

Butterfly Monitoring of Switzerland

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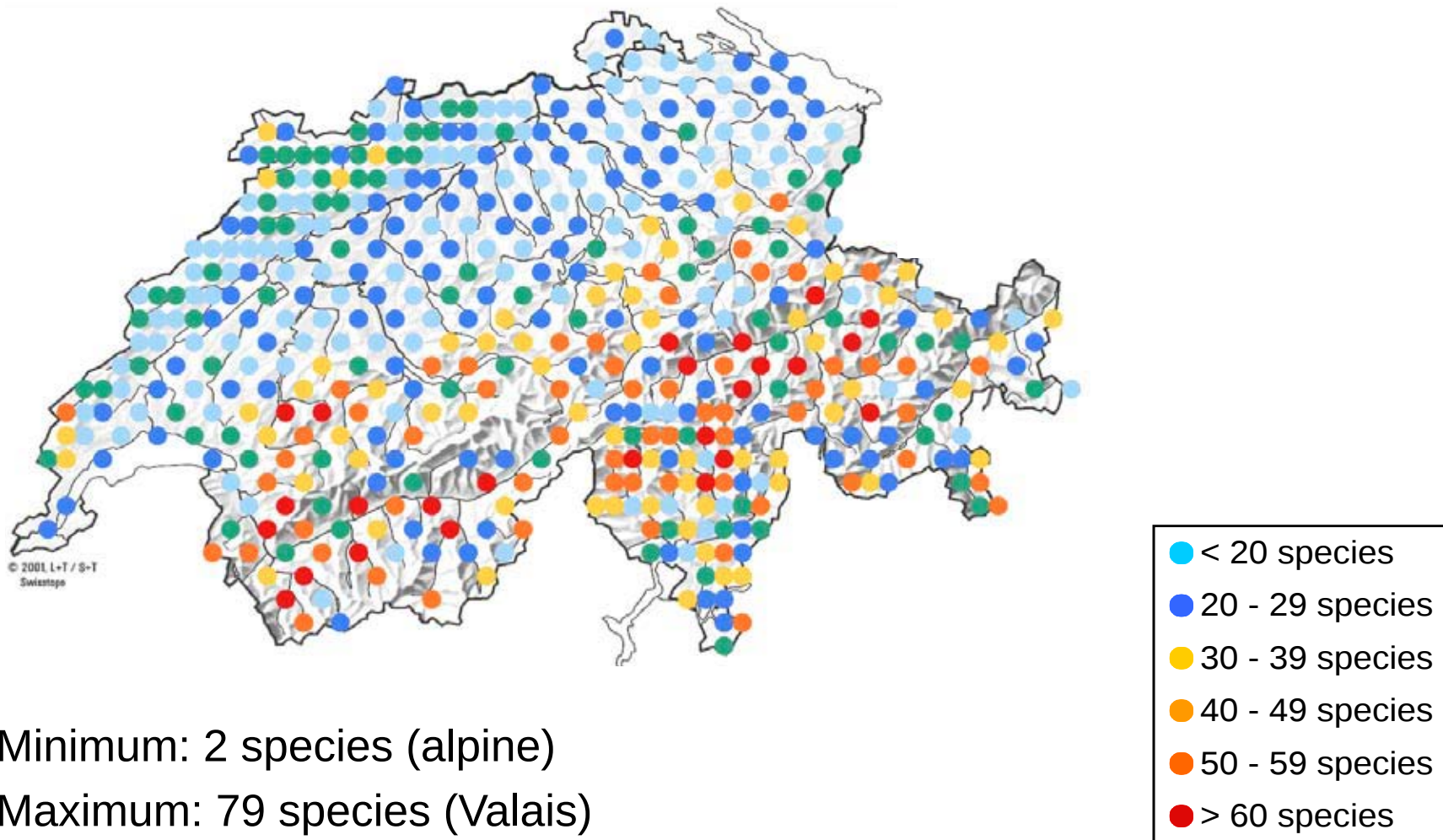
Future of Butterflies in Europe III, Wageningen, 28-31 March 2012

