



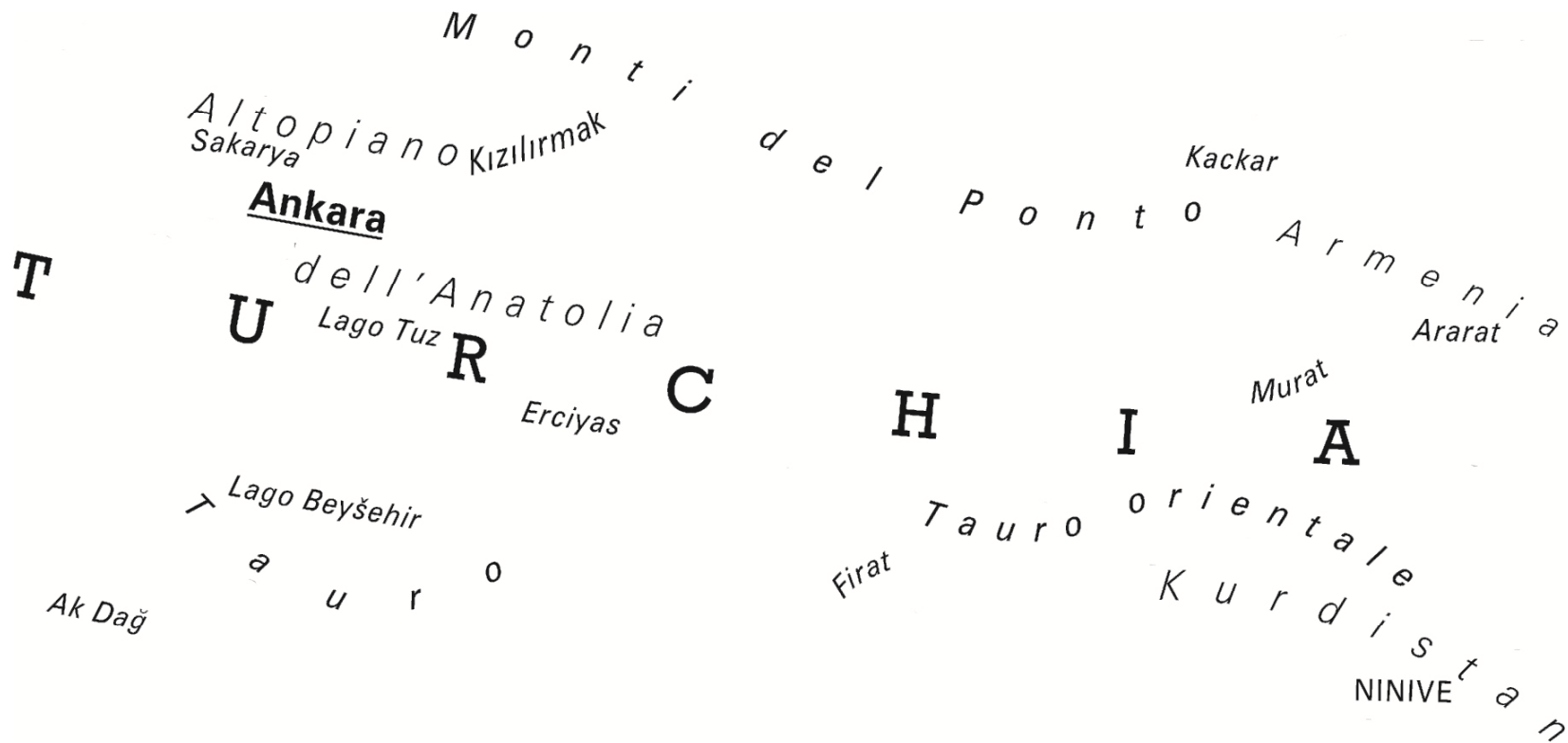
Institut für Kartographie und Geoinformatik | Leibniz Universität Hannover

# Spatial delineation of geographic objects using an online knowledge repository

Tobias Dahinden



# Purpose



(Spiess, 2002)

# Overview

- ▶ Spatial delineation of vague places
- ▶ Structures in Wikipedia
  - Coordinates
- ▶ Localisation of Geographic Objects in Wikipedia
- ▶ Range Estimation
  - Relationship Between Point Sets
- ▶ Résumé



## Spatial delineation of vague places

# Common methods

- ▶ Definition by an Agency or a Specialist
  - Landschaften Bundesrepublik Deutschland (Liedkte, 2002)
  - Mitteleuropa (Jordan, 2005)

# Common methods

## ▶ Empirical methods

- Where's Downtown (Montello et al., 2003)
- Neighbourhood Cognition (Davies, 2009; Clough/Pasley, 2010)

# Common methods

## ▶ Internet search

- Google search (Jones et al., 2008; Waters/Evans, 2010)
  - Internetsuche + Ortsnamendatenbank + NER/NLP
- Wikipedia, Flickr, Google Places, GeoRSS, Twitter
  - Gazetteer
  - Flickr (Holenstein/Purves, 2010)



# Structures in Wikipedia



# Structures

## ► Wikipedia Article

(Wikipedia)

The screenshot shows the Wikipedia article for 'Leine'. The article text describes the river's course through Thuringia and Lower Saxony, Germany, mentioning its source near Nordstemmen and its confluence with the Aller river. It also notes the river's historical use for barge transportation and its current status as a recreational spot for fishing. A sidebar on the left provides navigation options like 'Main page', 'Contents', and 'Languages'. A right sidebar contains a photo of the river in Hanover and a table with details: Origin (Thuringia), Mouth (Aller), Basin countries (Germany), and Length (281 km). Below the article is a 'Sources' section with two references and an 'External links' section with two links to German nature conservation sites. At the bottom, there is a 'Leine basin' table listing first, second, third, and fifth order streams, as well as lakes, moors, and springs. The page footer indicates it was last modified on 1 March 2011.



# Structures

## ► Unique Title

The screenshot shows the Wikipedia article for 'Leine'. The article title 'Leine' is highlighted in yellow. The main text describes the river's course through Thuringia and Lower Saxony, Germany, and its length of 281 km. It mentions tributaries like the Aller river and the Weser river. A photograph shows the river near Nordstemmen. A sidebar on the right contains a photo of the river in Hanover and a table with details: Origin (Thuringia), Mouth (Aller), Basin countries (Germany), and Length (281 km). Below the main text, there are sections for 'Sources' and 'External links'. At the bottom, there is a table titled 'Leine basin' listing first, second, third, and fifth order streams, as well as lakes, moors, and springs. The page footer indicates it was last modified on 1 March 2011 at 16:37.

**Leine**  
From Wikipedia, the free encyclopedia

The **Leine** is a river in Thuringia and Lower Saxony, Germany. It is a left tributary of the Aller river (and so of the Weser river as well) and 281 km in length.

The river's source is located close to the town of Leinefelde in Thuringia. Forty kilometers downstream, the river enters Lower Saxony and runs northwards. Important towns upstream to down along its course are Göttingen, Einbeck, Alfeld and Gronau, before the river enters Hanover, the largest city on its banks. Downstream some forty kilometers north of Hanover, near Schwarmstedt, the river joins the Aller and reaches the North Sea via the Weser connecting to and flowing north past both the oceanic seaports of Hanseatic Bremen and the much newer but equally important city of Bremerhaven. Although the river occasionally over-floods its banks, damage is usually nominal. Only in its northern (lower) reaches is it navigable by today's smallest commercial carriers, though in the past it served as an important pre-railway barge transportation artery as far up river as Göttingen.

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At at least one point (Göttingen) the river is partially diverted into a canal that runs more or less parallel to the river.

In his 1986 bestseller *Red Storm Rising*, author Tom Clancy uses the Leine as a major obstacle to the Soviet Union's Red Army in its drive to the Rhine River and the North Sea ports of the Netherlands and Belgium through West Germany.

**Sources**

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**External links**

- Bundesamt für Naturschutz: Landschaftssteckbrief "Leine-Ilme-Senke"
- Bundesamt für Naturschutz: Landschaftssteckbrief "Leine-Niederung"

**Leine basin** [hide]

<b>First order streams</b>	Garte • Grindau • Ilme • Ilme • Innerste • Lutter • Rhume
<b>Second order streams</b>	Grane • Nette • Oder • Söse
<b>Third order streams</b>	Apenke • Eipenke • Lutter • Oспенke • Sieber • Sperrlutter
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<b>Lakes</b>	Silberteich
<b>Moors</b>	Teufelsbäder
<b>Springs</b>	Rhume Spring • Teufelsloch

Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony

This page was last modified on 1 March 2011 at 16:37.

# Structures

## ► Some Text

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<b>Springs</b>	Rhume Spring • Teufelsloch

Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony

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# Structures

## ► Internal and External Links

The screenshot shows the Wikipedia article for 'Leine'. The article text describes the river's course through Thuringia and Lower Saxony, Germany, mentioning its source near Göttingen and its confluence with the Aller river. It also notes the river's historical use for barge transportation and its current status as a recreational spot for fishing. A sidebar on the left provides navigation options like 'Main page', 'Contents', and 'Languages'. A right sidebar contains a photo of the river in Hanover and a table with details: Origin (Thuringia), Mouth (Aller), Basin countries (Germany), and Length (281 km). Below the article is a 'Sources' section with two references and an 'External links' section with two links to German nature conservation sites. At the bottom, there is a 'Leine basin' table listing first, second, third, and fifth order streams, as well as lakes, moors, and springs. The page footer indicates it was last modified on 1 March 2011.

Origin	Thuringia
Mouth	Aller
Basin countries	Germany
Length	281 km

Leine basin	
<b>First order streams</b>	Garte • Grindau • Ihme • Ilme • Innerste • Lutter • Rhume
<b>Second order streams</b>	Grane • Nette • Oder • Söse
<b>Third order streams</b>	Apenke • Eipenke • Lutter • Oспенke • Sieber • Sperrlutter
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<b>Springs</b>	Rhume Spring • Teufelsloch



# Structures

## ► Navi-Blocks

The screenshot shows the Wikipedia article for 'Leine'. It includes a sidebar with navigation options like 'Main page', 'Contents', and 'Languages'. The main content area features a title 'Leine', a summary, a main text block with an image of the river near Nordstemmen, and a detailed infobox on the right. The infobox lists 'Origin' (Thuringia), 'Mouth' (Aller), 'Basin countries' (Germany), and 'Length' (281 km). Below the main text is a 'Sources' section with two entries, followed by 'External links' and a 'Leine basin' table. The table lists streams of different orders and other features like lakes, moors, and springs. At the bottom, there are categories and a timestamp: 'This page was last modified on 1 March 2011 at 16:37.'



# Structures

## ► Categories

The screenshot shows the Wikipedia article for 'Leine'. The article text describes the river's course through Thuringia and Lower Saxony, Germany, mentioning its tributaries and the cities of Göttingen and Hanover. It also notes the river's historical use for barge transportation and its current status as a source of drinking water. A table at the bottom lists the 'Leine basin' with its first, second, third, and fifth order streams, as well as lakes, moors, and springs. The article is categorized under 'Leine drainage basin', 'Rivers of Thuringia', and 'Rivers of Lower Saxony'.

