

# Geovisualization Tools Applied to Landscape Genetics

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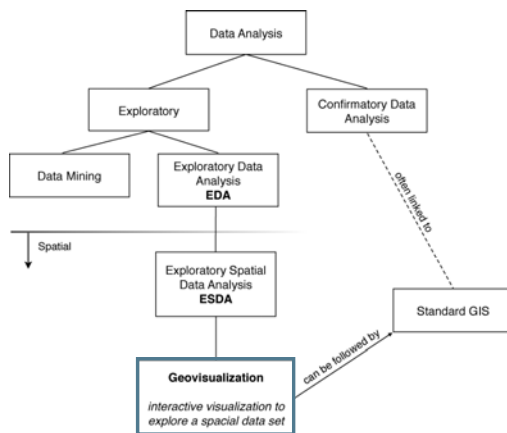
## Overview

- Goal
- Geovisualization
- Software
- Application
- Conclusion

# Goal

- Capacities of Geovisualization
- Context:
  - Genetic goat breed data
  - Environmental data

# Geovisualization

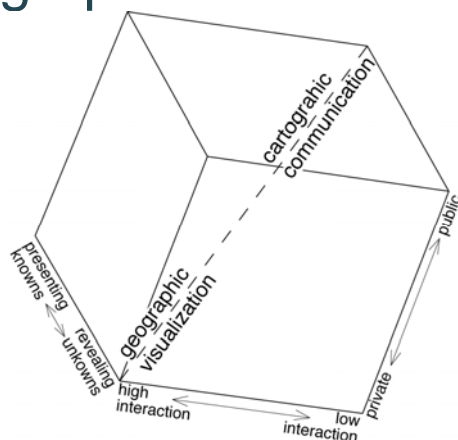


- Geographic
- Visualization
- User interactivity

## Geovisualization vs. GIS

- Exploratory
- You know what you are seeing
- First, short glimpse
- Confirmatory
- You know what you are doing
- Data management

## Geovisualization vs. Cartographic Communication



(after McEachren 1995, p.357 / Fig PIII.1.)

## Software

- CommonGIS
- GeoDa
- GeoWizard Lite
- GeoVista Studio
- ESTAT
- GeoViz Toolkit

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	Weight	CommonGIS	GeoDA	GeoViz Toolkit
Manipulating data	1	3	2	1
<b>Varying symbolisation</b>	<b>2</b>	3	1	2
Manipulating the user's viewpoint	1	2	1	3
<b>Highlighting portions of a data</b>	<b>2</b>	3	2	3
Multiple views	1	2	2	2
Animation	1	2	2	2
Linking maps with other forms of display	1	2	2	3
Access to miscellaneous resources	1	3	2	1
Automatic map interpretation	1	1	1	1
<b>Interactivity</b>	<b>2</b>	1	2	3
User-friendly design	1	1	2	2
Documentation	1	3	3	1
<b>Total (max. 45)</b>		<b>33</b>	<b>27</b>	<b>32</b>