Butterfly programme 2003 - 2011

- systematic random sampling
- 520 sampling squares of 1km²
- 2.5 km-transects
- 7 surveys per year (4 in alpine transects)
- Counts back and forth
- Species richness
- Team of contractors



Results 2006-2010: Species richness



Minimum: 2 species (alpine)

Maximum: 79 species (Valais)

Results 2006-2010: Species richness

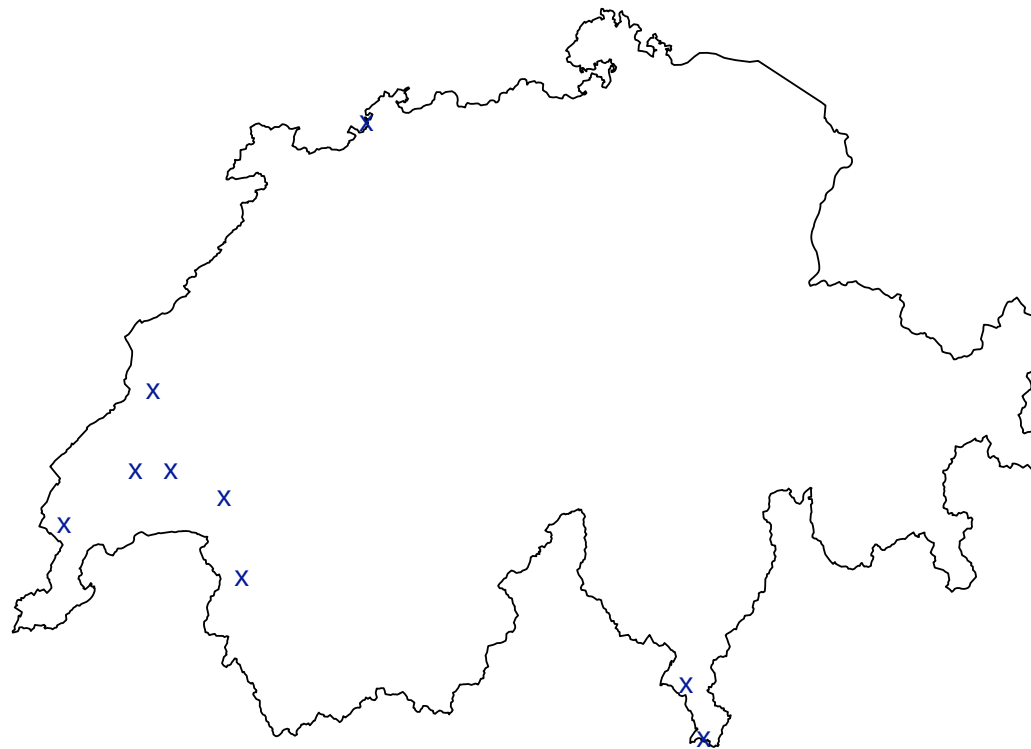


Mean number of species per transect = 32.3

No trends in change of species richness so far.