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**External links**

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- Bundesamt für Naturschutz: Landschaftssteckbrief "Leine-Niederung"


**Leine basin** [hide]

<b>First order streams</b>	Garte • Grindau • Ilme • Ilme • Innerste • Lutter • Rhume
<b>Second order streams</b>	Grane • Nette • Oder • Söse
<b>Third order streams</b>	Apenke • Eipenke • Lutter • Oспенke • Sieber • Sperrlutter
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<b>Lakes</b>	Silberteich
<b>Moors</b>	Teufelsbäder
<b>Springs</b>	Rhume Spring • Teufelsloch

Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony

# Structures

## Portals



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Français  
Hrvatski  
Italiano  
Latviešu  
मराठी  
Nederlands  
日本語  
Norsk (bokmål)  
Norsk (nynorsk)  
Polski  
Português  
Română  
Русский  
Svenska  
中文


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## Leine

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The **Leine** is a river in Thuringia and Lower Saxony, Germany. It is a left tributary of the Aller river (and so of the Weser river as well) and 281 km in length.



Leine near Nordstemmen

The river's source is located close to the town of Leinefelde in Thuringia. Forty kilometers downstream, the river enters Lower Saxony and runs northwards. Important towns upstream to down along its course are Göttingen, Einbeck, Alfeld and Gronau, before the river enters Hanover, the largest city on its banks. Downstream some forty kilometers north of Hanover, near Schwarmstedt, the river joins the Aller and reaches the North Sea via the Weser connecting to and flowing north past both the oceanic seaports of Hanseatic Bremen and the much newer but equally important city of Bremerhaven. Although the river occasionally over-floods its banks, damage is usually nominal. Only in its northern (lower) reaches is it navigable by today's smallest commercial carriers, though in the past it served as an important pre-railway barge transportation artery as far up river as Göttingen.

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Coordinates: 52°43′22″N 9°35′38″E﻿ / ﻿52.722777777778°N 9.5938888888889°E﻿ / 52.722777777778; 9.5938888888889

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Wikimedia Commons has media related to: *Leine*

Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony

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# Structures

## ► Inter-Wiki-Links

The screenshot shows the Wikipedia article for 'Leine'. The article text includes: 'The **Leine** is a river in Thuringia and Lower Saxony, Germany. It is a left tributary of the Aller river (and so of the Weser river as well) and 281 km in length. The river's source is located close to the town of Leinefelde in Thuringia. Forty kilometers downstream, the river enters Lower Saxony and runs northwards. Important towns upstream to down along its course are Göttingen, Einbeck, Alfeld and Gronau, before the river enters Hanover, the largest city on its banks. Downstream some forty kilometers north of Hanover, near Schwarmstedt, the river joins the Aller and reaches the North Sea via the Weser connecting to and flowing north past both the oceanic seaports of Hanseatic Bremen and the much newer but equally important city of Bremerhaven. Although the river occasionally over-floods its banks, damage is usually nominal. Only in its northern (lower) reaches is it navigable by today's smallest commercial carriers, though in the past it served as an important pre-railway barge transportation artery as far up river as Göttingen. The river is somewhat polluted from industries and so not used for drinking water but the pollution was never severe enough to prevent fish from living in it. Like many western rivers since the 1960s, it has enjoyed successively cleaner waters since the implementation of environmental controls. People enjoy sport fishing from small boats and from along the banks, although yields are normally low. At at least one point (Göttingen) the river is partially diverted into a canal that runs more or less parallel to the river. In his 1986 bestseller Red Storm Rising, author Tom Clancy uses the Leine as a major obstacle to the Soviet Union's Red Army in its drive to the Rhine River and the North Sea ports of the Netherlands and Belgium through West Germany.'

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Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony

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# Structures

## ► Support Pages

The screenshot shows the Wikipedia article for 'Leine'. The page includes a navigation sidebar on the left with options like 'Main page', 'Contents', and 'Languages'. The main content area features the article title 'Leine', a summary, a photograph of the river near Nordstemmen, and a detailed description of its course and history. A sidebar on the right provides specific details about the river in Hanover, including its origin, mouth, basin countries, and length. Below the main text, there are sections for 'Sources', 'External links', and a 'Leine basin' table listing various stream orders and features like lakes, moors, and springs. The page also includes a search bar, a 'Log in / create account' link, and a 'Wikimedia Commons' link.

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**Leine basin** [hide]

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Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony

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# Structures

## ► Information About Wikipedia

The screenshot shows the Wikipedia article for 'Leine'. The article text includes:
 

- Leine** is a river in Thuringia and Lower Saxony, Germany. It is a left tributary of the Aller river (and so of the Weser river as well) and 281 km in length.
- The river's source is located close to the town of Leinefelde in Thuringia. Forty kilometers downstream, the river enters Lower Saxony and runs northwards.
- Important towns upstream of down along its course are Göttingen, Einbeck, Alfeld and Gronau, before the river enters Hanover, the largest city on its banks.
- Downstream some forty kilometers north of Hanover, near Schwarmstedt, the river joins the Aller and reaches the North Sea via the Weser connecting to and flowing north past both the oceanic seaports of Hanseatic Bremen and the much newer but equally important city of Bremerhaven.
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 The article also features a 'Sources' section with two references, an 'External links' section with two links to German nature conservation sites, and a 'Leine basin' table listing first, second, third, and fifth order streams, lakes, moors, and springs. A sidebar on the right provides details on the river's origin (Thuringia), mouth (Aller), basin countries (Germany), and length (281 km). The page footer indicates it was last modified on 1 March 2011 at 16:37.



# Structures

## ▶ Info-Blocks with Key-Value-Pairs

The screenshot shows the Wikipedia article for 'Leine'. It includes a navigation sidebar on the left, a main article body with text and images, and a key-value table on the right. The table lists details about the Leine basin, such as first, second, third, and fifth order streams, lakes, moors, and springs.

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From Wikipedia, the free encyclopedia

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The river's source is located close to the town of Leinefelde in Thuringia. Forty kilometers downstream, the river enters Lower Saxony and runs northwards. Important towns upstream to down along its course are Göttingen, Einbeck, Alfeld, and Gronau, before the river enters Hanover, the largest city on its banks. Downstream some forty kilometers north of Hanover, near Schwarmstedt, the river joins the Aller and reaches the North Sea via the Weser connecting to and flowing north past both the oceanic seaports of Hanseatic Bremen and the much newer but equally important city of Bremerhaven. Although the river occasionally over-floods its banks, damage is usually nominal. Only in its northern (lower) reaches is it navigable by today's smallest commercial carriers, though in the past it served as an important pre-railway barge transportation artery as far up river as Göttingen.

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**Sources**

- Uwe Schmid: *Die Leine - Eine fotografische Reise*. ISBN 3000205675
- Gerd Lüttig: *Neue Ergebnisse quartärgeologischer Forschung im Raume Alfeld-Hameln-Elze*. In: *Geologisches Jahrbuch* Band 77, Seite 337–390. Hannover, Juni 1960.

**External links**

- Bundesamt für Naturschutz: Landschaftssteckbrief "Leine-Ilme-Senke"
- Bundesamt für Naturschutz: Landschaftssteckbrief "Leine-Niederung"


**Leine basin** [hide]

<b>First order streams</b>	Garte • Grindau • Ilme • Ilme • Innerste • Lutter • Rhume
<b>Second order streams</b>	Grane • Nette • Oder • Söse
<b>Third order streams</b>	Apenke • Eipenke • Lutter • Oспенke • Sieber • Sperrlutter
<b>Forth order streams</b>	Breitenbeek • Goldenke • Grade Lutter • Große Steinau • Kleine Steinau • Krumme Lutter • Kulmke • Lonau • Wäschegrund
<b>Fifth order streams</b>	Große Kulmke • Große Lonau • Große Schweinke • Kleine Kulmke • Kleine Lonau •
<b>Lakes</b>	Silberteich
<b>Moors</b>	Teufelsbäder
<b>Springs</b>	Rhume Spring • Teufelsloch

Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony

# Structures

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Euskara  
فارسی  
Français  
Hrvatski  
Italiano  
Latviešu  
मराठी  
Nederlands  
日本語  
Norsk (bokmål)  
Norsk (nynorsk)  
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## Leine

From Wikipedia, the free encyclopedia

Coordinates: 52°43′22″N 9°35′38″E﻿ / ﻿

The **Leine** is a river in Thuringia and Lower Saxony, Germany. It is a left tributary of the Aller river (and so of the Weser river as well) and 281 km in length.




Leine near Nordstemmen

The river's source is located close to the town of Leinefelde in Thuringia. Forty kilometers downstream, the river enters Lower Saxony and runs northwards. Important towns upstream to down along its course are Göttingen, Einbeck, Alfeld and Gronau, before the river enters Hanover, the largest city on its banks. Downstream some forty kilometers north of Hanover, near Schwarmstedt, the river joins the Aller and reaches the North Sea via the Weser connecting to and flowing north past both the oceanic seaports of Hanseatic Bremen and the much newer but equally important city of Bremerhaven. Although the river occasionally over-floods its banks, damage is usually nominal. Only in its northern (lower) reaches is it navigable by today's smallest commercial carriers, though in the past it served as an important pre-railway barge transportation artery as far up river as Göttingen.

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The Leine in Hanover.

<b>Origin</b>	Thuringia
<b>Mouth</b>	Aller
	<span><span><span><span><span>52°43′22″N</span> <span>9°35′38″E</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span></span><span><span></span></span></span></span></span>
<b>Basin countries</b>	Germany
<b>Length</b>	281 km

### Sources

- Uwe Schmid: *Die Leine - Eine fotografische Reise*. ISBN 3000205675
- Gerd Lüttig: *Neue Ergebnisse quartärgeologischer Forschung im Raume Alfeld-Hameln-Elze*. In: *Geologisches Jahrbuch* Band 77, Seite 337–390. Hannover, Juni 1960.


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v · d · e
**Leine basin**
[hide]

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<b>Lakes</b>	Silberteich
<b>Moors</b>	Teufelsbäder
<b>Springs</b>	Rhume Spring • Teufelsloch

Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony


Wikimedia Commons has media related to: *Leine*

This page was last modified on 1 March 2011 at 16:37.

# Structures

## ► Coordinates

The screenshot shows the Wikipedia article for "Leine". The page is structured with a main article area, a sidebar on the left, and a metadata box on the right. The main article contains a title, a summary, a photograph, and several paragraphs of text. The sidebar lists navigation options like "Main page", "Contents", and "Languages". The metadata box on the right provides details about the river's origin, mouth, basin countries, and length. Below the main article, there are sections for "Sources", "External links", and a "Leine basin" table. The table lists streams of different orders, lakes, moors, and springs. The page also includes a search bar, a "Log in / create account" link, and a "Categories" section at the bottom.