## Application

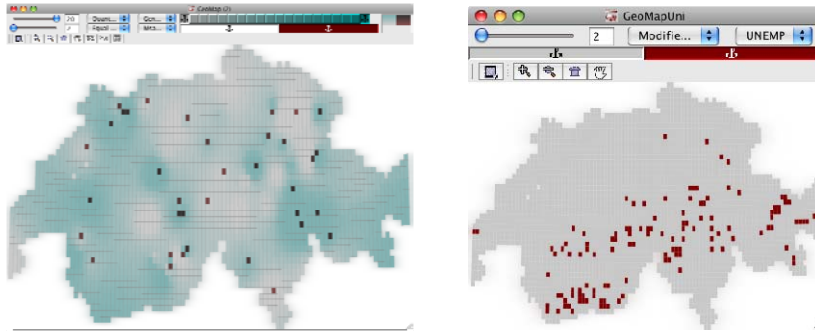
### Goal

- Environmental influences on genetic diversity

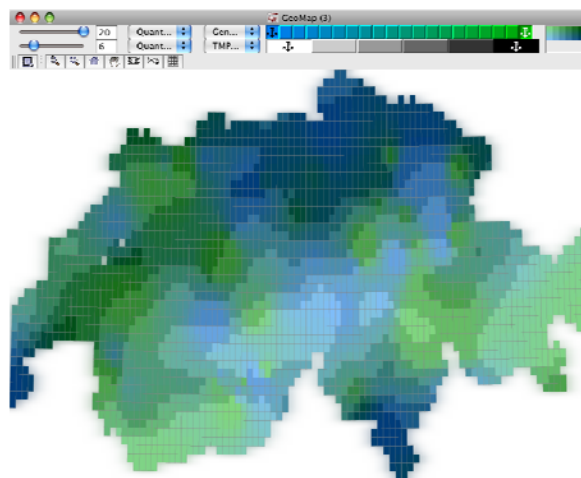
### Data

- 4 km<sup>2</sup> Grid
- Interpolated genetic diversity
- Interpolated environmental data

