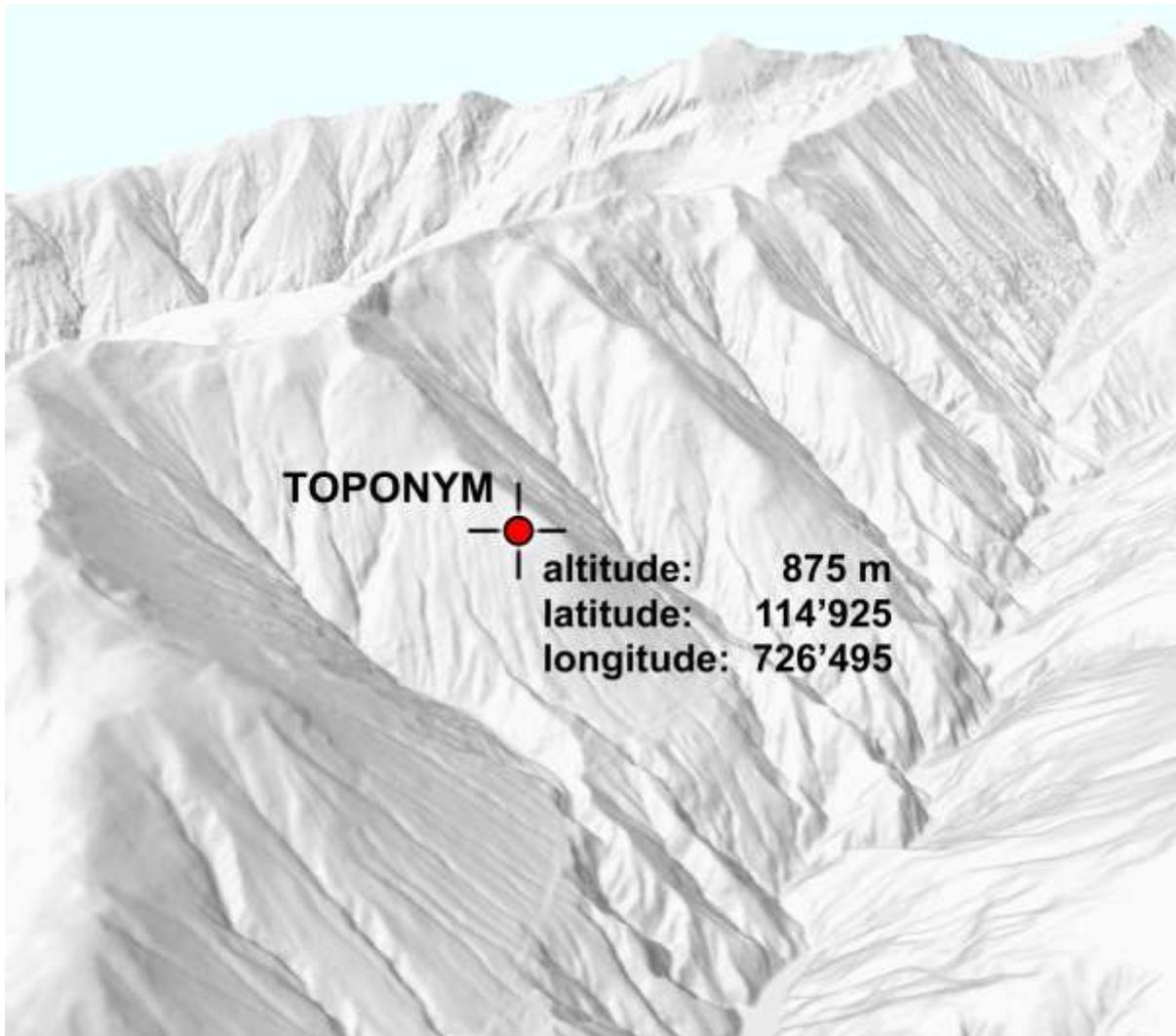


Georeferencing toponyms for an innovative approach to landscape and land use history. Works in progress at the WSL in Bellinzona



