



Historical mapping for landscape reconstruction

Examples from the canton of
Valais (Switzerland)

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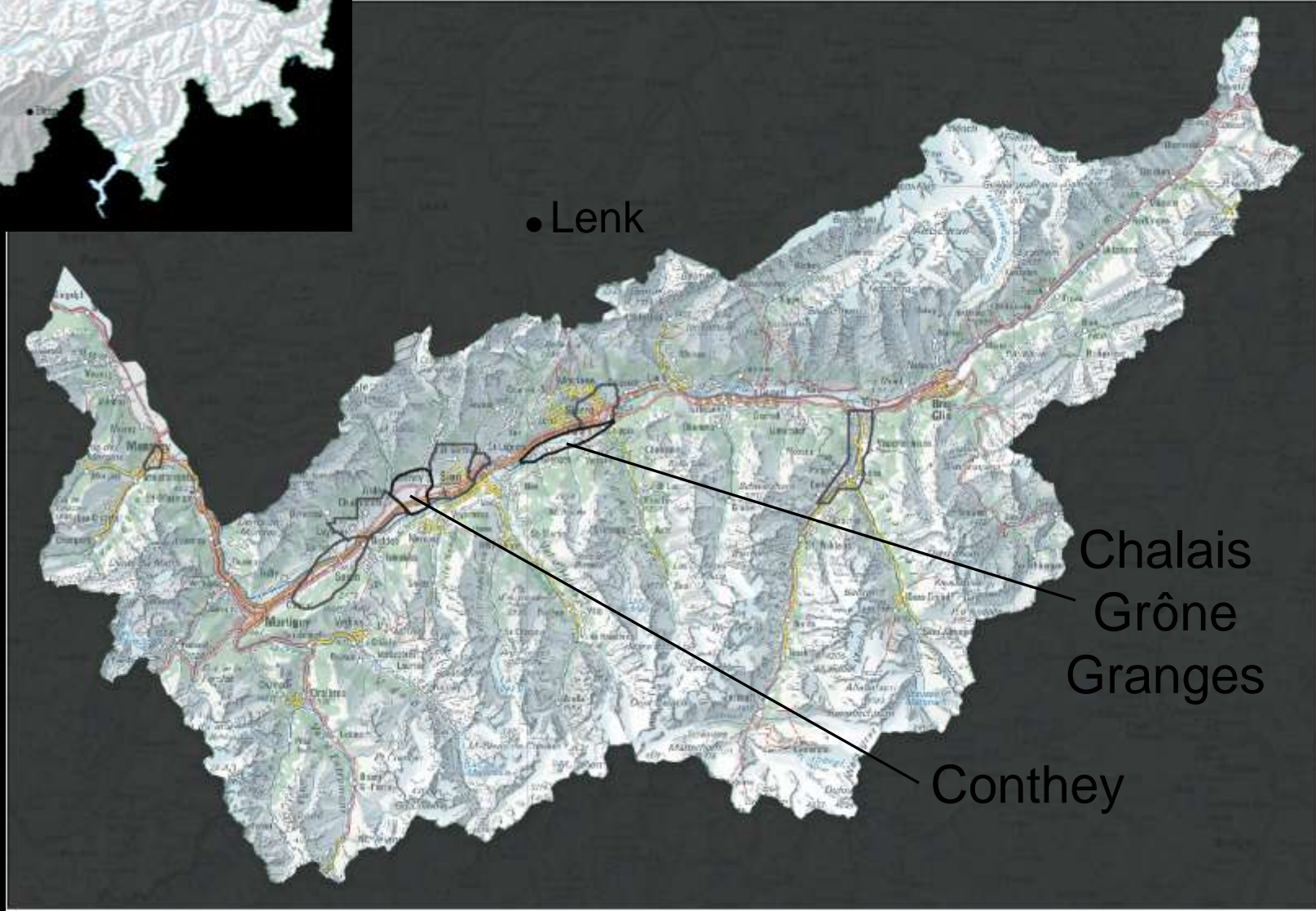
Description of historical landscape
change

To understand the driving forces of
landscape change

By using historical maps in a GIS
environment

Presentation

- Sources and methodology
 - Historical maps
 - Methodology and problems
- Rhone river alluvial plain
- Conclusion