Expansion of species

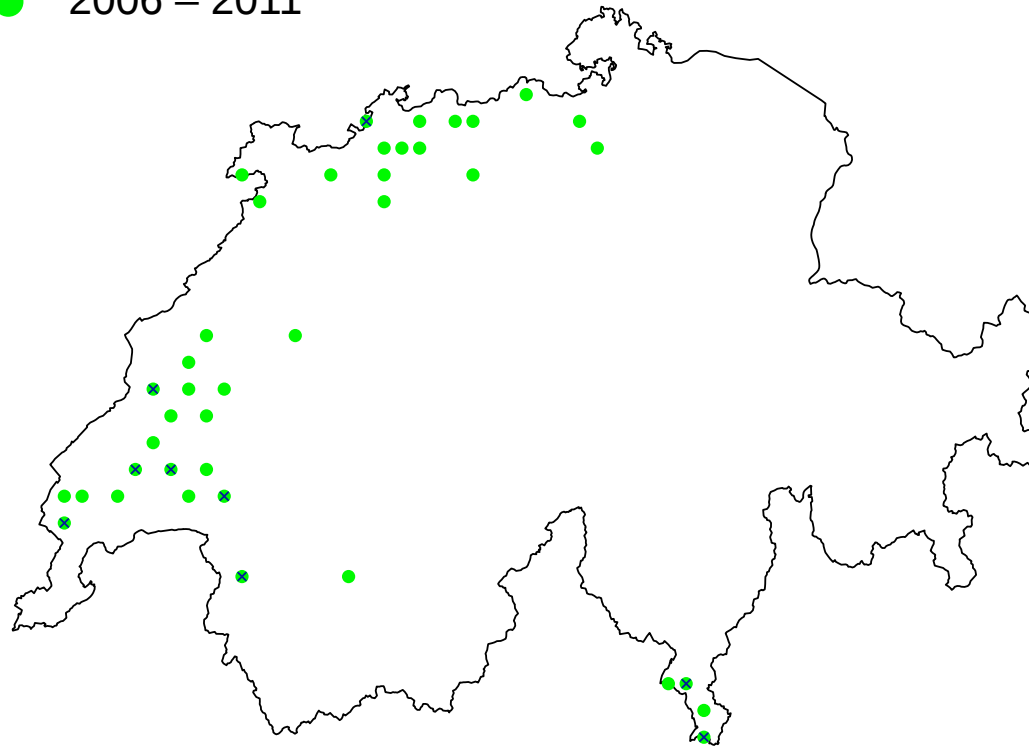
x 2003 – 2005



Cupido argiades

Expansion of species

x 2003 – 2005