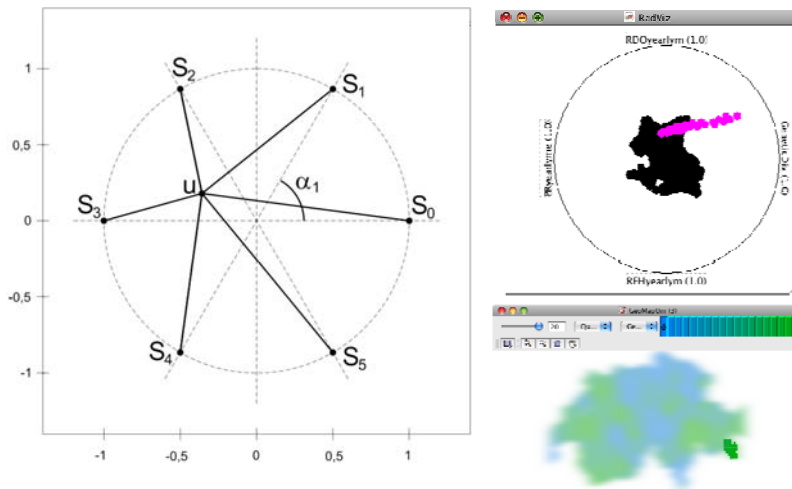
## Checking the data set



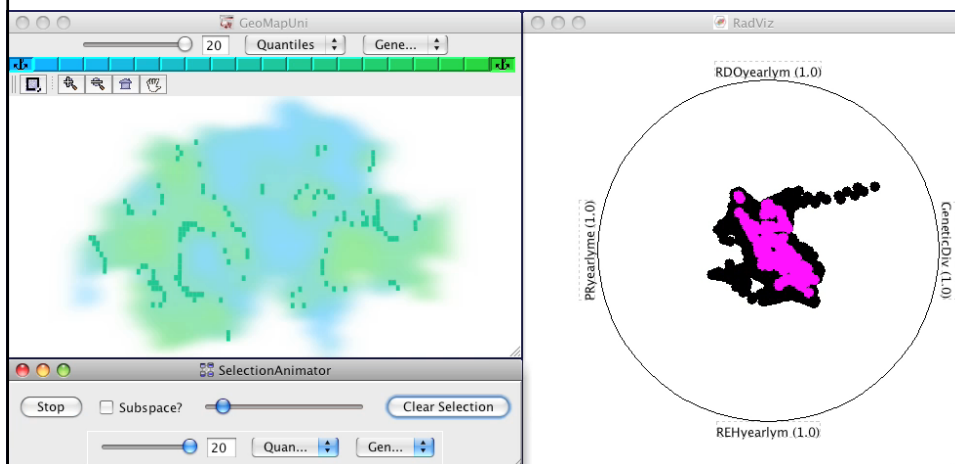
## Choroplete map



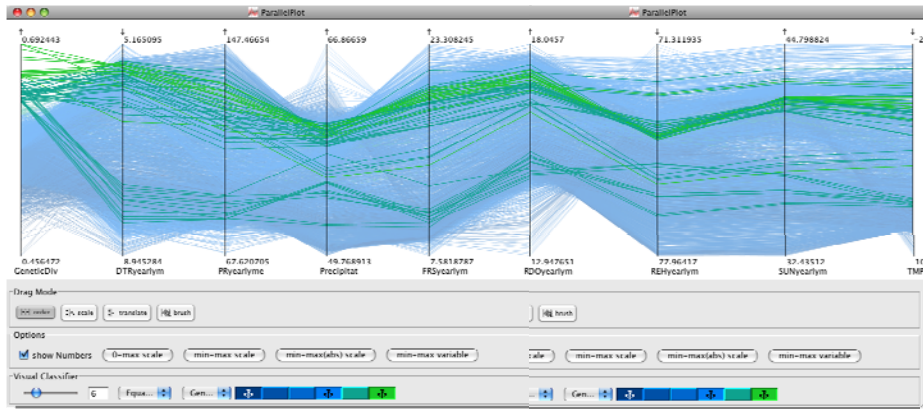
# RadViz



# SelectionAnimator



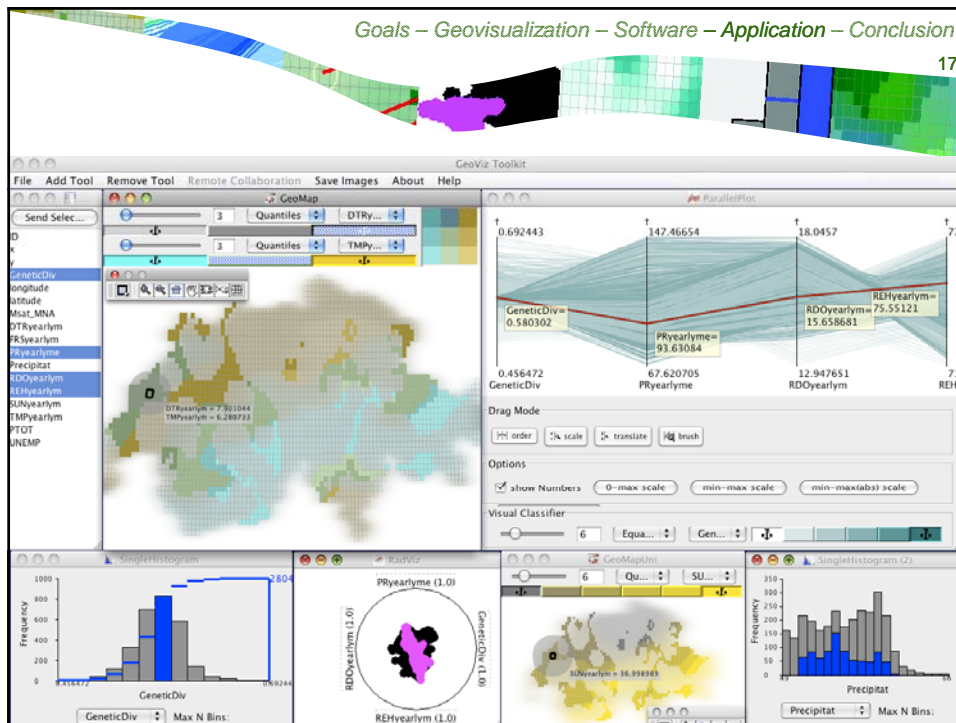
# ParallelPlot



# Application

- Demonstration





Goals – Geovisualization – Software – Application – Conclusion

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## Hypotheses

A relative high genetic diversity needs

- relative high values for mean precipitation, variation of precipitation, ground frost days, rain days and percent of maximum possible sunshine
- relative low values for mean temperature, diurnal temperature range and relative humidity

## Conclusion

- Geovisualization helps to get a first impression of the data
- Knowing the tools is important (Know what you see)
- Geovisualization and GIS

Thanks for your attention

Merci pour votre attention

Danke für Ihre Aufmerksamkeit