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### Leine

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Wikimedia Commons has media related to: *Leine*

	Leine basin
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Categories: Leine drainage basin | Rivers of Thuringia | Rivers of Lower Saxony

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▶ { { Coordinate | [map](#)= | [article](#)= | [text](#)= | **NS**= | **EW**= | **type**=  
| [pop](#)= | [elevation](#)= | **region**= | [dim](#)= | [name](#)= | [mapsize](#)= | [sortkey](#)= } }

▶ NS= Latitude

- Deg/Min/Sec/Orientation or Decimal (sign)

- NS=49/45/34.85/N
- NS=49.759681

▶ EW= Longitude

- Deg/Min/Sec/Orientation or Decimal (sign)

- EW=6/38/38.47/E
- EW=6.6440194

# Georeferenced Wikipedia Articles

▶ { { Coordinate | [map](#) = | [article](#) = | [text](#) = | **NS** = | **EW** =  
| **type** = | [pop](#) = | [elevation](#) = | **region** = | [dim](#) = | [name](#) =  
| [mapsiz](#) = | [sortkey](#) = } }

▶ type =

- *country* für Länder
- *state* für andere Staatengebilde, nicht-souveräne Staaten
- *adm1st* für Bundesländer, Kantone ...
- *adm2nd* für Landkreise, Verwaltungsgemeinden
- *city* für Städte und Stadtteile, Orte und Orts-Gemeinden
- *isle* für Inseln, Inselgruppen
- *airport* für Flughäfen, Luftwaffenstützpunkte
- *mountain* für Berge, Hügel, Gebirgsketten, Pässe
- *waterbody* für Flüsse, Seen, Gletscher, Kanäle, Wasserfälle, Geysire
- *landmark* für Sehenswürdigkeiten, Landmarken, Gebäude **+everything**

# Georeferenced Wikipedia Articles

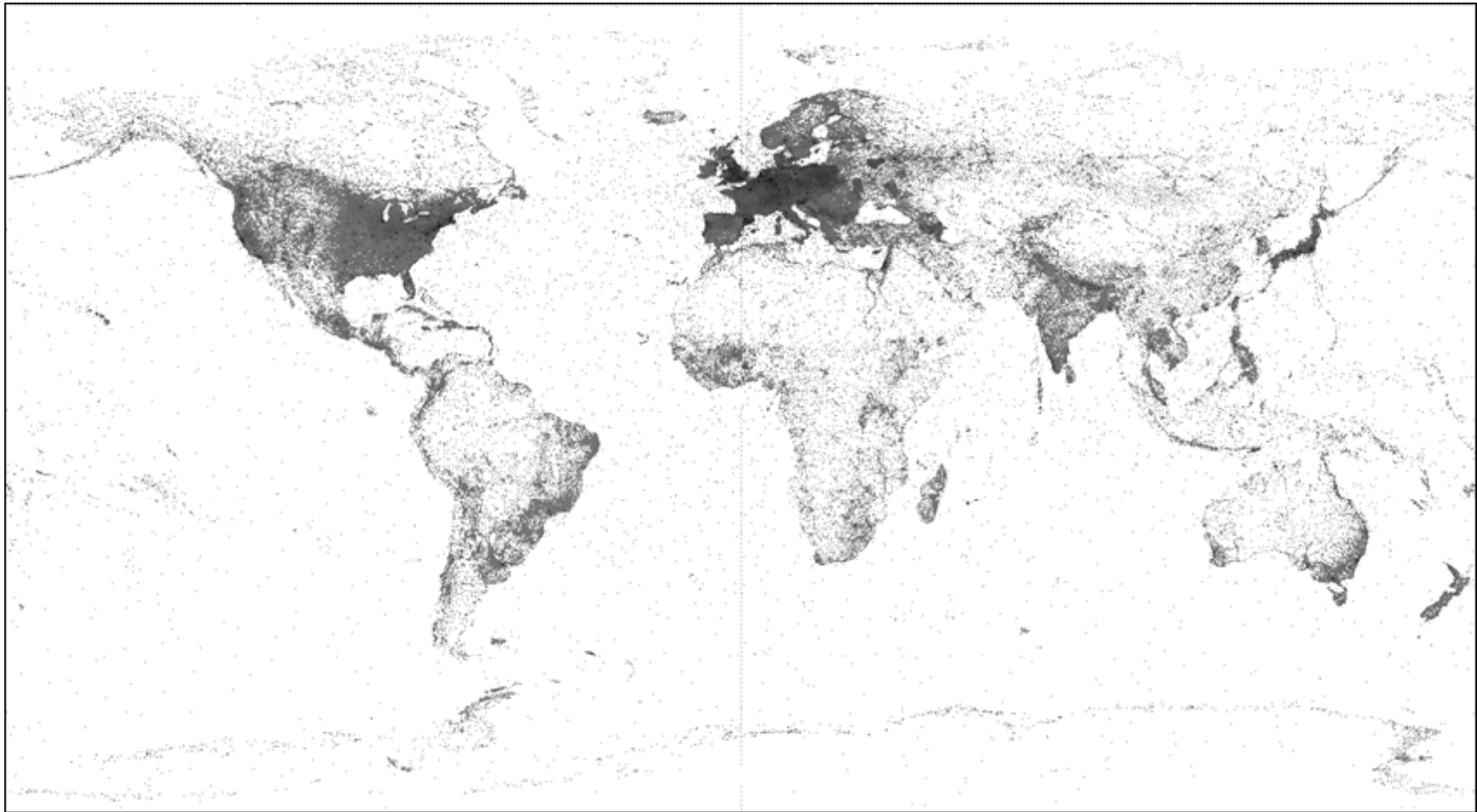
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▶ region=

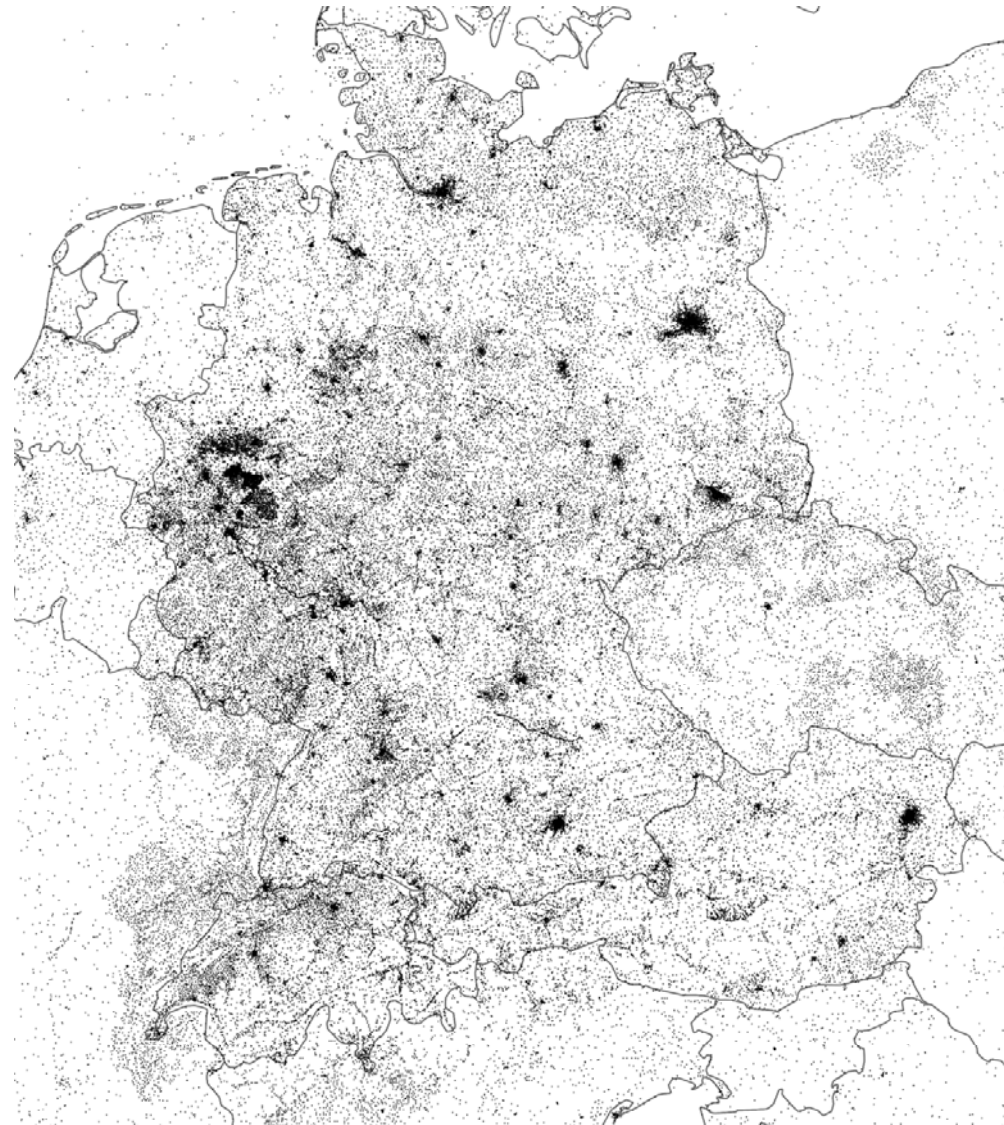
- Country-/Regioncode of [ISO 3166-1](#) and [ISO 3166-2](#)
  - Niedersachsen: DE-NI
  - Berlin: DE-BE
  - Wien: AT-9



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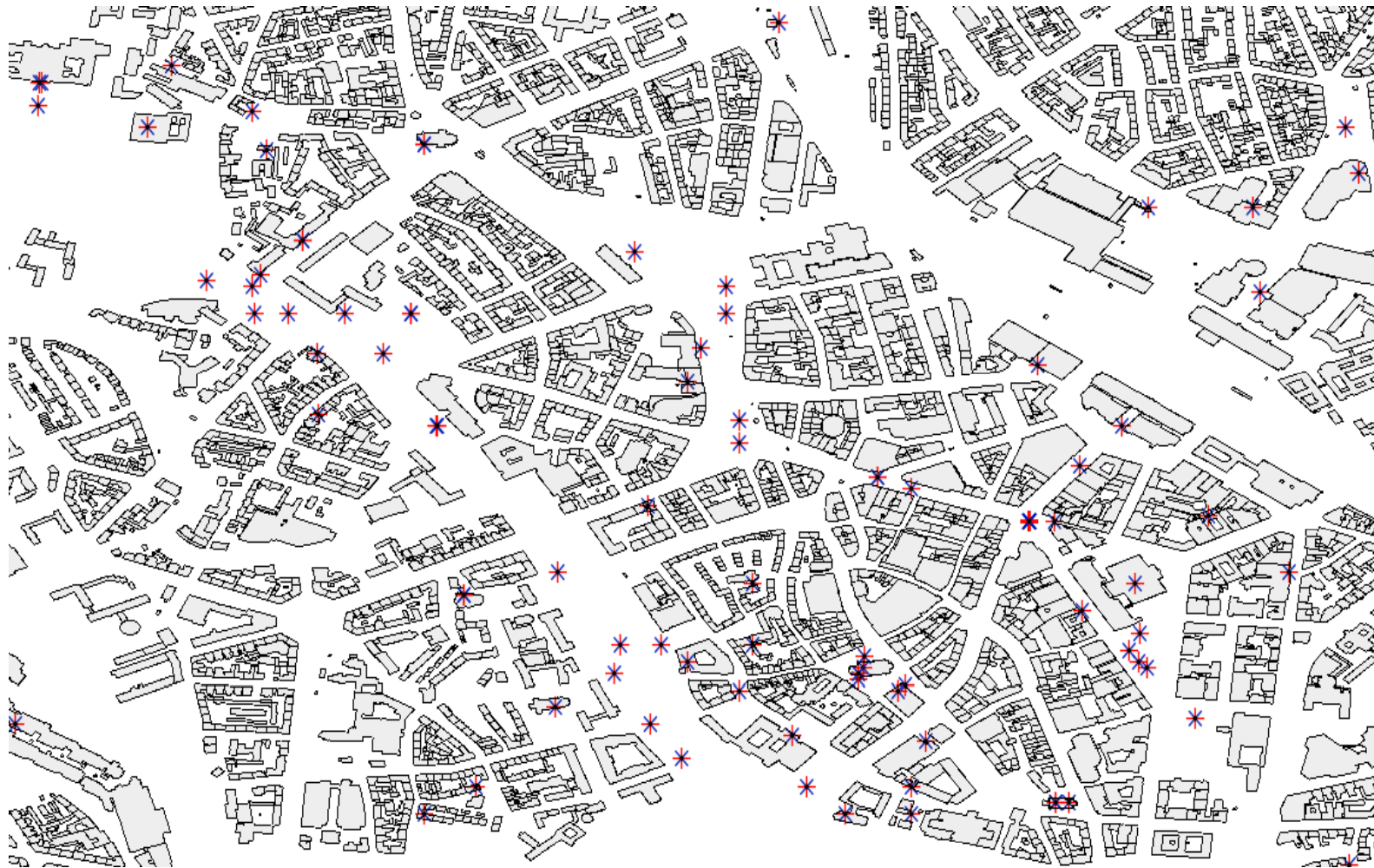