Napoleon Map

1802

No revision

1:5'000

No height indication

No projection



Topographic survey for the Dufour map

1839-1841

No revision

1:50'000

376.2 m

Contour lines: 30 m

Equivalent conical



Introduction

Historical maps

Methodology

Examples

Conclusion

Dufour map

1845-1865

Until 1939

1:100'000

376.2 m

Obliquely luminated
hachures

Equivalent conical



Siegfried map

1870-1926

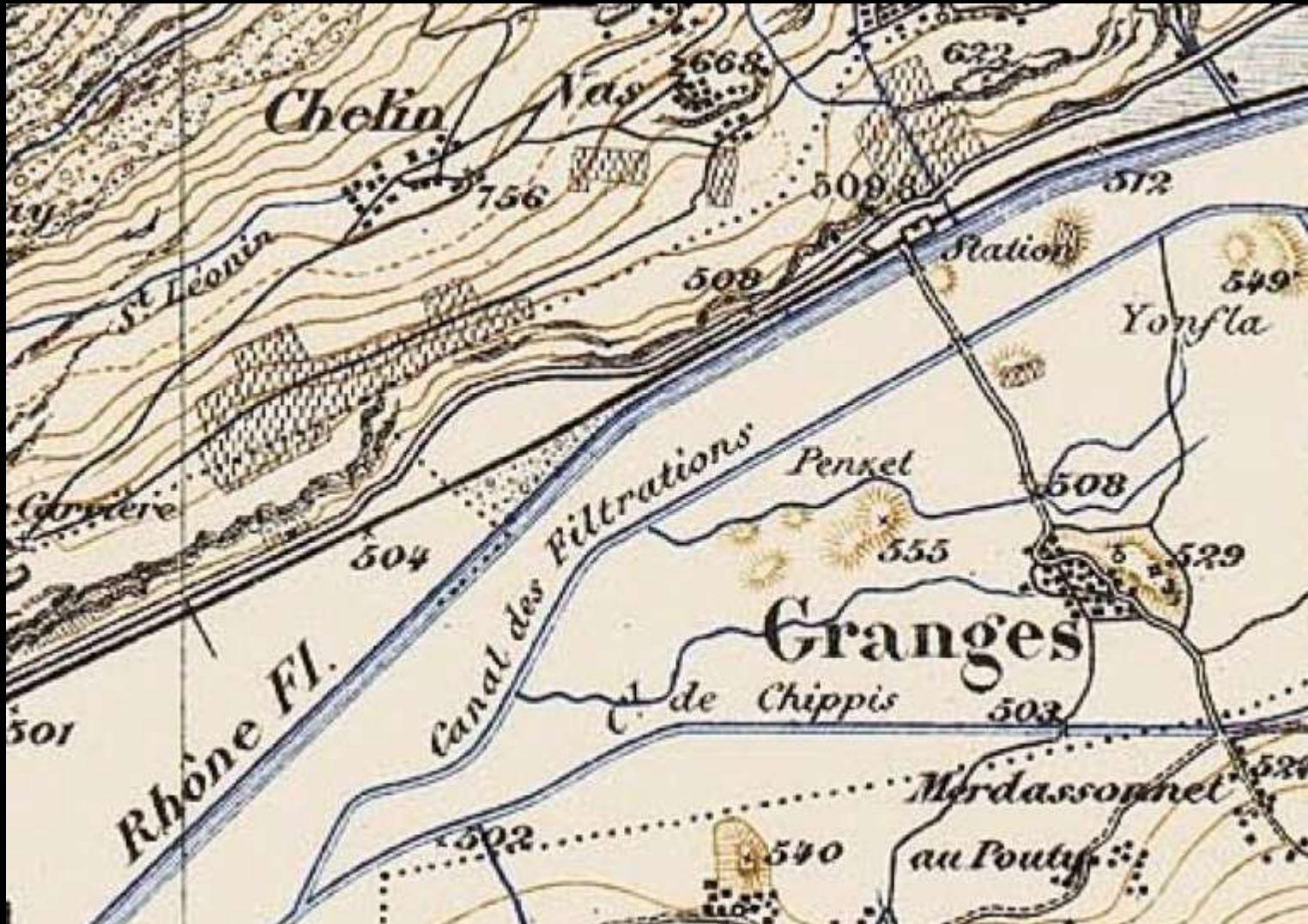
Until 1949

1:50'000
