



Introduction to Advanced GIS Virtual Training Course

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Greetings and acknowledgements

- Greetings from Associate Prof Naomi Cogger (Director) and EpiCentre staff
- Simon Verschaffelt (IT support)
- Previous course presenters:
 - Prof Mark Stevenson (U. of Melbourne), Dr Daan Vink (RVC, London)



GIS and animal health management

- Increasingly important tool for decision-making and communication in animal health management

OIE WORLD ORGANISATION FOR ANIMAL HEALTH
Protecting animals, preserving our future

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Reports Analytics EN ES FR

Immediate notification

African swine fever virus (inf. with), Russia

Outbreak locations have been provided by the relevant Veterinary Services and may not represent the exact location of an outbreak. OIE assumes no liability for the data displayed.

SENDER	Delegate of Russia
REPORT ID	IN_150806
REPORT REFERENCE	Tula_ASF
EVENT STATUS	On-going
SELF-DECLARATION	NO

[Download report](#) Expand all

General Information

Epidemiology

Training course objectives

- Strengthen animal disease surveillance and control in the SEA region by using GIS tools

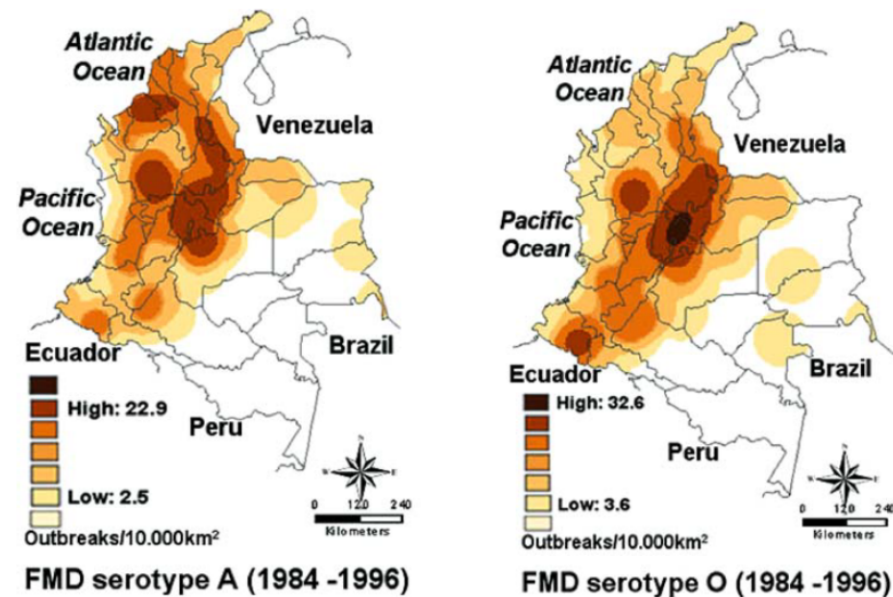


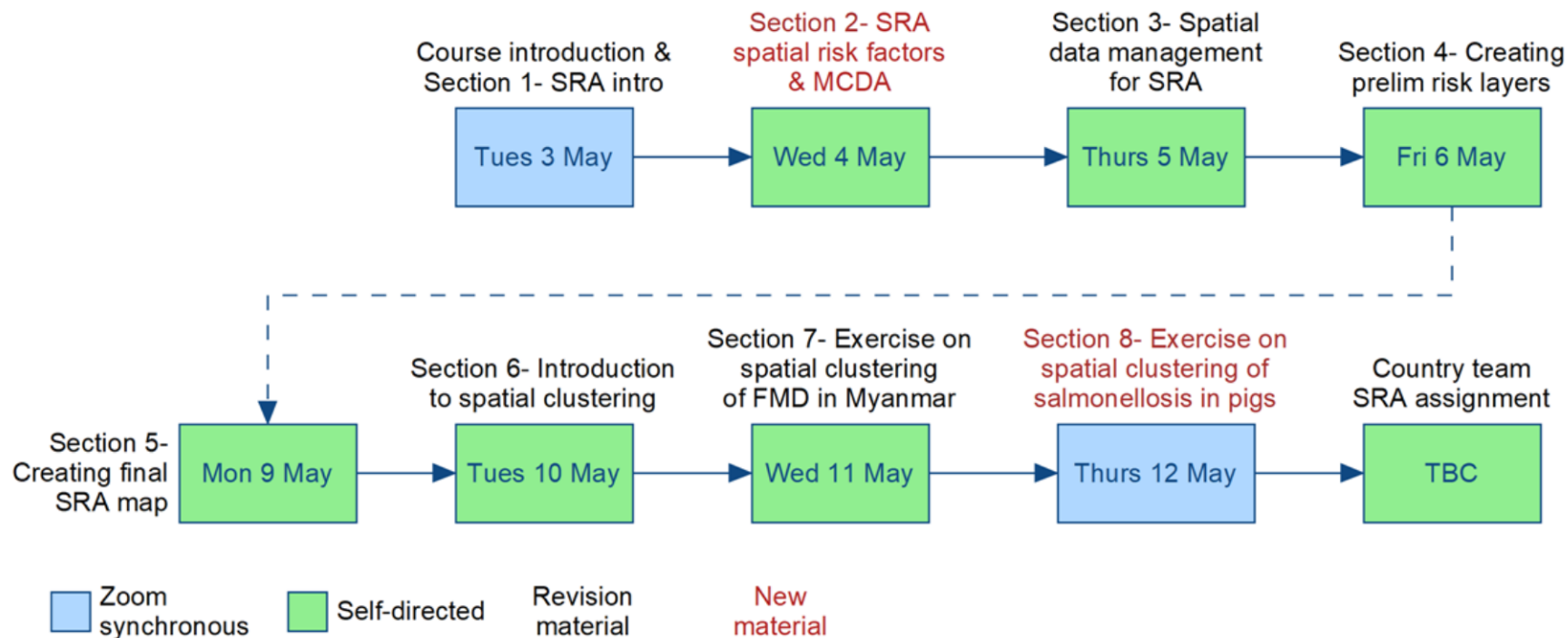
Figure 4. Spatial distribution of the geographic density (number of outbreaks/10 000 km² per year) of FMD serotypes A and O outbreaks recorded in Colombia between January 1984 and December 1996

From Gallego et al. 2017 Vet Res. Comm.

Objectives for participants

- By the end of the workshop participants should be able to apply:
 - Multi-criteria decision (MCDA) methods for spatial risk assessment (SRA)
 - GIS methods to use results of MCDA to create SRA maps
 - Cluster analysis methods for detection of spatial disease clusters
 - Methods from open-source GIS and analysis software applications QGIS & SatScan