# Georeferenced Articles German Wikipedia

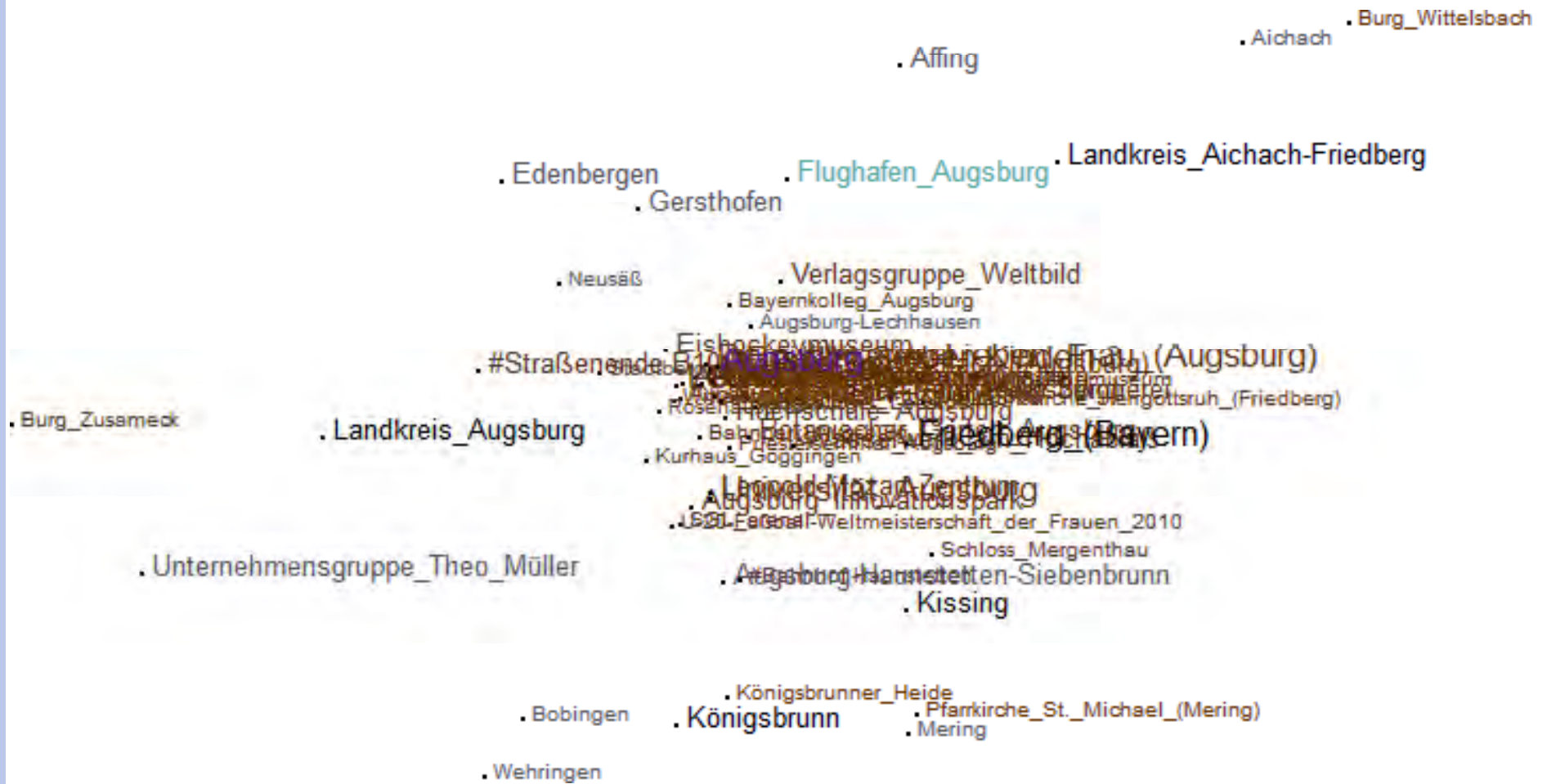


(Alder/Kühn, 2011)

# Georeferenced Articles German Wikipedia



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(Alder, 2012)

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- ▶ API

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- Backups
- Articles in an XML Structure

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# Localisation of Geographic Objects

# Localisation of Geographic Objects

## ► Wikipedia uses only Point Coordinates

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### Reuss (Fluss)

Die **Reuss** ist ein Fluss in der Schweiz. Sie ist 164 Kilometer lang und hat ein Einzugsgebiet von 3425 Quadratkilometern. Damit ist sie nach Rhein, Aare und Rhône der viertgrösste Fluss der Schweiz.

Die Reuss entspringt im Gotthardmassiv, am Gotthardpass und am Furkapass auf 2431 m ü. M. Gotthardreuss und Furkareuss vereinigen sich im Urserental und fliessen nach Osten. Einer der Quellflüsse der Furkareuss ist die Witenwasserreuss.

Bei Andermatt biegt der Fluss nach Norden ab und durchquert die Schöllenschlucht. Die unwegsame Schöllenschlucht mit ihren steilen, hunderte Meter hohen Granitwänden war im Mittelalter das Hindernis zur Erschliessung des Gotthardpasses, das nur durch schwierige Kunstbauten wie das Umerloch und die Teufelsbrücke überwunden werden konnte. In der Schöllenen befindet sich auch das Suworow-Denkmal, das dem russischen General Suworow gewidmet wurde und an die Schlacht von 1799 erinnert.


Bei Göschenen verlassen Bahn und Autobahn die Gotthardtunnel-Röhren. Bis Erstfeld folgen weitere Schluchten, dann geht es durch die breite Ebene des Urner Reusstals, bis die Reuss bei Flüelen in den Vierwaldstättersee mündet.

In Luzern verlässt sie den See wieder und fliesst als breiter Fluss mit vielen Schlaufen und Windungen in zuerst östlicher, dann nördlicher Richtung durch das Reusstal vorbei an alten Städtchen wie Bremgarten und Mellingen, bis sie unterhalb von Windisch beim Wasserschloss in die Aare mündet.

Von geschichtlicher Bedeutung ist die Reuss insofern, als sie im Mittelalter seit dem 10. Jahrhundert während ca. 200 Jahren Grenzfluss auf Schweizer Gebiet zwischen dem Königreich Burgund und dem deutschen Kaiserreich respektive zeitweilig den übrigen Teilen des Kaiserreiches war.

Die wichtigsten Reuss-Seitentäler sind:

**Reuss**



Die Reuss in Luzern

**Daten**

# Idea: Hecht and Raubal (2008)

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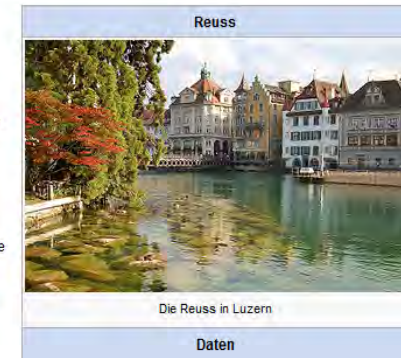
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## Schweiz

Der Titel dieses Artikels ist mehrdeutig. Für die Landschaftsbezeichnung Schweiz siehe [Schweiz \(Landschaftsbezeichnung\)](#).

Die **Schweiz**, amtlich **Schweizerische Eidgenossenschaft**, ist ein **Binnenstaat** und **Alpenland** in **Mitteleuropa** mit 7,7 Millionen Einwohnern auf 41'285 km<sup>2</sup>. Das Land grenzt im Norden an **Deutschland**, im Osten an **Österreich** und das **Fürstentum Liechtenstein**, im Süden an **Italien** und im Westen an **Frankreich**. *De jure* hat die Schweiz keine Hauptstadt; *de facto* ist es die **Bundesstadt Bern** (siehe auch *Hauptstadtfrage der Schweiz*). Die Einwohner sind sprachlich und *konfessionell* heterogen. Deutsch, Französisch, Italienisch und Rätoromanisch sind die vier offiziellen Landessprachen; 41 Prozent der Schweizer Bürger sind *römisch-katholisch* und 40 Prozent *evangelisch-reformiert*. Die Schweiz wird darum auch als «*Willensnation*» bezeichnet.

Die Schweiz ist mit einem **Bruttoinlandsprodukt** von 56'000 Schweizer Franken (38'000 Euro) pro Einwohner und Jahr eines der wirtschaftsstärksten Länder der Welt. Drei Viertel der Erwerbstätigen sind im Dienstleistungssektor tätig, die Städte **Zürich** und **Genf** stehen zuoberst auf der Rangliste der Städte mit der höchsten Lebensqualität <sup>[1]</sup>

Die Eidgenossenschaft existiert als loser **Staatenbund** seit dem 13. Jahrhundert. Dem **Nationalmythos** zufolge wurde sie Anfang August 1291 auf der **Rütliwiese** zur Gründung beschworen. Die Schweiz in ihrer heutigen Form als **federalistischer** Bundesstaat wurde mit der Bundesverfassung von 1848 geschaffen. Sie gliedert sich in 26 **Kantone** (Gliederstaaten), wobei der **Kanton Jura** erst 1979 gebildet wurde. Die aussenpolitische **Neutralität** der Schweiz ist seit dem **Wiener Kongress** 1815 völkerrechtlich anerkannt. Heute ist das Land Mitglied der **Europäischen Freihandelszone**, des **Europarats**, der **Welthandelsorganisation** (seit 1995; seit 1959 Mitglied der Vorläuferorganisation **Allgemeines Zoll- und Handelsabkommen**), der **Vereinten Nationen** (seit 2002), des **Schengener Abkommens**, nicht aber der **Europäischen Union**.