1:25'000

376.86 m

Contour lines: 30 m
Contour lines: 10 m

Equivalent conical



National map

1938-1964

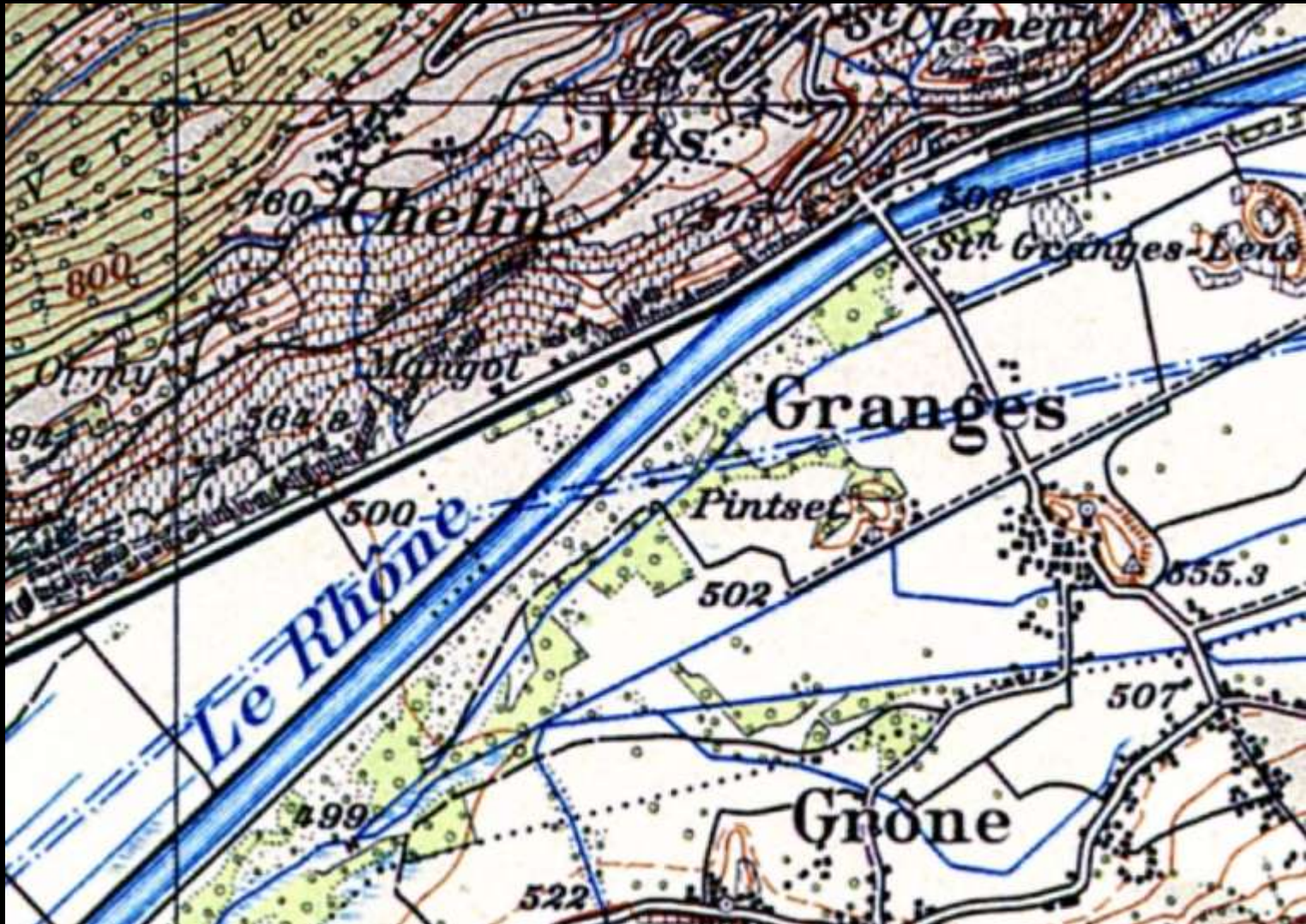
Six years

1:50'000

373.6 m

Contour lines: 20 m

Conformal oblique cylinder



National map

1952-1979

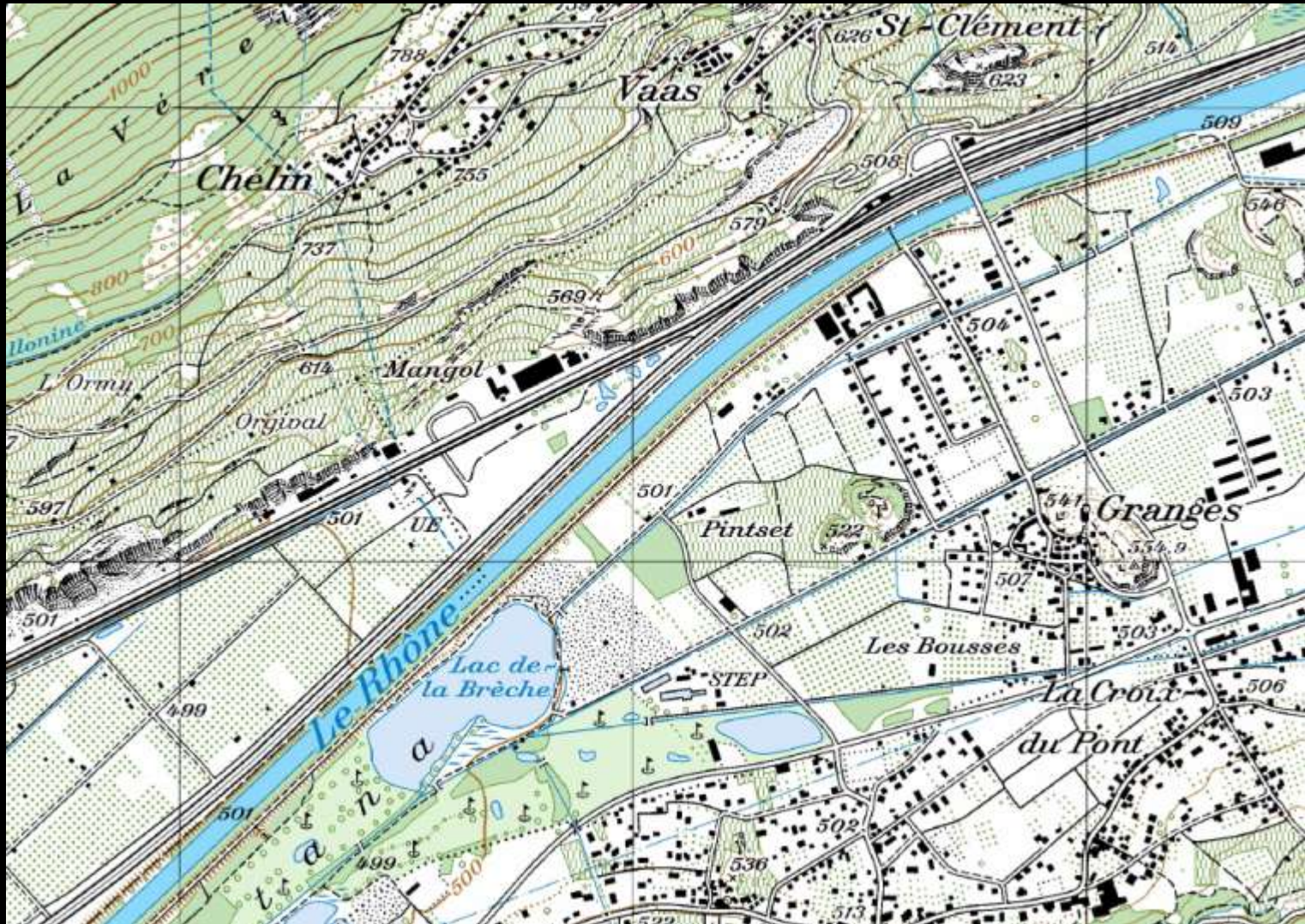
Six years

1:25'000

373.6 m

Contour lines: 10 m
Alps: 10 m

Conformal oblique cylinder



[Introduction](#)

[Historical maps](#)

[Methodology](#)

[Examples](#)

