?

David L Miller (Dave)

- Research fellow, CREEM, University of St Andrews
- PhD with Simon Wood (author of `mgcv`)
- Worked on R distance sampling (software) since 2005
- Author/maintainer of `Distance`, `mrds`, `dsm`, `readst`, `mmds`

Jason Roberts

- Research associate, MGEL, Duke University
- Author of MGET toolbox for ArcGIS
- Taught numerous workshops on GIS

Who are you?

What is this course about?

What is this course about?

- Building practical spatial models using R and ArcGIS
- Getting data out of ArcGIS and into R
- Distance sampling detection functions
- Spatial modelling with GAMs
- Model checking
- Predictions and visualisation

What is this course not about?

- Basic statistics
- Basic R
- Basic ArcGIS
- Survey design
- “Advanced” techniques

Aim

Get you to be able to build, check and use DSMs

Schedule & landscape

1. Modelling detectability
2. Spatial data in ArcGIS
3. Spatial models in R (and how to check them)
4. Getting and using appropriate covariates
5. Making and visualising predictions

Daily schedule

- Can be found at:
  - distancesampling.org/workshops/duke-spatial-2015/
- Locations:
  - Classroom sessions: LSRC A158
  - Lab sessions: LSRC A153

- Starting 9am, finish 4:30pm.
- Wed and Fri we have the room longer
  - We will be around
- **Lunch** 12:15pm to 1:15pm

Course materials

- Slides/exercises/bibliography online
  - distancesampling.org/workshops/duke-spatial-2015/
  - updated during the week
  - everything will remain available

Asking questions

In real life

- Ask questions!
- Throw up you hand or yell :)

Online

- `etherpad` session at public.etherpad-mozilla.org/p/distance-duke-2015
  - wiki-ish document everyone can edit
  - (optionally) anonymous
- Ask questions/give feedback
- Request material for “special topics” (Friday)
- Useful material archived

Sticky notes

- At the end of each session
  - **Green**: one thing that went well
  - **Red**: one thing that went poorly
- Want to check how our teaching is going
- Need to expand on a topic?

Computers

Software

- We'll use ArcGIS and RStudio
- If you have your own copies make correct software is installed:
  - Instructions on course site
  - We can help (but want to prioritise teaching)
- Computer classroom already set up

Let’s get started…