Der Name **Schweiz** stammt vom Namen des Gründungskantons **Schwyz**, der auf die gesamte Eidgenossenschaft verallgemeinert wurde. Um keine der vier Amtssprachen zu bevorzugen, lautet das **Landeskennzeichen** der Schweiz «CH», für *Confoederatio Helvetica*, die lateinische Bezeichnung für Schweizerische Eidgenossenschaft. In den anderen Landessprachen ist der Name der Schweiz *Suisse* (*franz.*), *Svizzera* (*ital.*) und *Svizra* (*rätoroman.*).

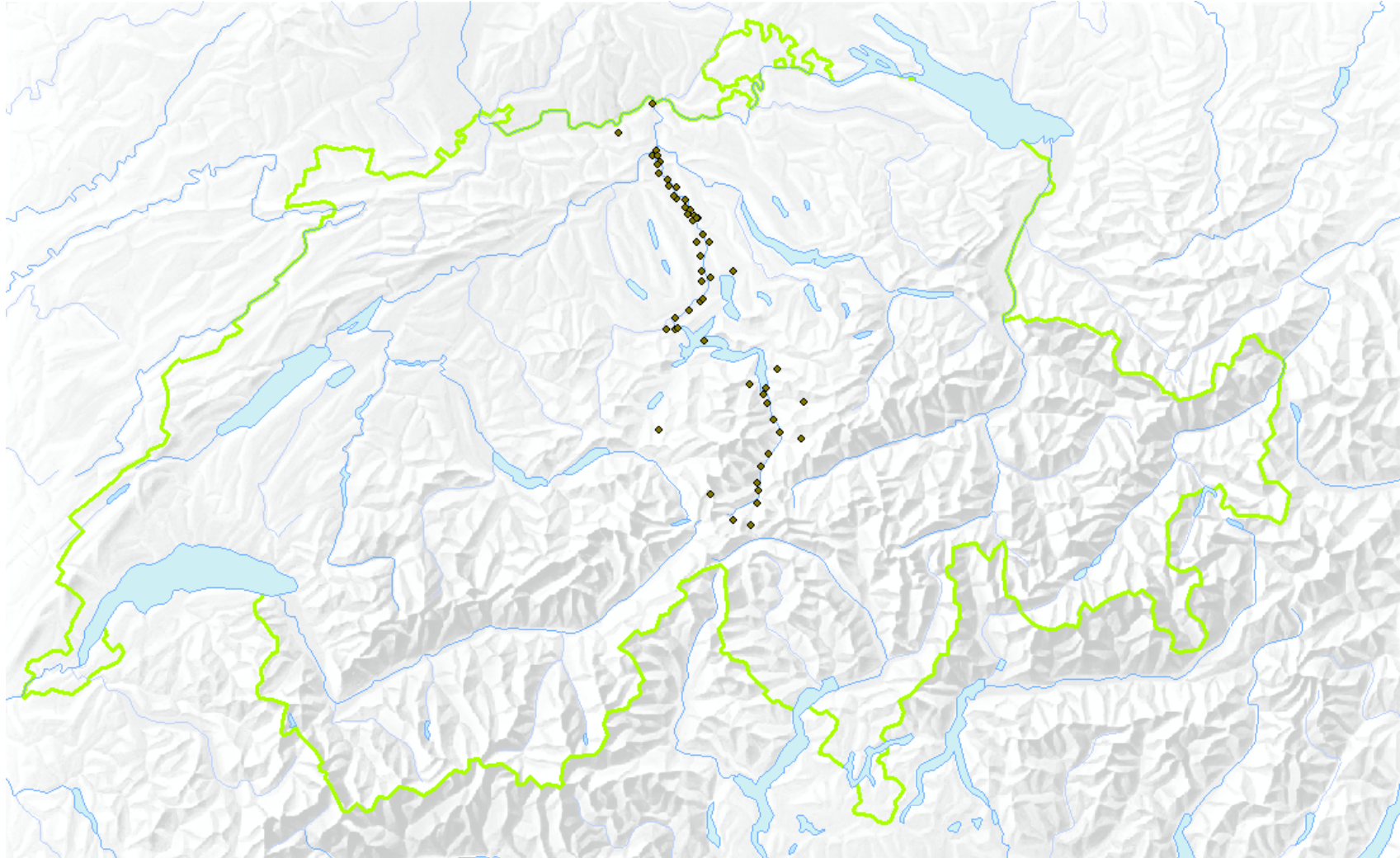
**Schweizerische Eidgenossenschaft**  
**Confédération suisse** (*franz.*)  
**Confederazione Svizzera** (*ital.*)  
**Confederaziun svizra** (*rätoroman.*)  
**Confoederatio Helvetica** (**CH**) (*lat.*)



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# Localisation of Geographic Objects



# Localisation of Geographic Objects

## ► Deister

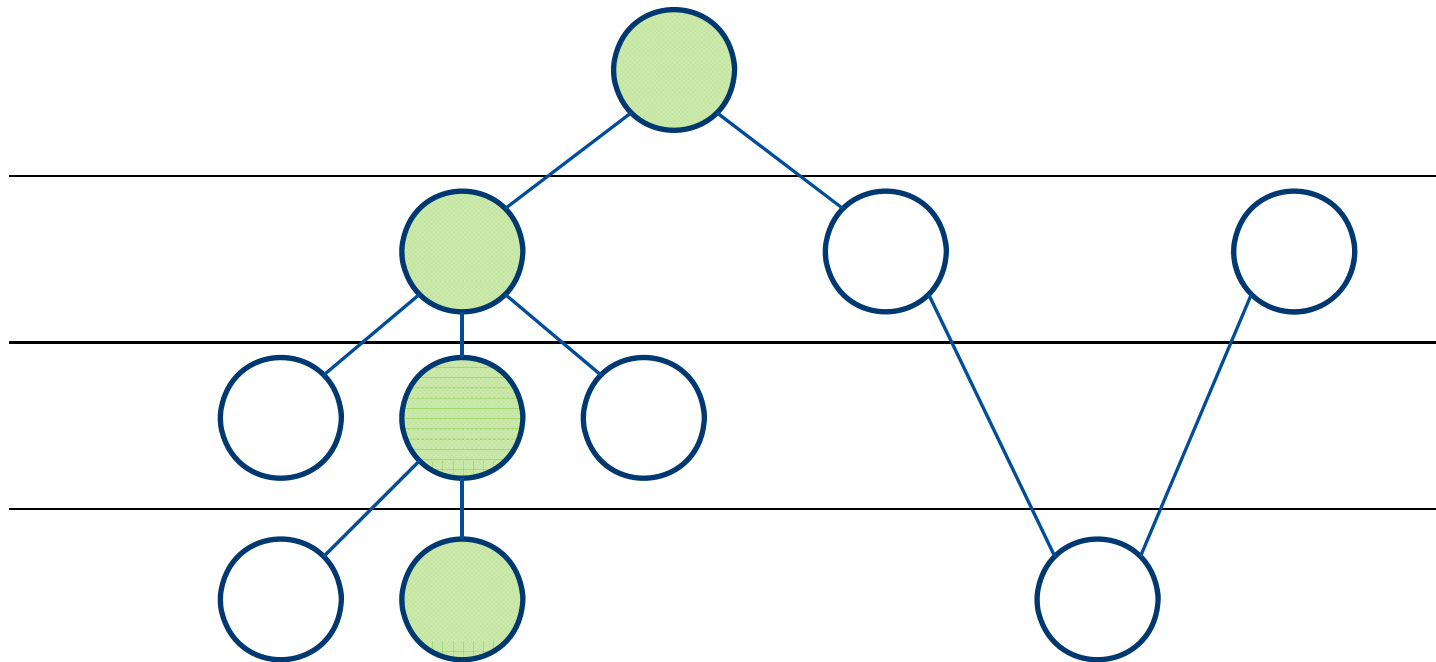


Base Map: BKG (2001)

Definition: Liedkte (2002)

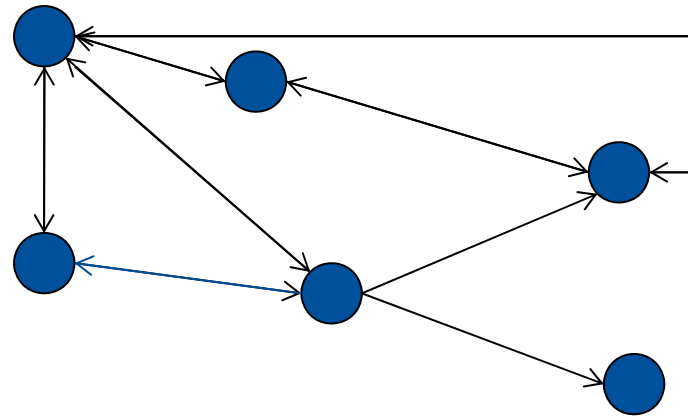
# Neighbourhood of Articles

- ▶ Horizontal and vertical neighbourhood
  - classes



# Neighbourhood of Articles

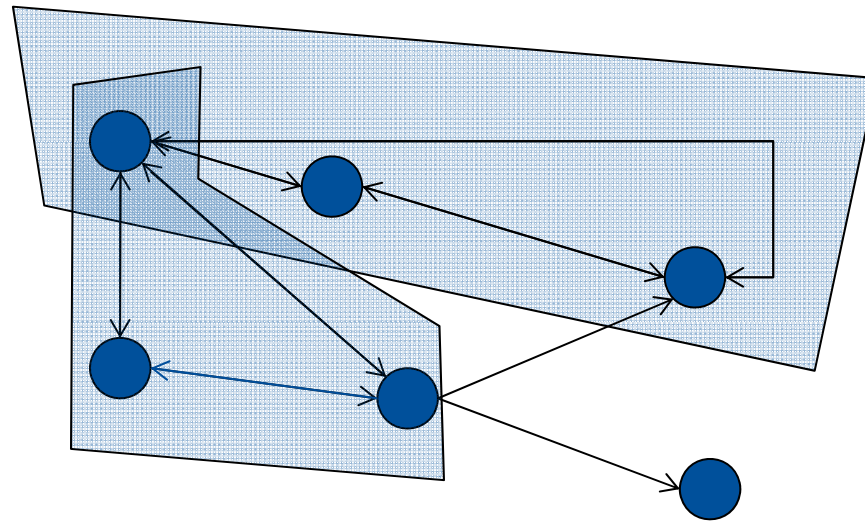
- ▶ Wikipedia has a graph structure
  - Articles = Nodes Links = Edges




- ▶ Semantic Relation of Articles:
  - Hecht and Raubal (2008)