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Methods

- Integration of the maps in a GIS
- Digitalisation of territorial features
- Why a GIS?
 - Storing, sharing and updating of data
 - Representation of historical landscapes
 - Quantification
 - Analysis of evolution of territorial features through time
 - 3D representation

Problems

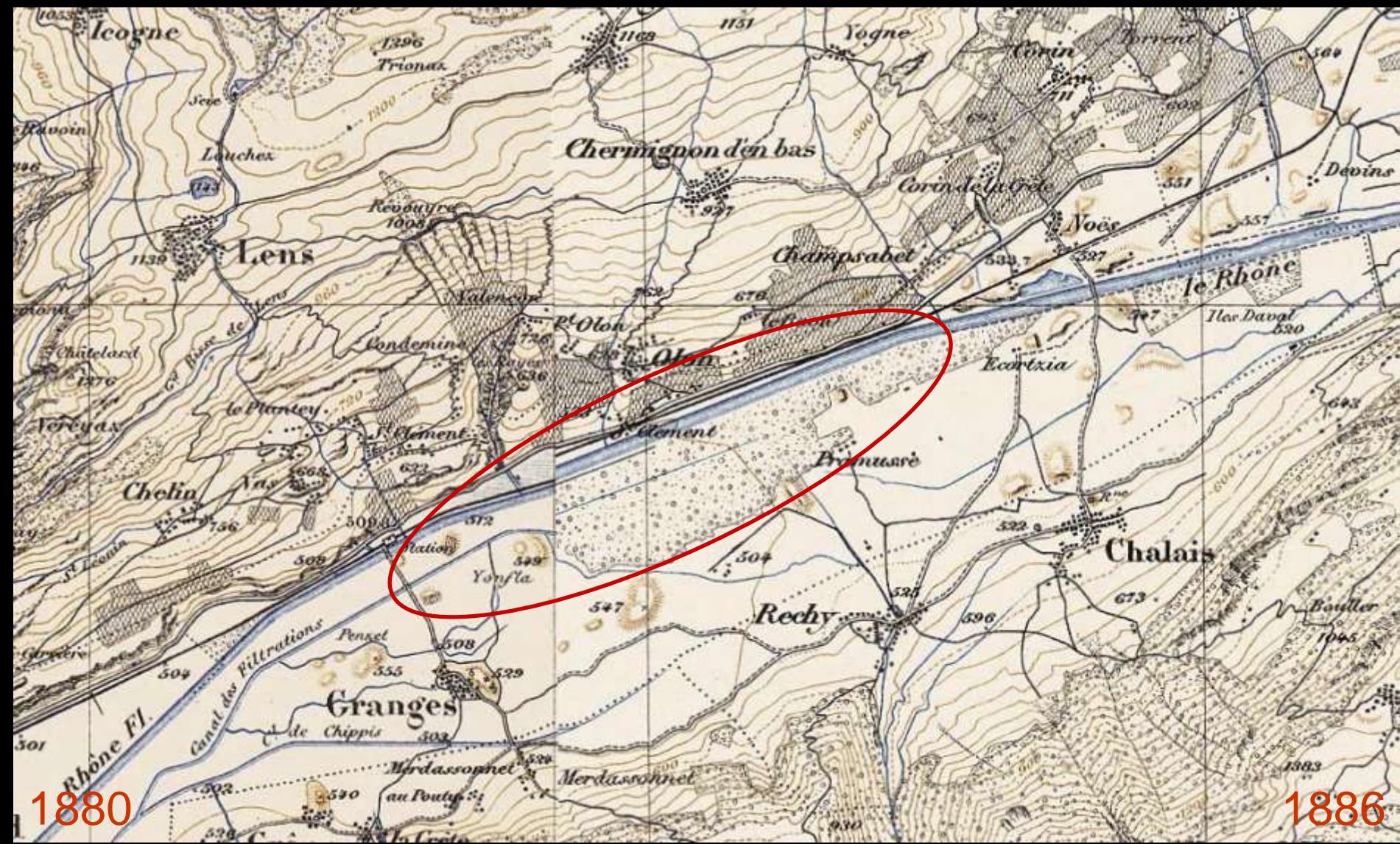
- Accuracy of maps
- Season of field survey
- Lack of landscape's dynamic