● 2006 – 2011



Cupido argiades

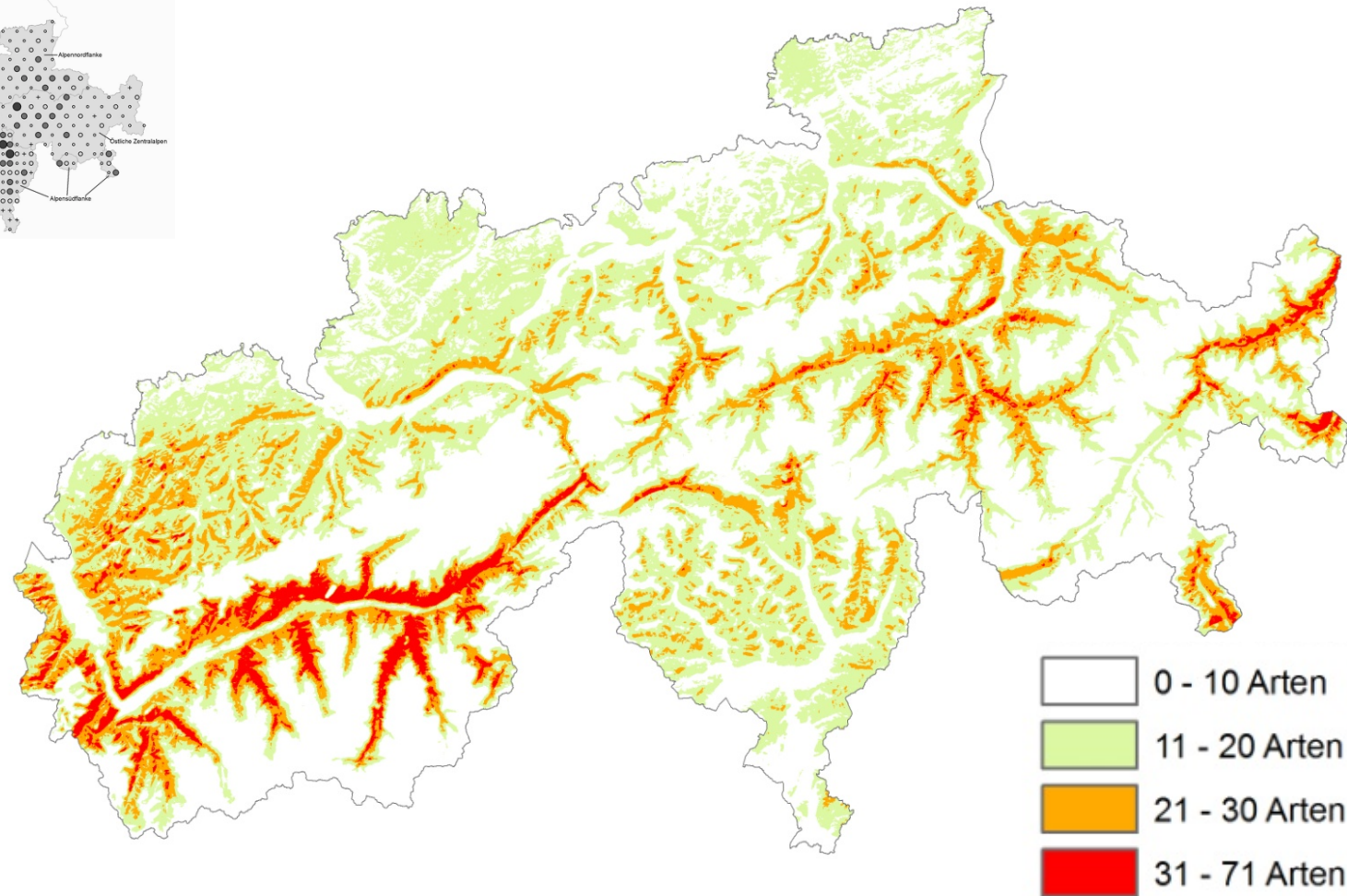
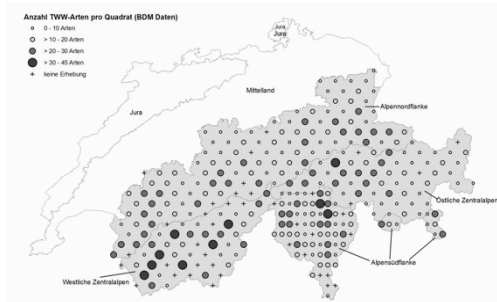
Predicting Species Hotspots