# Neighbourhood of Articles

## ▶ Neighbourhood Cliques



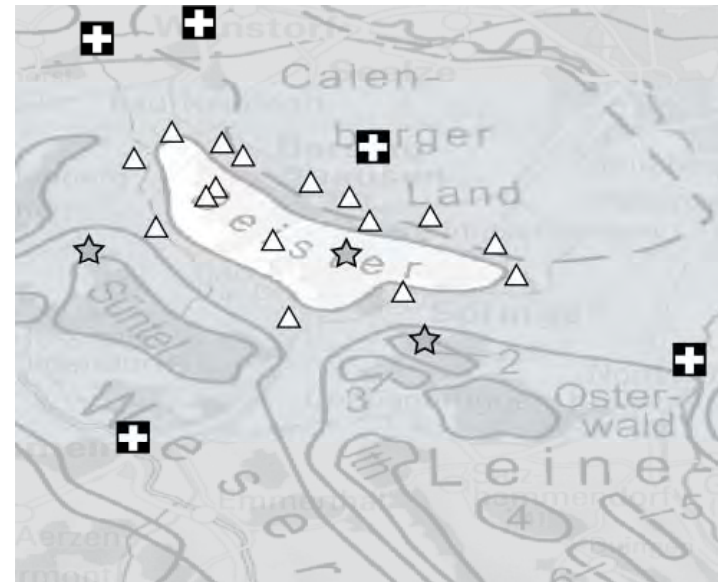
# Split Cliques According to Topic and Size

- ▶ Topic 
  - Compare Templates
    - Infoboxes
    - Data About Individuals
  - Coordinate's Type

- ▶ Size 
  - Length of the Article
  - Distribution of the Footprint of the Linked Articles

# Example

## ► Deister



Base Map: Landschaften (2001)



# Range Estimation



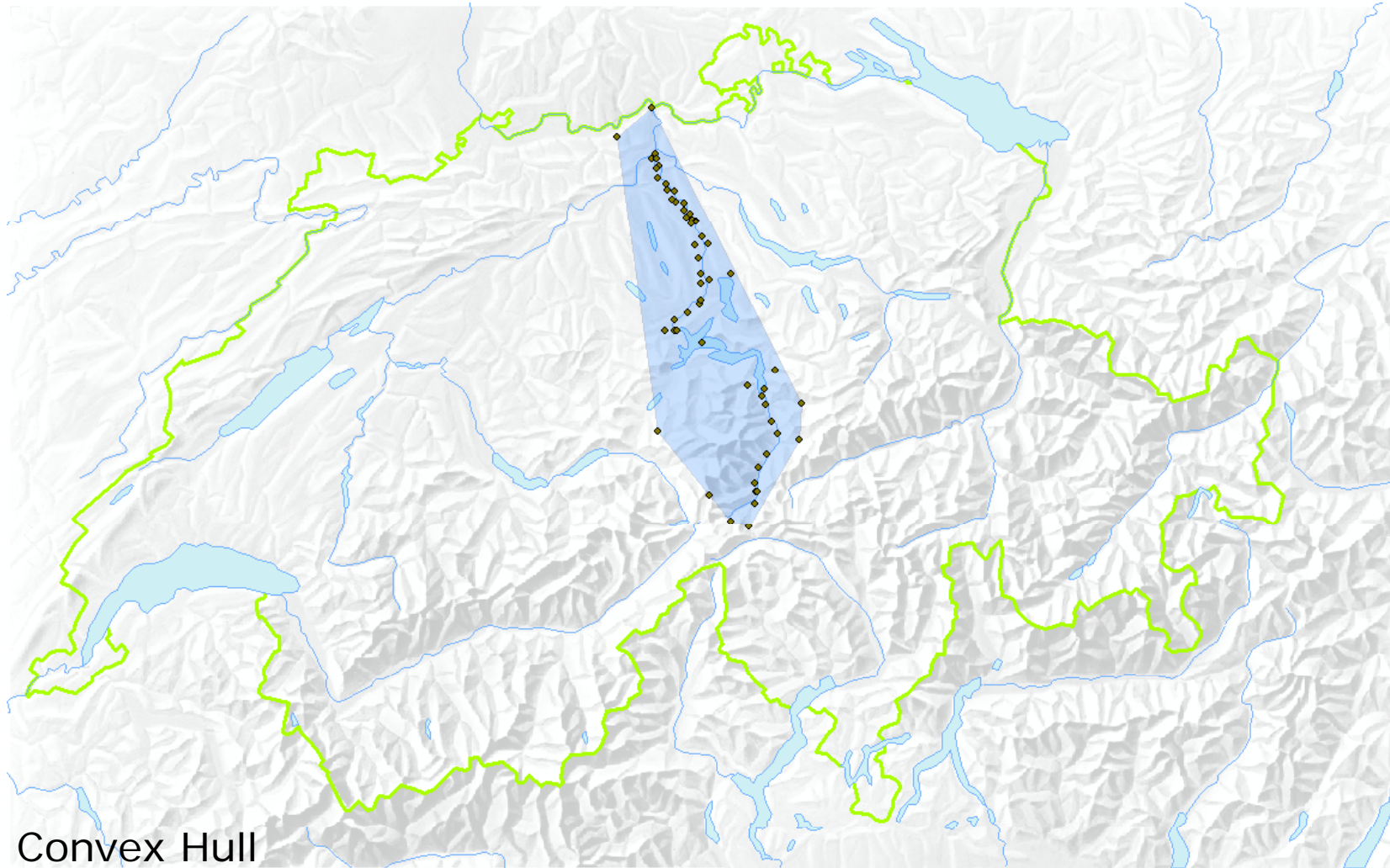
# Range Estimation

- ▶ “Home Range Estimation”:
  - For animals: 95 % Range (Worton, 1987)
- ▶ Point-set Based Regions

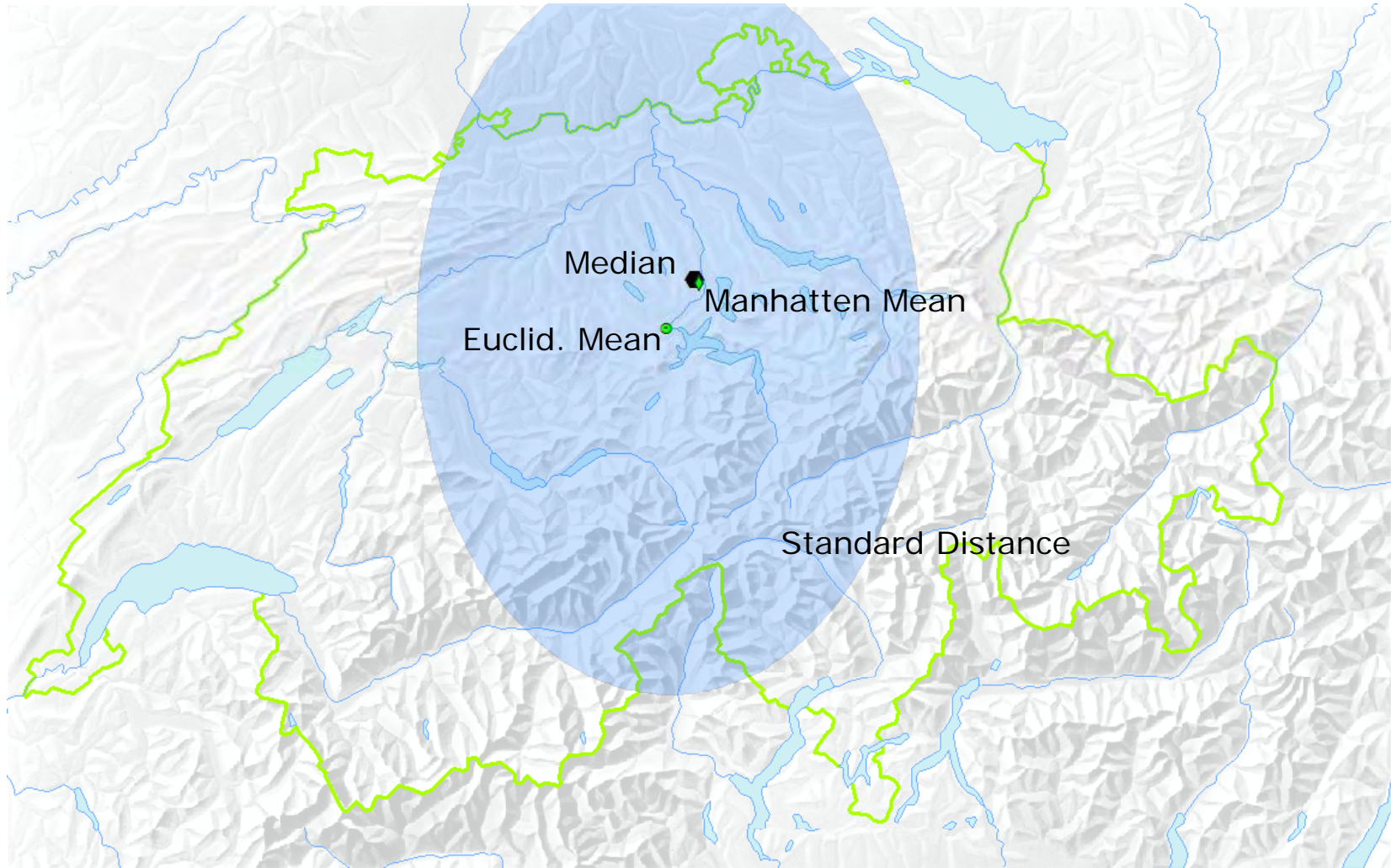
# Range Estimation

- ▶ Polygon
  - Minimum Convex Polygon with Restrictions
  - Alpha-Shape (Arampatzis et al., 2006)
    - Recoloring, Potential Adaptations
- ▶ Centre of Activity
  - Circular distributions
- ▶ Non-parametric
  - Fourier Analysis
  - Harmonic Mean
  - SVN
  - Kernel Density Estimation