1802



1839





Rhone river alluvial plain



Source: <http://www.vs.ch/Navig/navig.asp?MenuID=5217>



Source: rhone.vs, n° 7, décembre 2004



Photo: E. Reynard

Rhone river alluvial plain



Source: rhone.vs, n° 5
décembre 2003



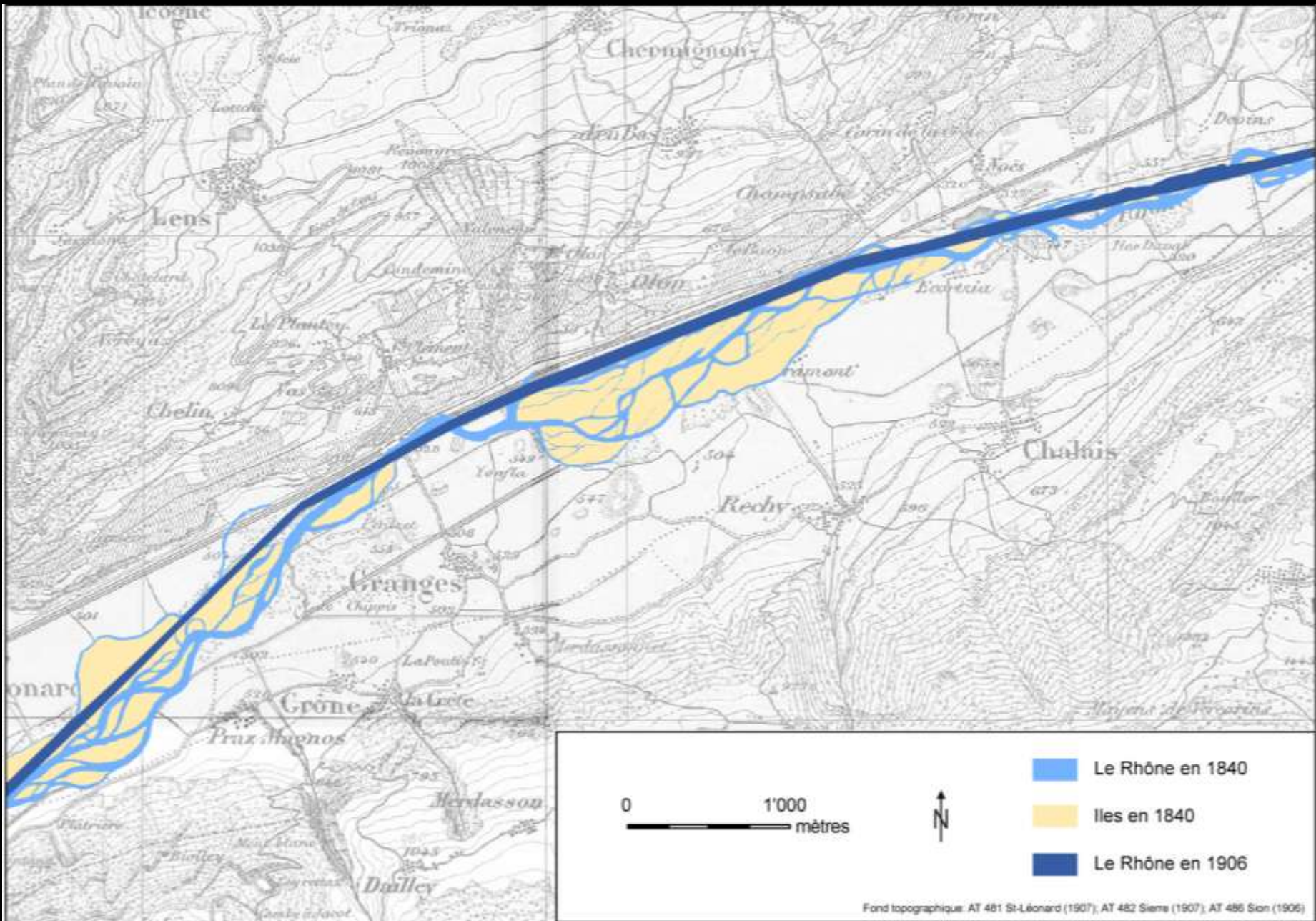
Source: rhone.vs, n° 3, décembre 2002