Simone Graute

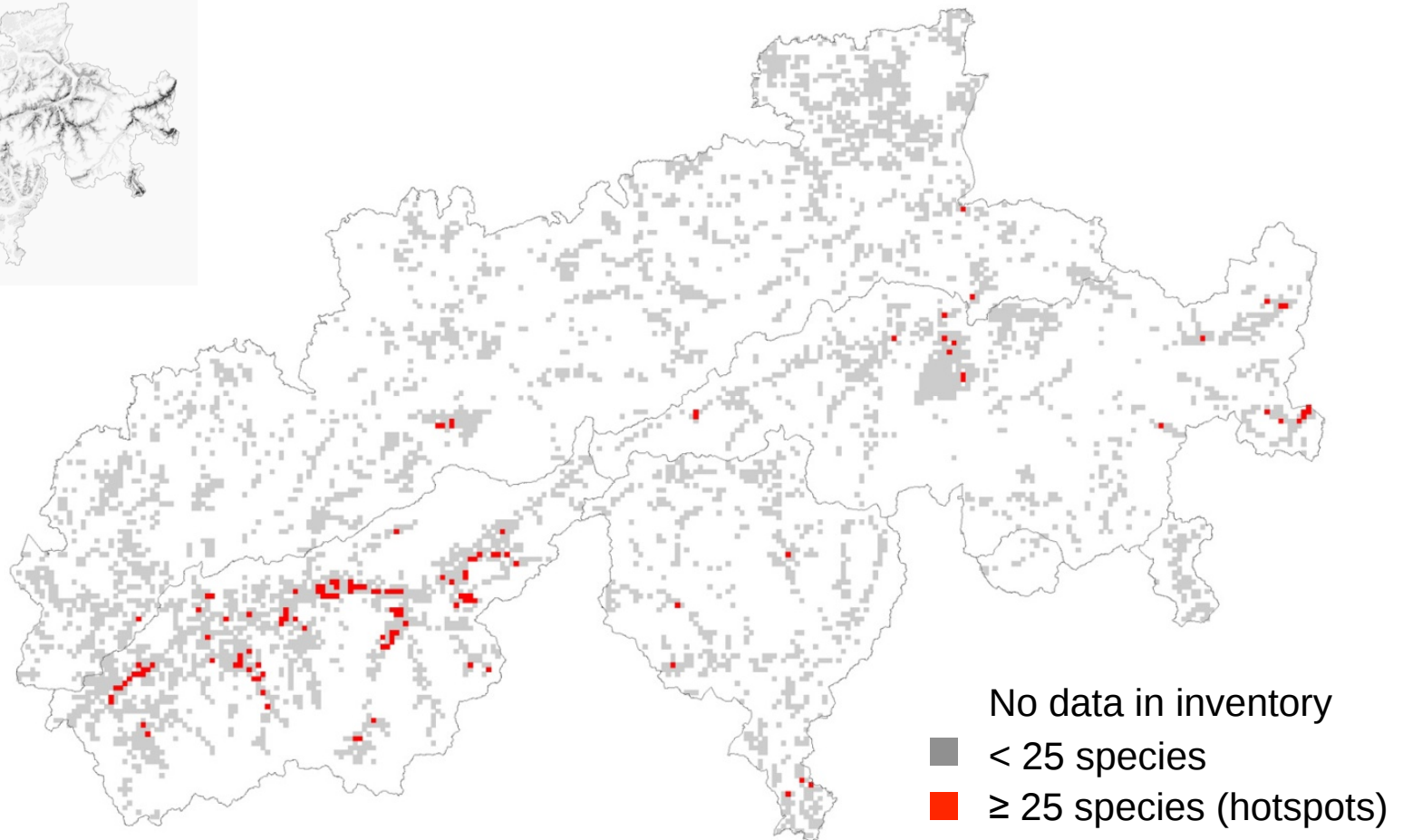
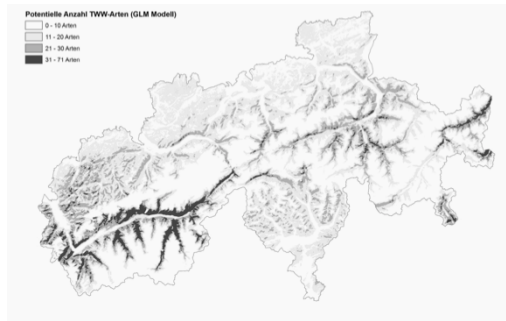


