

# Introduction to GIS with QGIS and R

## Day 1, Saturday 17 March 2018

- Introduction: open map, QGIS interface
- Working with GPS: import .csv/.gpx files & export to GPS
- Using external data sources: some useful Plugin (OpenLayers)
- Digitization
- Exporting data & projection conversion
- Working with attribute table: label, symbology, field calculator, import .dbf file & join table, select by expression

## Day 2, Sunday 18 March 2018

- Working with vector
  - o creating & editing (plus snapping)
  - o merging vector
  - o holes in holes (hole in polygon)
  - o clip & intersect
  - o buffer
  - o distance to ...
  - o grid points/grid lines
  - o Working with points: generate random points, extract values to points
  - o Geopackages

## Day 3, Monday 19 March 2018

- Georeferencing images
- Working with Raster
  - o Symbology
  - o Merging raster
  - o Data extraction
  - o Data transformation
  - o Terrain analysis (slope, aspect etc.)
  - o Raster calculator

## Day 4, Tuesday 20 March 2018

### **Break**

## Day 5, Wednesday 21 March 2018

- Producing map outputs
- Exercise (preparing data for R analysis):
  - o Prepare survey areas (land-use map)- Georeferencing and digitizing
  - o Create random points (cam-trap locations)
  - o Extract values to points (DEM, slope, land-use type, distance to xxx)
  - o Save as .csv formats
  - o Interpolation
  - o Heatmap

## Day 6, Thursday 22 March 2018

- Occupancy model (single-season)
  - o Occupancy in R
  - o GIS data preparation in R
  - o Create prediction map in R

## Day 7, Friday 23 March 2018

- GIS using R
- Question & answer with topics from participants.