Chapter 3 summary

Aim: use genetic data, land cover data to create phylogeographic model of CDV spread in NC 2019-2021

* How does human activity and land use influence the dynamics of CDV within the south-eastern mesocarnivore system?

Data:

N=20 partial CDV H-gene isolates from NC from 2019-2021

Lat-long coordinates for each isolate, host species and date of collection

2019 land cover data for each coordinate

1)phylogenetic reconstruction of isolates

2)continuous phylogeographic analysis

3)assess impact of environmental factors (land cover) on dispersal

[Using phylogeographic approaches to analyse the dispersal history, velocity and direction of viral lineages — Application to rabies virus spread in Iran - Dellicour - 2019 - Molecular Ecology - Wiley Online Library](https://onlinelibrary.wiley.com/doi/10.1111/mec.15222)

[Two waves of canine distemper virus showing different spatio-temporal dynamics in Alpine wildlife (2006–2018) - ScienceDirect](https://www.sciencedirect.com/science/article/pii/S1567134820301908?via%3Dihub#f0020)

[Explaining the geographic spread of emerging epidemics: a framework for comparing viral phylogenies and environmental landscape data | BMC Bioinformatics | Full Text (biomedcentral.com)](https://bmcbioinformatics.biomedcentral.com/articles/10.1186/s12859-016-0924-x)

CHAPTER 3 paln B

1. Discuss data, basic outline
2. Discuss labwork
3. Phylogeny in context
4. Larger data set-prevalence, GLM with environmental variables

**Canine distemper virus in wildlife in south-western Europe (Oleaga et al. 2021)**

# Landscape Structures Affect Risk of Canine Distemper in Urban Wildlife

**(Gras et al. 2018)**

GRAS, P., S. KNUTH, K. BÖRNER, L. MARESCOT, S. BENHAIEM, A. AUE, U. WITTSTATT, B. KLEINSCHMIT, ANDS. KRAMER-SCHADT. 2018. Landscape Structures Affect Risk of Canine Distemper in Urban Wildlife. Frontiers in Ecology and Evolution 6.

OLEAGA, A., C. B. VAZQUEZ, L. J. ROYO, T. D. BARRAL, D. BONNAIRE, J. A. ARMENTEROS, B. RABANAL, C. GORTAZAR, ANDA. BALSEIRO. 2021. Canine distemper virus in wildlife in south-western Europe. Transbound Emerg Dis.