1. Modelling species richness

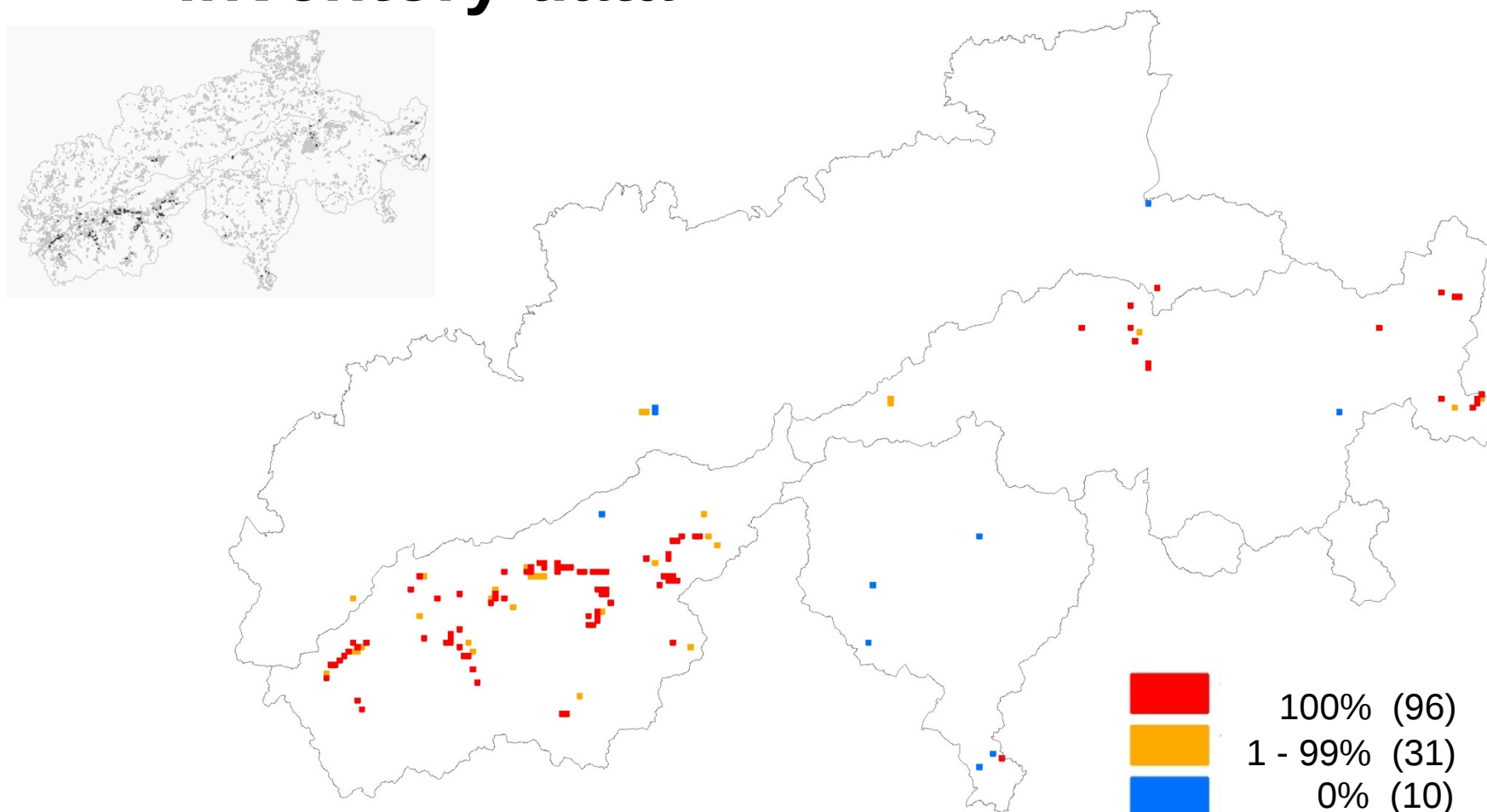
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2. Testing with independent inventory data



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Tracking Climate Change

Tobias Roth



Temperature index

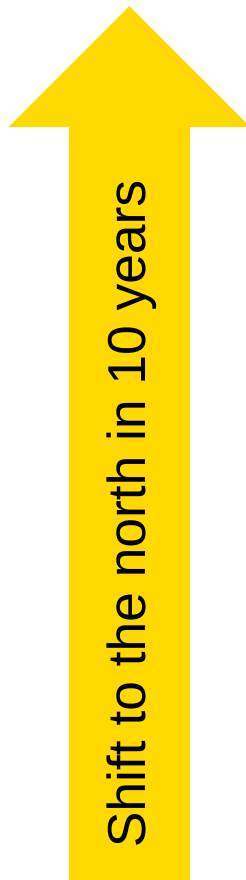
- Species Temperature Index (STI)
- Mean of all STI on a transect
→ Community Temperature Index (CTI)
- Devictor *et al.* 2008



Results

	N	Trend	SE	p-Wert	Periode
	370	0.0078 ↗	±0.0035	p=0.026	2003-10
	456	0.0082 ↗	±0.0030	p=0.006	2001-10
	421	0.0024 ↗	±0.0007	p<0.001	2001-10