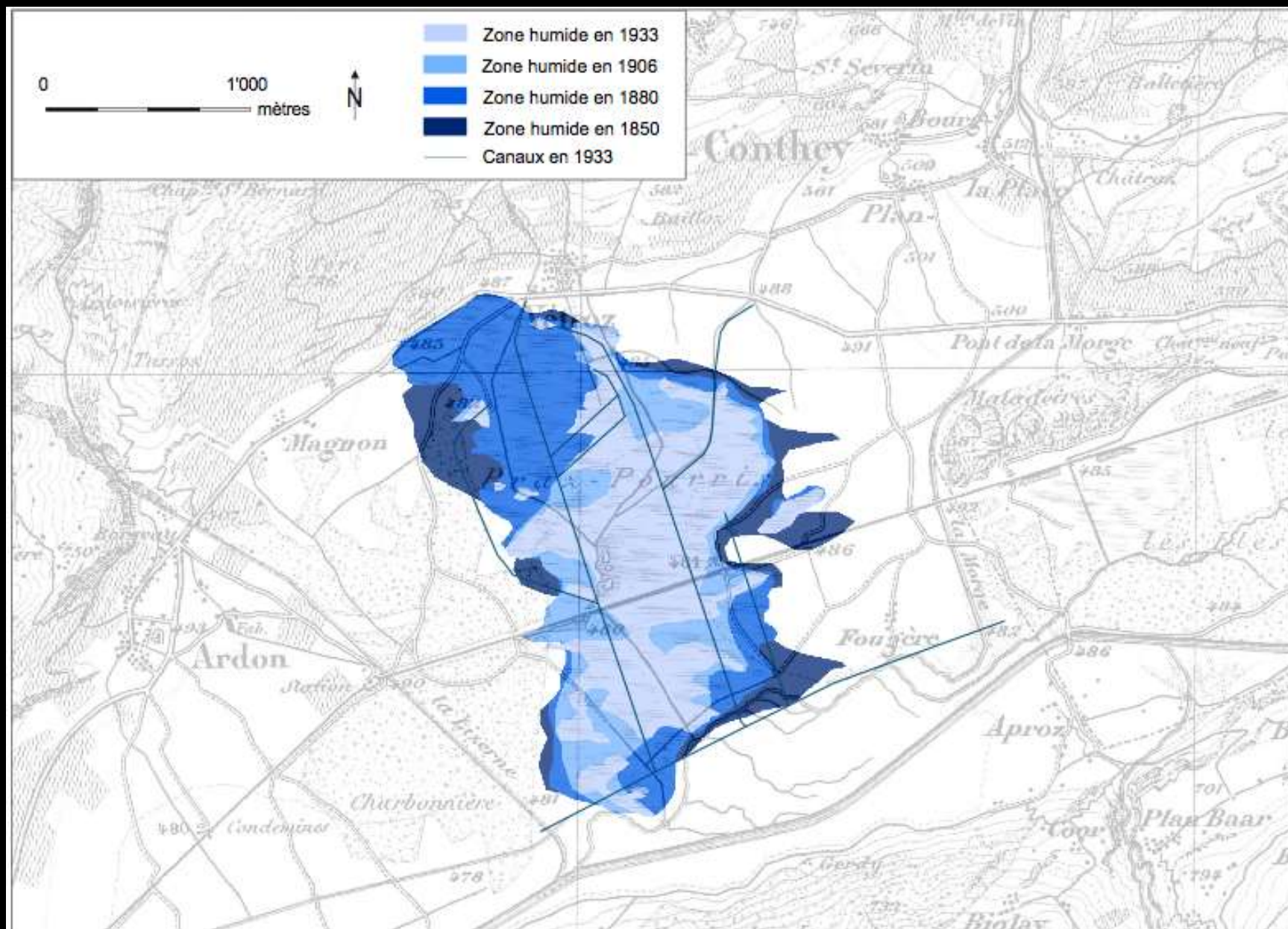


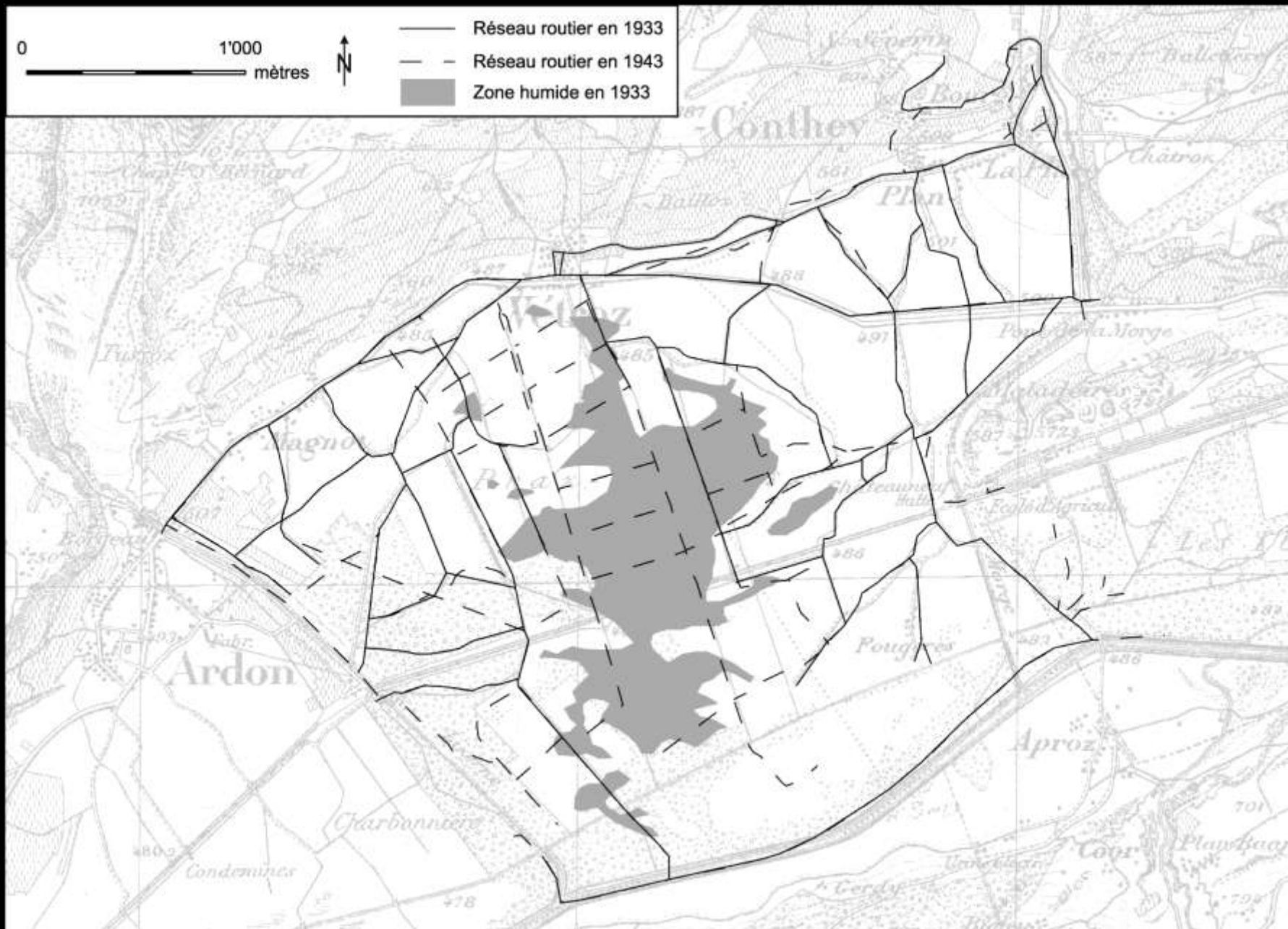
Source: rhone.vs n° 1, juin 2001

Rhone river alluvial plain

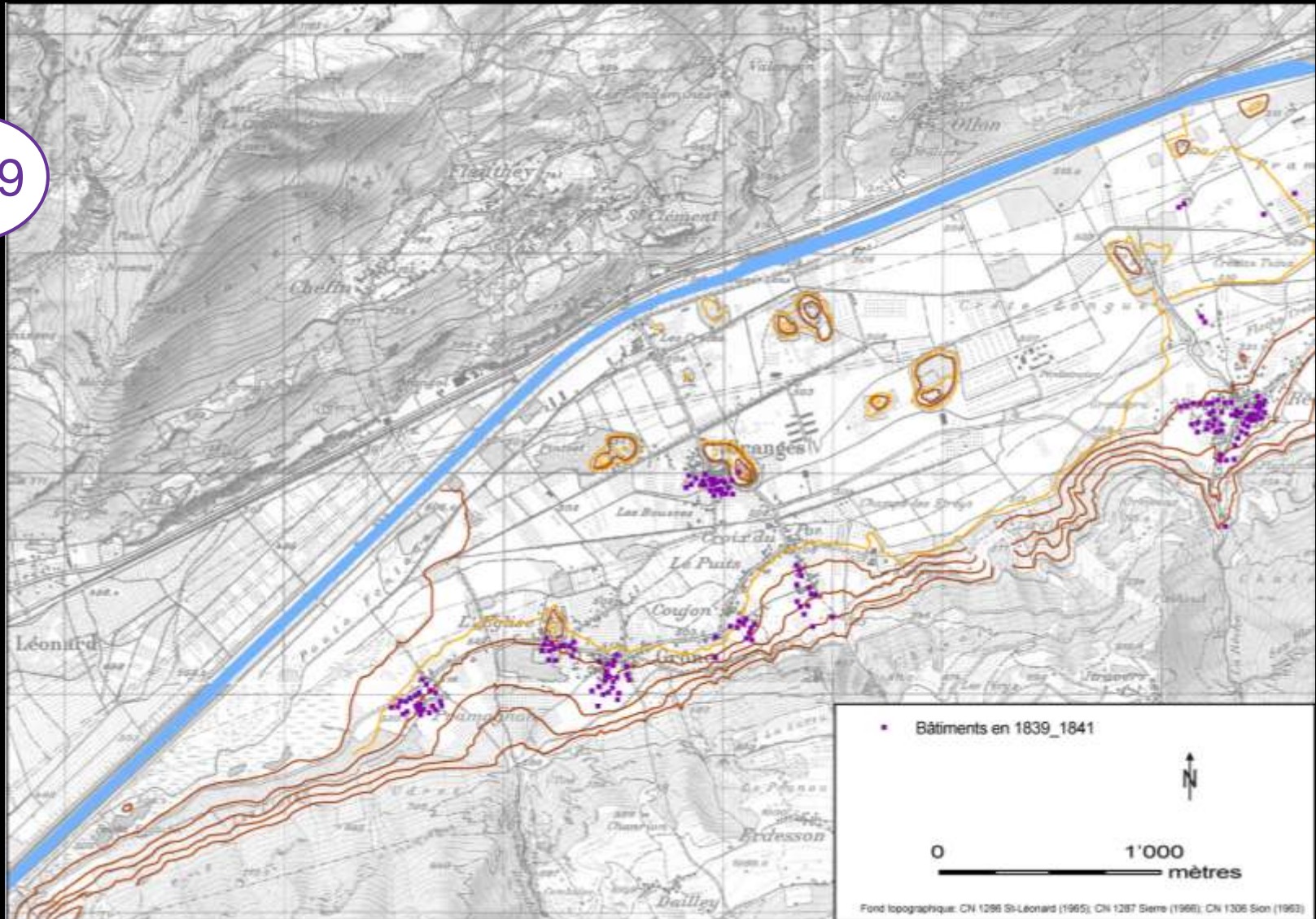
- Before 1850: “natural state”
- 1863-1894: 1st Rhone river correction
- 1900’s-1960’s: development of agriculture
- 1960’s-today: urbanization