# Range Estimation

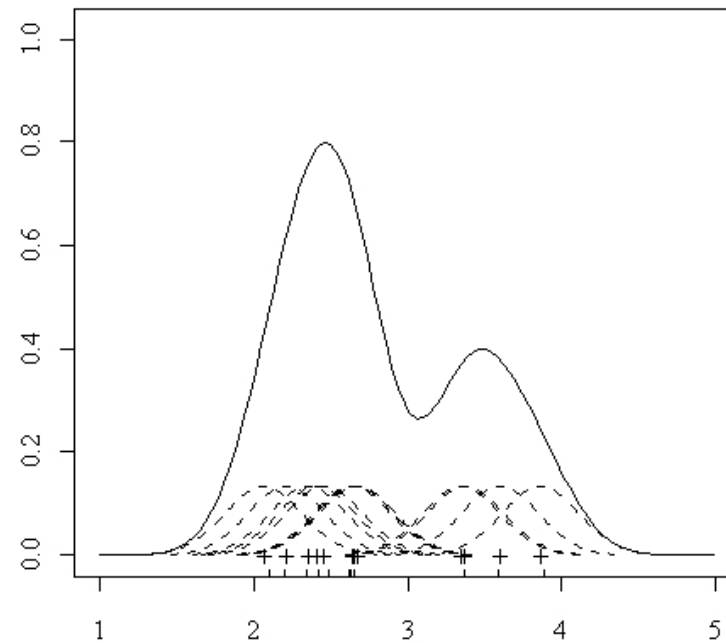


# Range Estimation



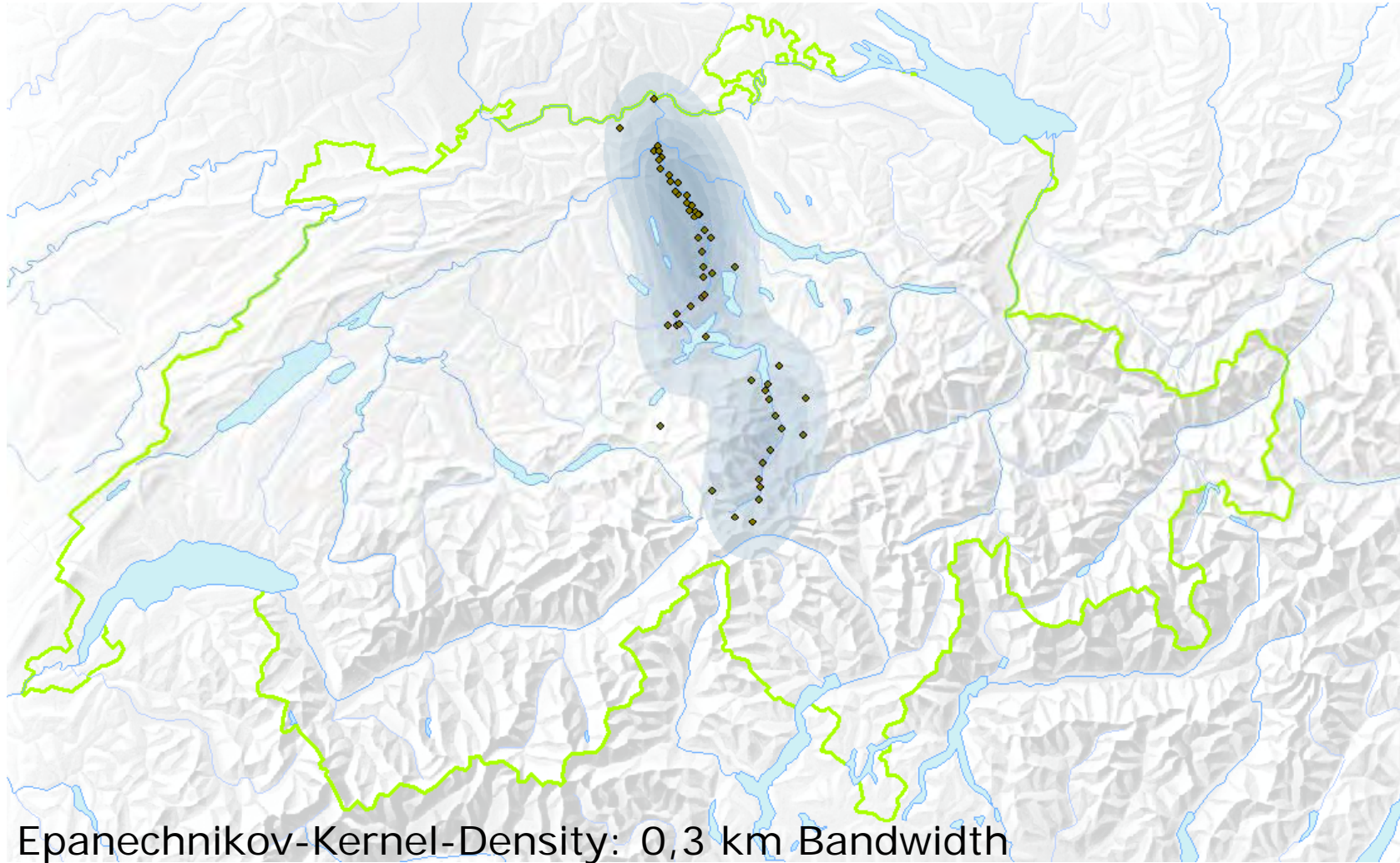
# Range Estimation

## ▶ Kernel Density Estimation

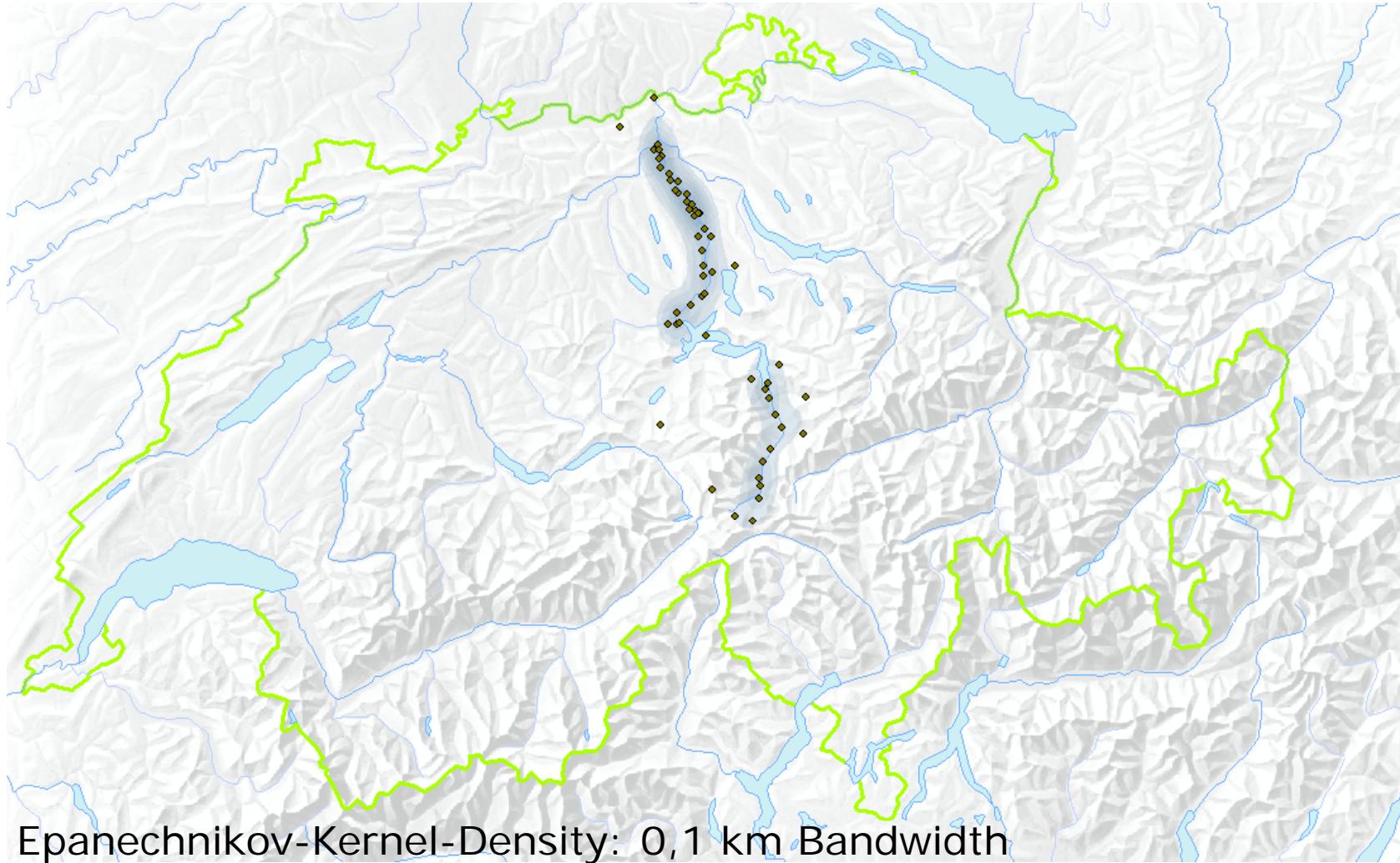


(Silverman, 1986)

# Range Estimation



# Range Estimation



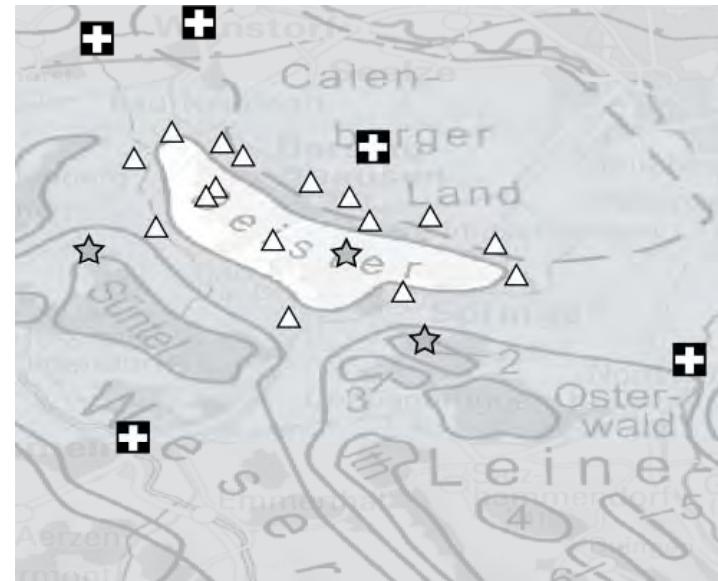
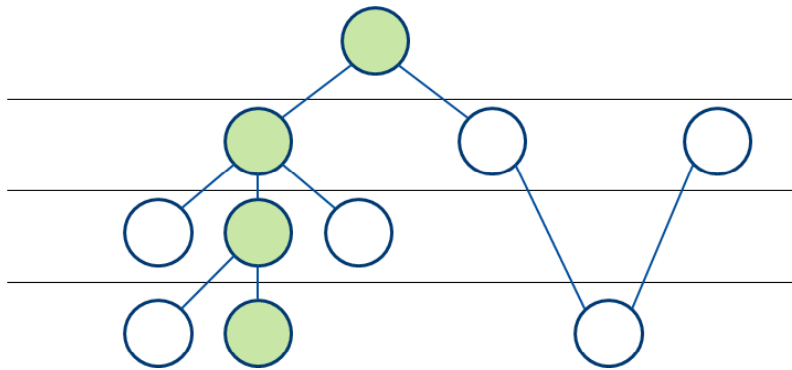


# Relationship Between Point Sets



# Relationship Between Point Sets

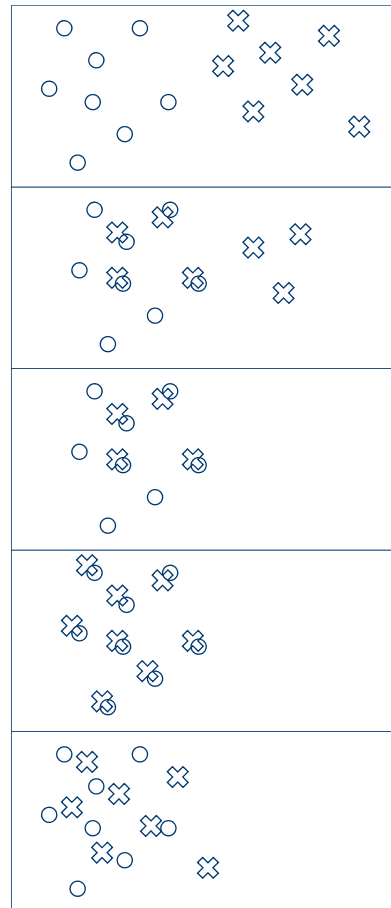
- ▶ Selected Points vs. All Other Points
- ▶ Children of Siblings