Comparison with other studies



~150 km: **temperature** Devictor *et al.* 2008

~ 55 km: **butterflies (Switzerland)** Swiss monitoring

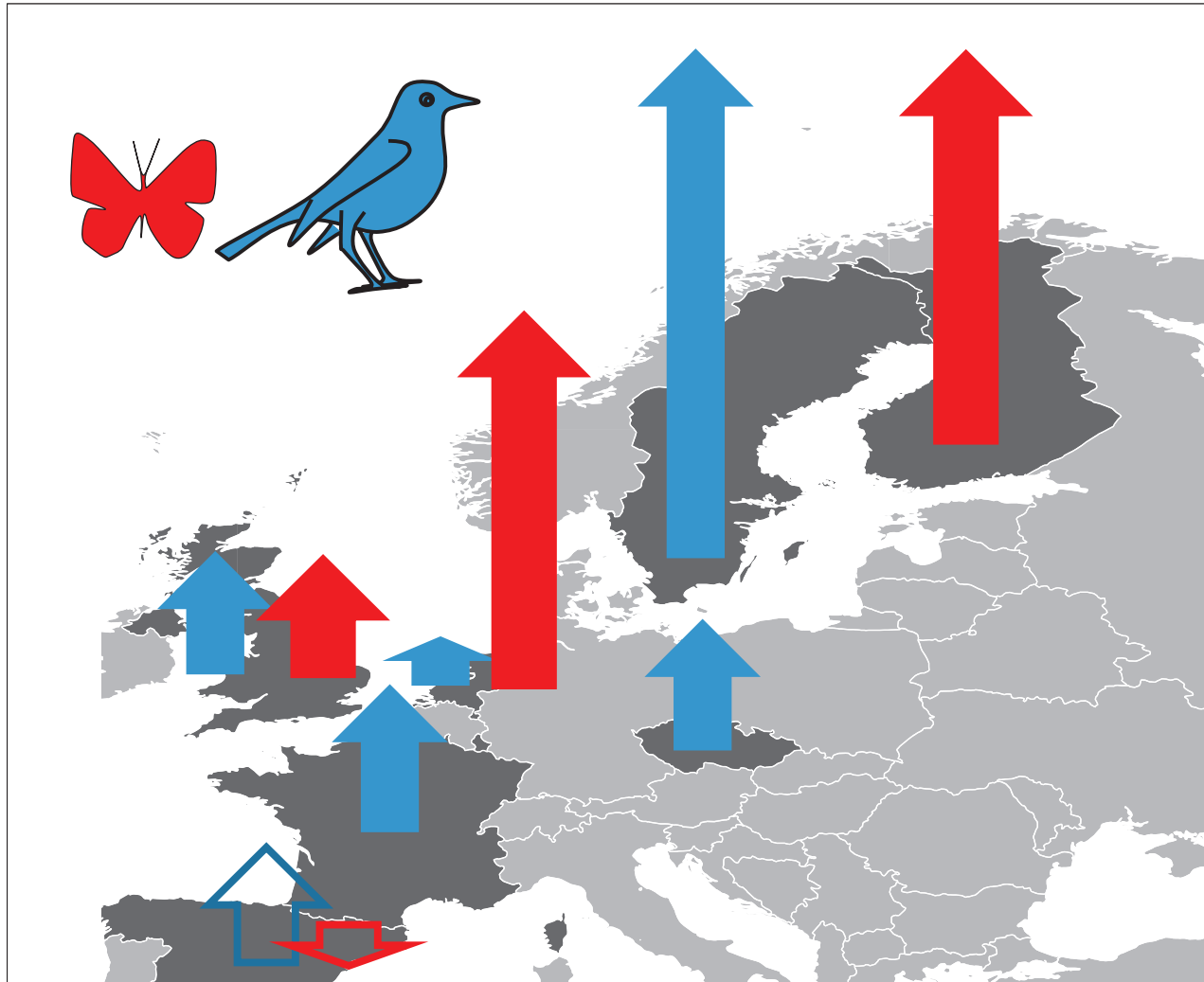
~ 50 km: **birds (France)** Devictor *et al.* 2008