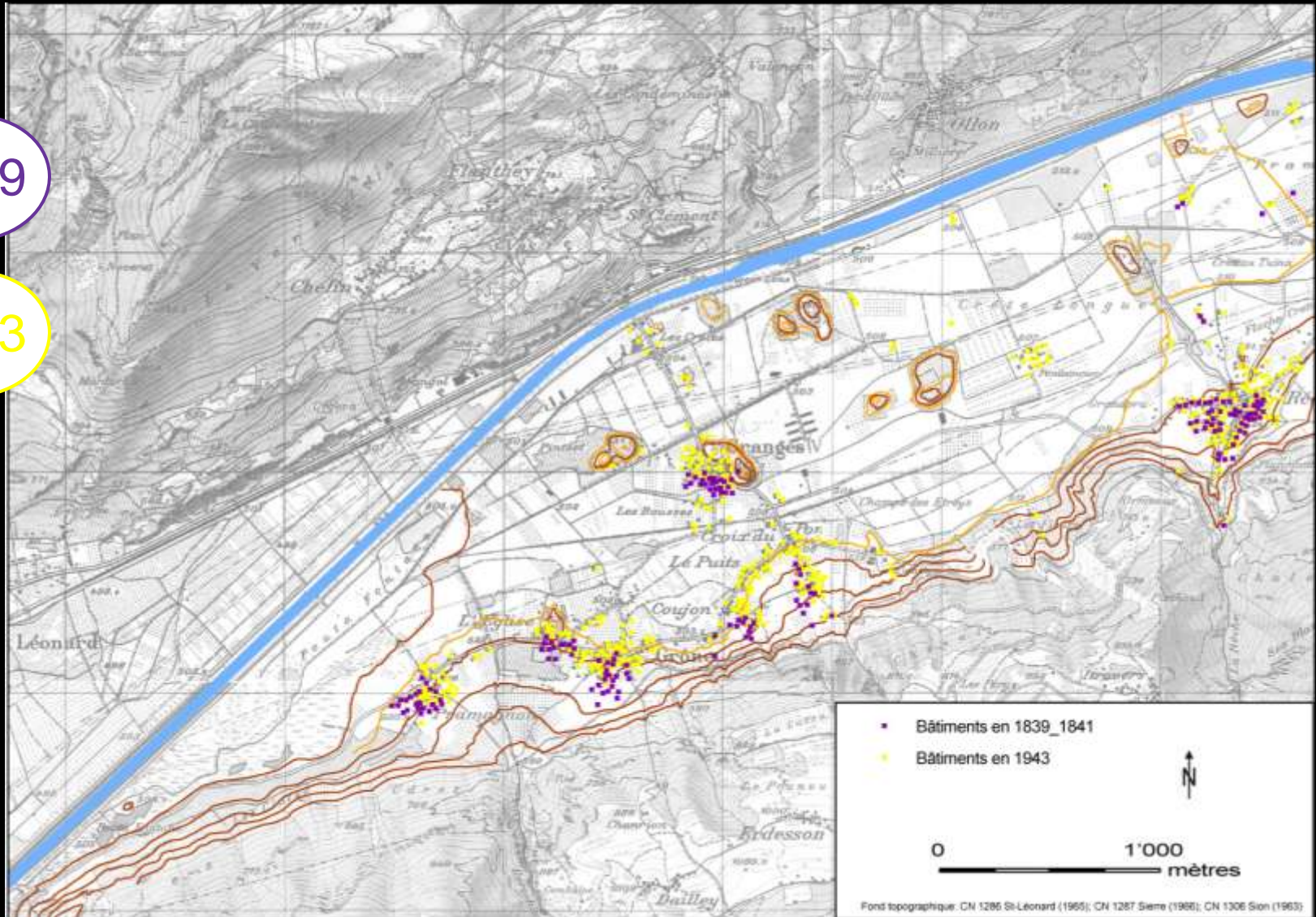


1839



1839

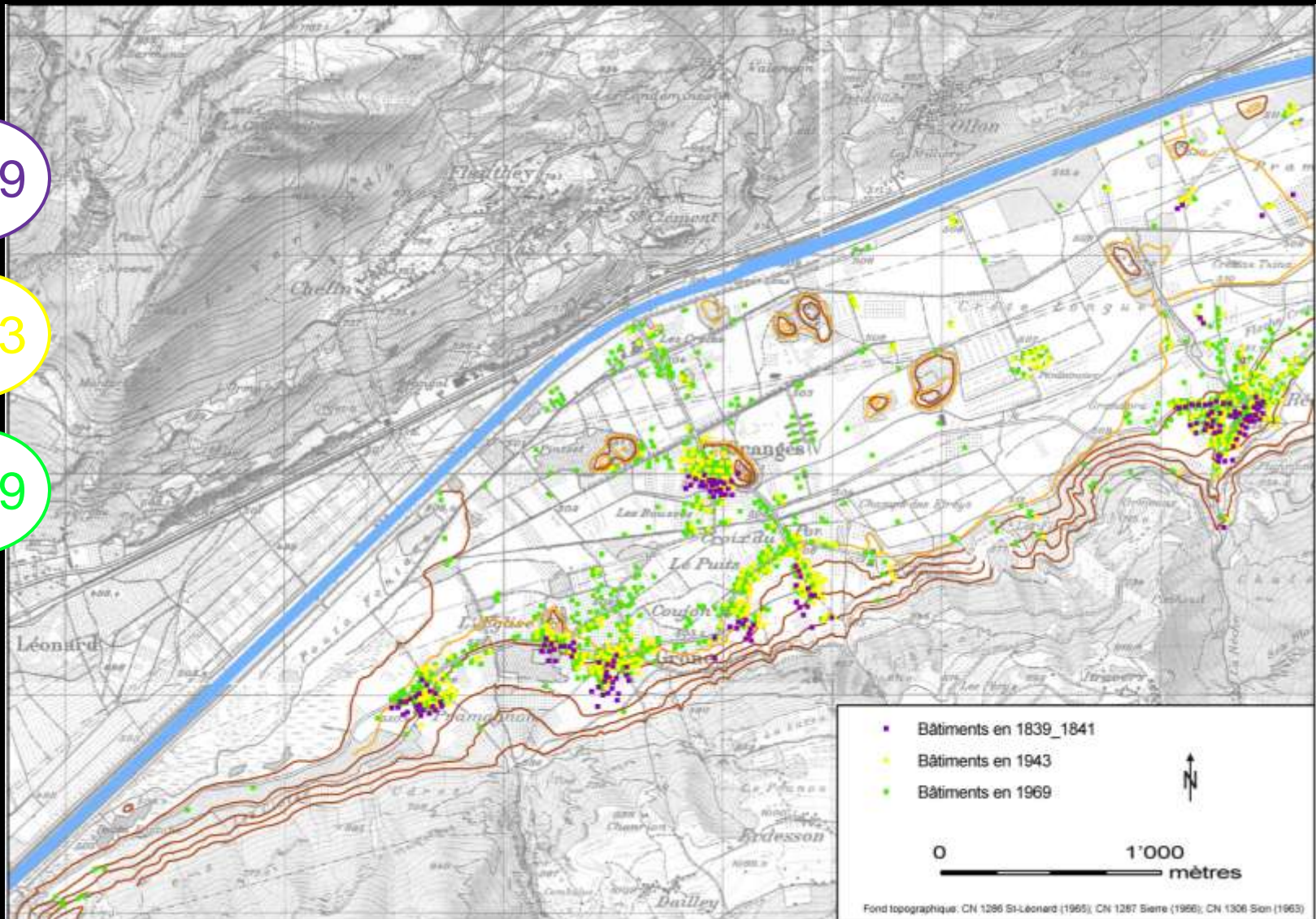
1943



1839

1943

1969

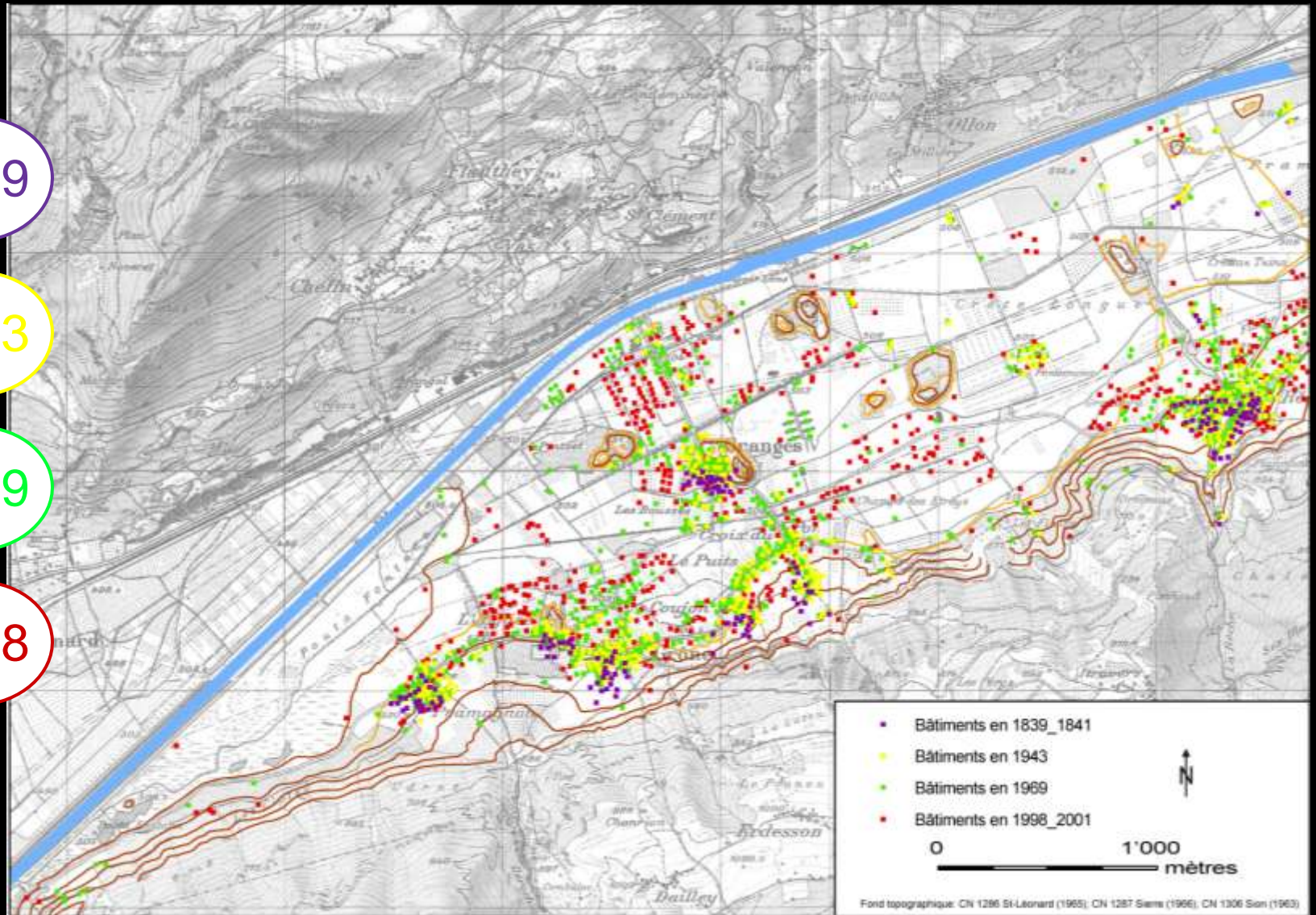


1839

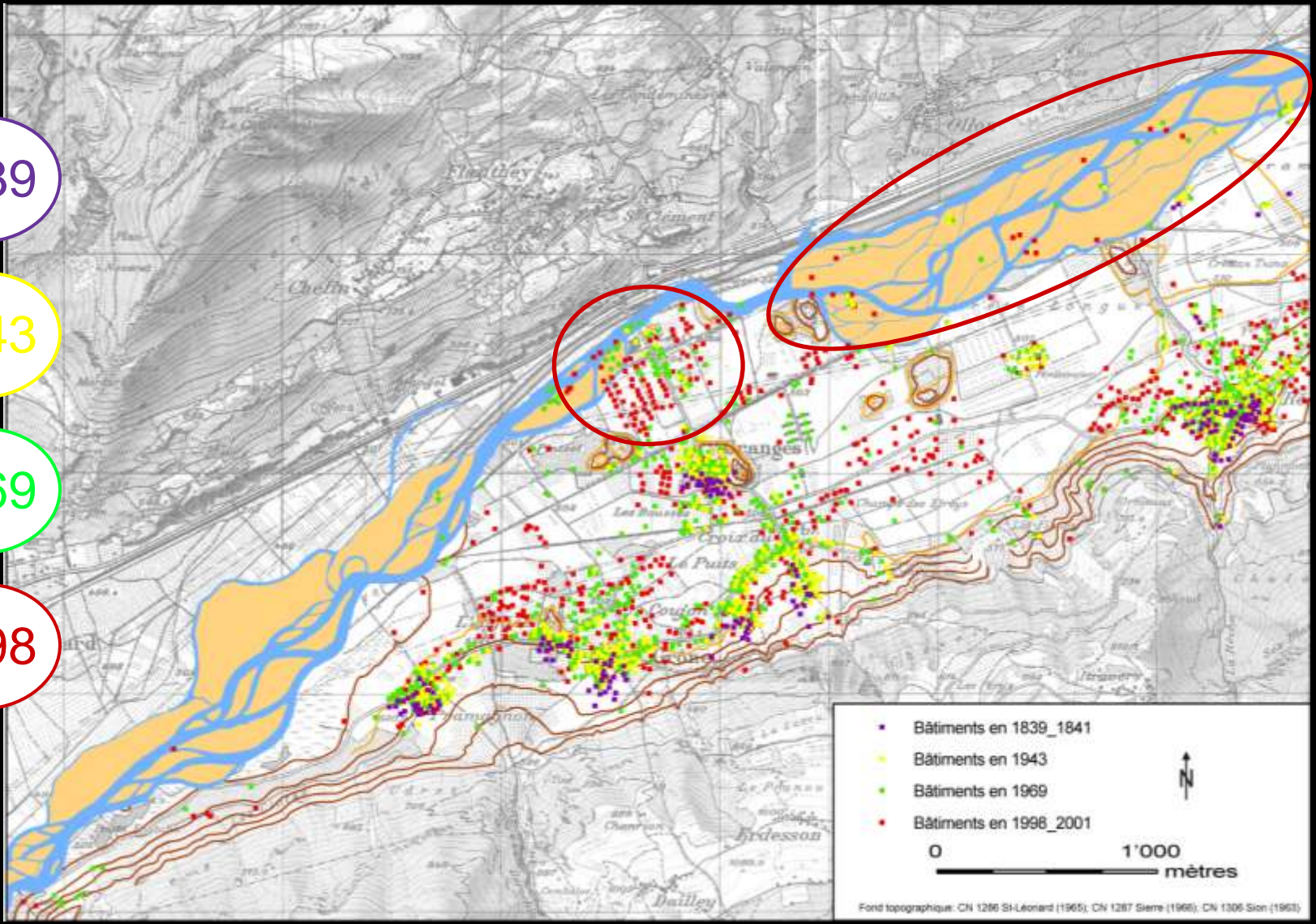
1943

1969

1998



- 1839
- 1943
- 1969
- 1998



Conclusion

- Heterogeneous spatial information
- Reconstruction always partial
- First step in understanding landscape change: formulation of hypothesis on landscape driving forces
- Further investigation such as interviews of actors, consultation of archive, ...

THANK YOU!