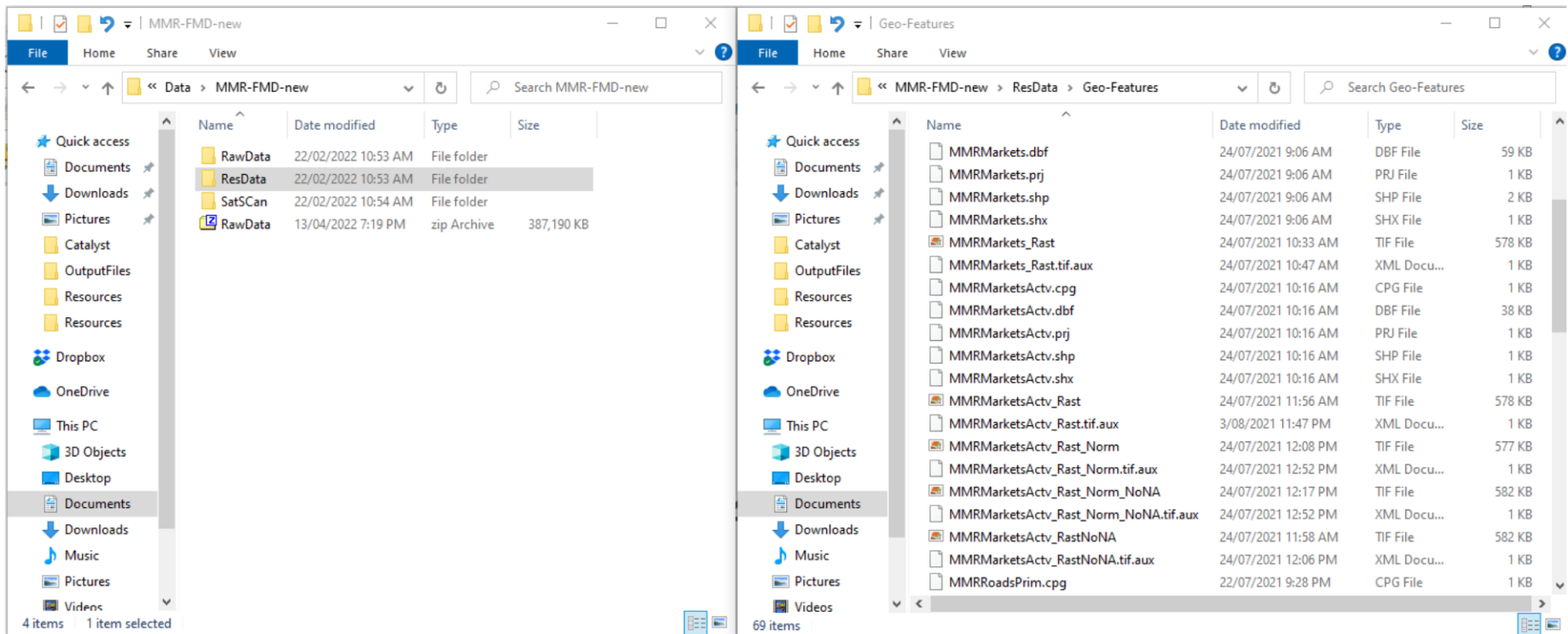
Overall course structure



General advice on use of GIS for animal health management

Be organised (1)

- GIS methods often use many files
- Create file folder structure that is logical and usable
- Name newly-created files in a logical, consistent way



Be organised (2)

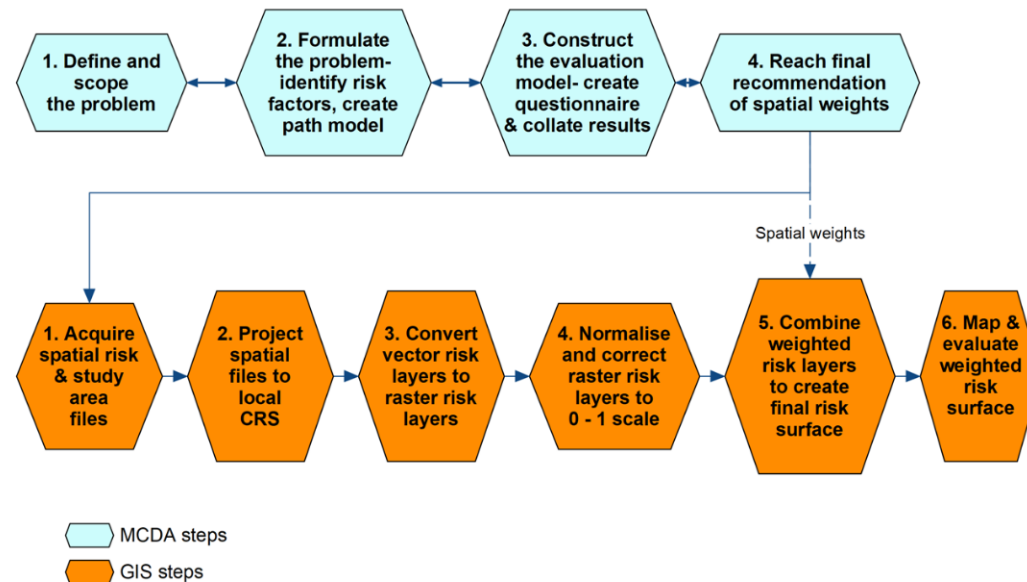
- Use software tools and suggested set-up to organise your project
 - QGIS: “Project”
 - SaTScan: “Session”
 - Easy to restart where you left it last
- Keep your QGIS desktop tidy
 - Display only the map layers you immediately need
 - Remove unnecessary layers from layers pane
- Save information that you will need
 - Rename and save temporary files
 - Save the QGIS project and SaTScan session before exiting application

Check or view your data

- Applies to both raw and newly-created data
- **Find errors early**
- Questions to ask:
 - Does the data make sense?
 - Are there obvious errors or missing data?
 - Are the coordinate reference systems consistent and appropriate?
 - Are there geographic features that might be important in the analysis?
 - What geographic patterns are apparent
 - Globally (across whole study region)?
 - Locally (in different areas within study region)?

Keep the 'big picture' in mind

- Outline the ordered steps you need to take to complete the analysis
- Start with the end in mind and work backwards



Spatial risk assessment steps

Final words

- GIS and spatial data analysis is hard...
 - Requires practice and willingness to (fail and) learn
 - Google search is invaluable!
 - Your fellow workers and teachers are here to support you
- **Best wishes!**