~ 45 km: **birds (Switzerland)** Swiss monitoring

~ 40 km: **butterflies (Europe)** Van Swaay *et al.* 2010

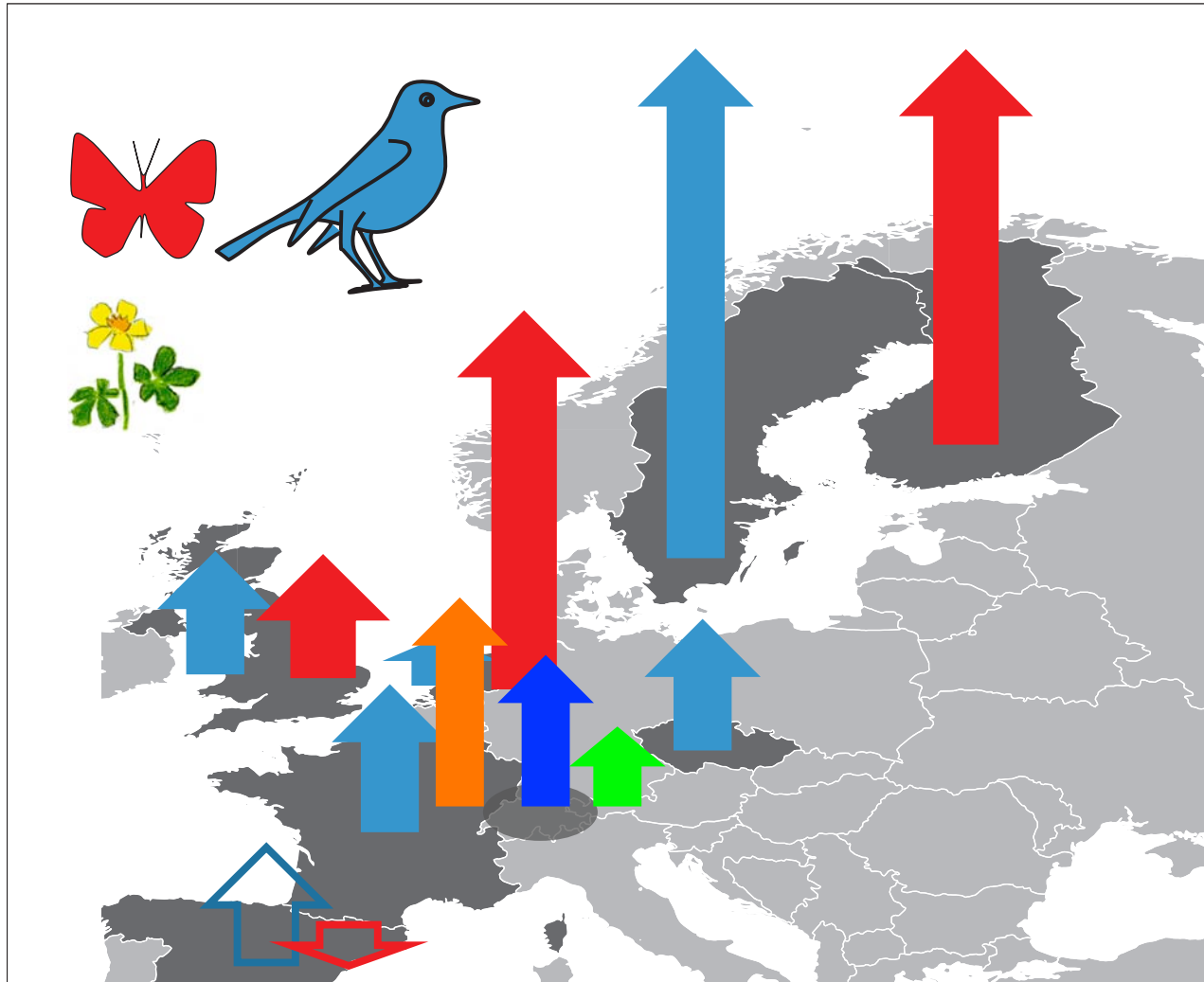
~ 15 km: **plants (Switzerland)** Swiss monitoring

Temperature index



Devictor *et al.* (2012)

Temperature index



Devictor *et al.* (2012)

Conclusions

- No trend for changes in species richness detectable.
- The modelling of hotspots showed that we can make statements relevant for the whole area.
- With our data we can follow the process of climate change and contribute plant data.



Thank you for your attention!

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