# Relationship between Point-set-based Regions

## ► Topological Relationship

- Disjoint
- Overlap
- Inside
- Contain
- Deduced Overlap



# Relationship between Point-set-based Regions

## ▶ Directional Relationship

- Cardinal Direction

## ▶ Metric Relationship

- Distance Between Centroids
- Average Distance
- Hausdorff Distance

# Relationship between Point-set-based Regions

## ▶ Maximum Density

- Normalization
- Bandwidth

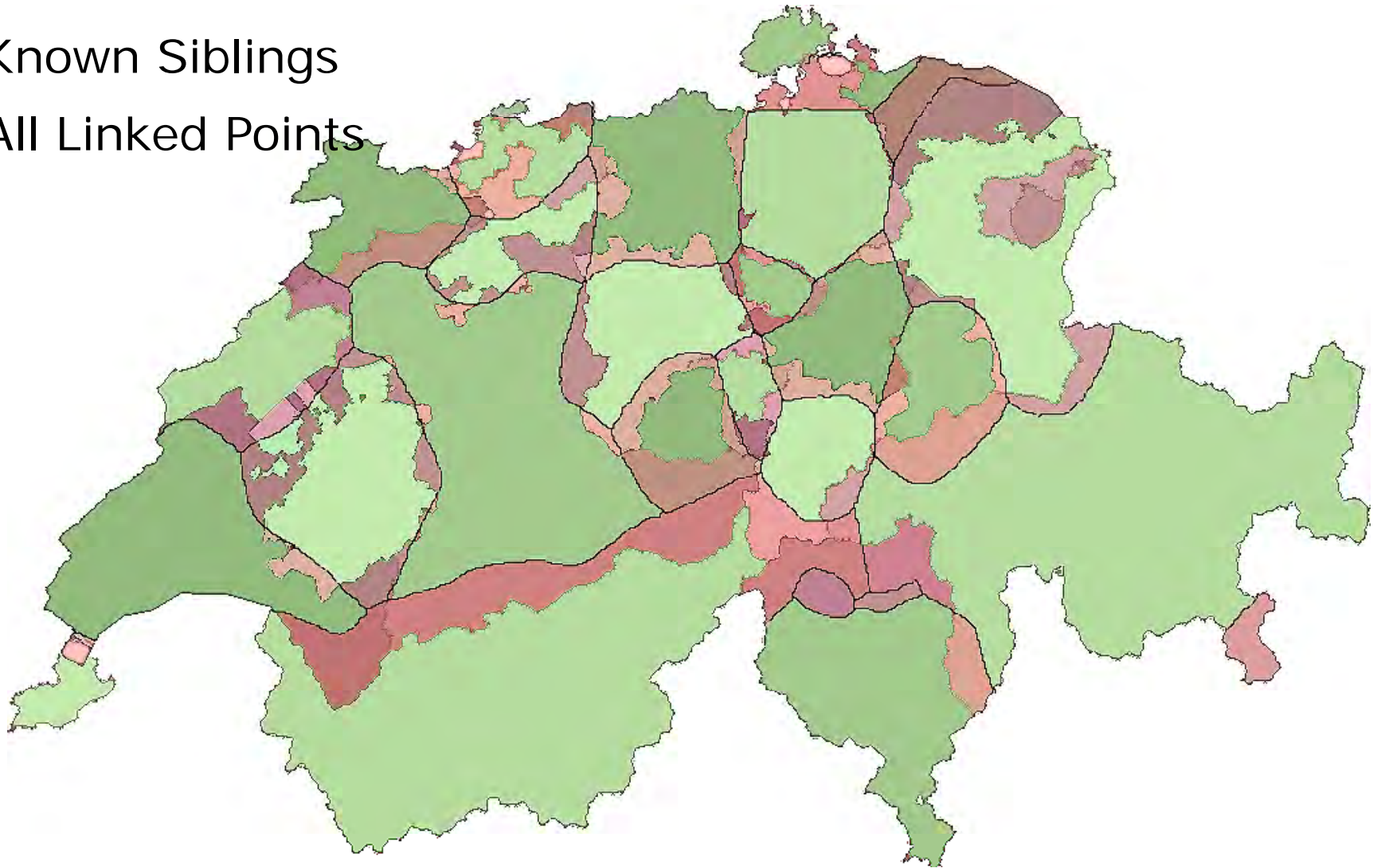


## ▶ Thiessen Polygons

- Disjoint Point-Sets

# Evaluation

- ▶ Known Siblings
- ▶ All Linked Points



Bandwidth: 0,25 km

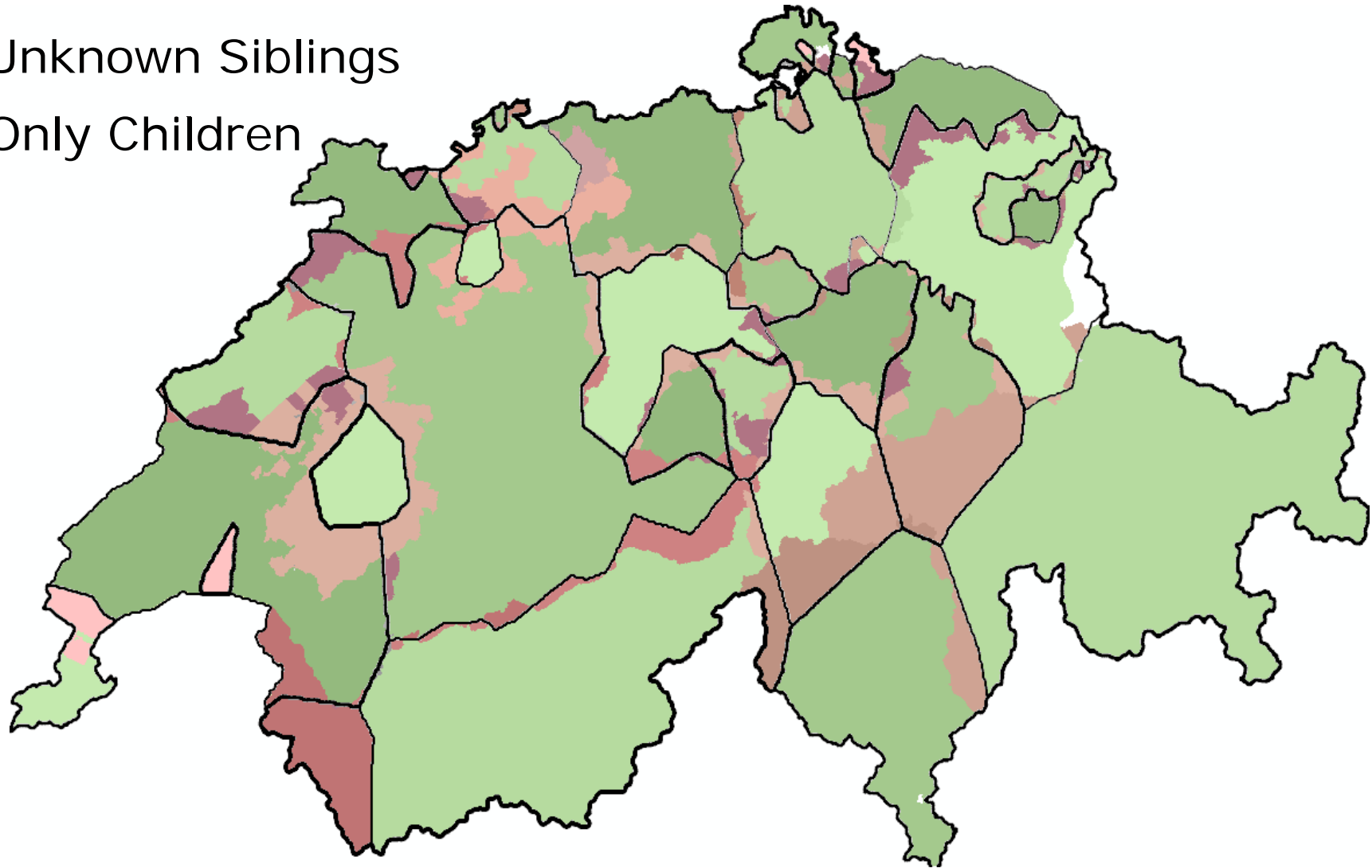
Delineation of Vague Places | Kartographie und Forschung

~80% correct

Dahinden | 54 

# Evaluation

- ▶ Unknown Siblings
- ▶ Only Children



Thiessen-Polygon

Delineation of Vague Places | Kartographie und Forschung

~83% correct

Dahinden | 55 

# Résumé

- ▶ Wikipedia is a Useful Source for Geographic Information
- ▶ Graph-Analysis
  - Improves Point Classification
  - Enables Concurrent Delineation
- ▶ Issues
  - Relationship Between Point-Sets
  - Topology

# References

- Spiess, E. *Schweizer Weltatlas*, Nachgeführte und erweiterte Ausgabe, 2002
- Liedtke, H. *Namen und Abgrenzungen von Landschaften in der Bundesrepublik Deutschland*. Deutsche Akademie für Landeskunde, 2002
- Jordan, P. *Großgliederung Europas nach kulturräumliche Kriterien*. Leibniz-Institut für Länderkunde, City, 2005
- Montello, D. R., Goodchild, M. F., Gottsegen, J. and Fohl, P. Where's Downtown?: Behavioral Methods for Determining Referents of Vague Spatial Queries. *Spatial Cognition and Computation*, 3, 2&3 2003), 185-204
- Davies, C. *Are Places Concepts? Familiarity and Expertise Effects in Neighborhood Cognition*. Springer, City, 2009
- Clough, P. and Pasley, R. *Images and perceptions of neighbourhood extents*. City, 2010
- Jones, C., Purves, R., Clough, P. D. and Joho, H. Modelling Vague Places with Knowledge from the Web. *International Journal of Geographical Information Science*, 22, 10 2008), 1045-1065
- Waters, T. and Evans, A. J. *Tools for the web-based GIS mapping of "fuzzy" vernacular geography*. City, 2003



# References

Hollenstein, L. and Purves, R. Exploring place through user-generated content: Using Flickr tags to describe city cores. *Journal of Spatial Information Science*, 1, 1 2010), 21-48

Worton, B.J., A Review of Models of Home Range for Animal Movement. *Ecological Modelling*, 38, 1987, 277-289

Arampatzis, M., Reinbacher, I., Jones, C., Vaid, S., Clough, P., Joho, H. and Sanderson, M. Web-based delineation of imprecise regions. *Journal of Computers, Environments and Urban Systems (CEUS)*, 30, 4 2004, 436-459

Wikipedia: [de.wikipedia.org](http://de.wikipedia.org)

Alder, T., Kühn, S., Wikipedia: WikiProjekt Georeferenzierung, Wikipedia-World, Accessed: June 2011

Alder, T., <https://toolserver.org/~kolossos/wp-world/umkreis.php> Accessed: August 2012

*Atlas der Schweiz*, ETH Zürich und swisstopo, Wabern, 2001

Hecht, B. and Raubal, M. *GeoSR: Geographically Explore Semantic Relations in World Knowledge*. Springer, City, 2008

# References

Silverman, B.W., *Density Estimation for Statistics and Data Analysis*. Chapman and Hall, London, 1986

BKG *Topographische Karte 1 : 1 000 000, Ausgabe Landschaften*. Bundesamt für Kartographie und Geodäsie, City, 2001