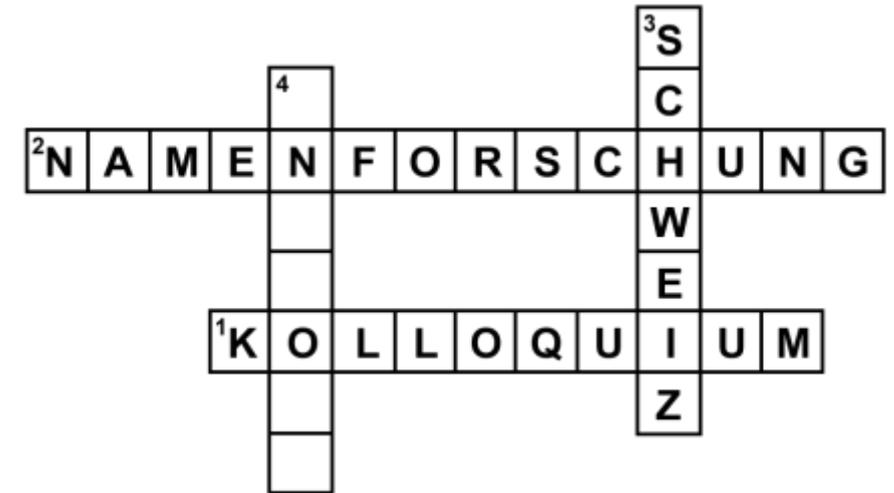
Patrik Krebs

Marco Conedera

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Claudio Bozzini

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Swiss Federal Research Institute WSL

Insubric Ecosystems Group

CH - 6500 Bellinzona

patrik.krebs@wsl.ch



Summary

- **Some introductory reflections.**
- **Place names related to ancient protected forests.**
- **Place names related to the wood charcoal industry.**
- **Place names containing “*brüsáda*” (the burn).**

Let me start with some reflections...

Toponyms need interdisciplinarity !!

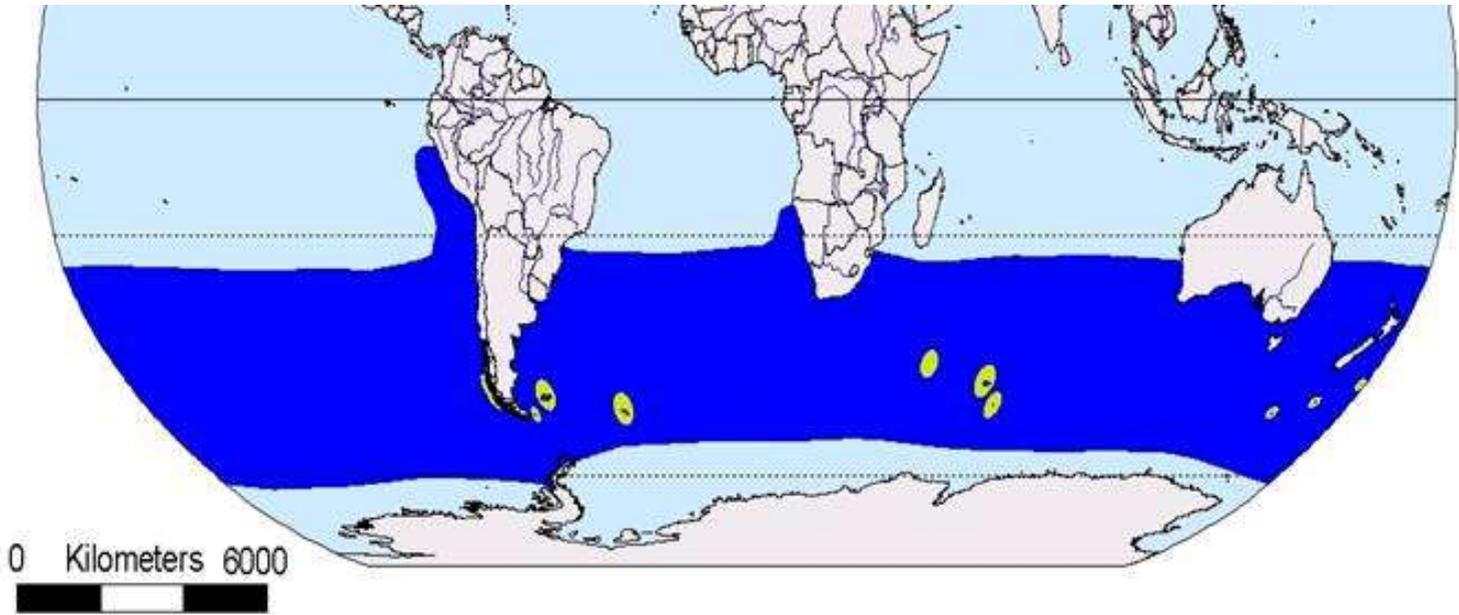
Opponents to interdisciplinarity see their knowledge in a protectionist manner, and forget that each scientific discipline has its own life, in the sense that it can exist even without the scientists who practice it.

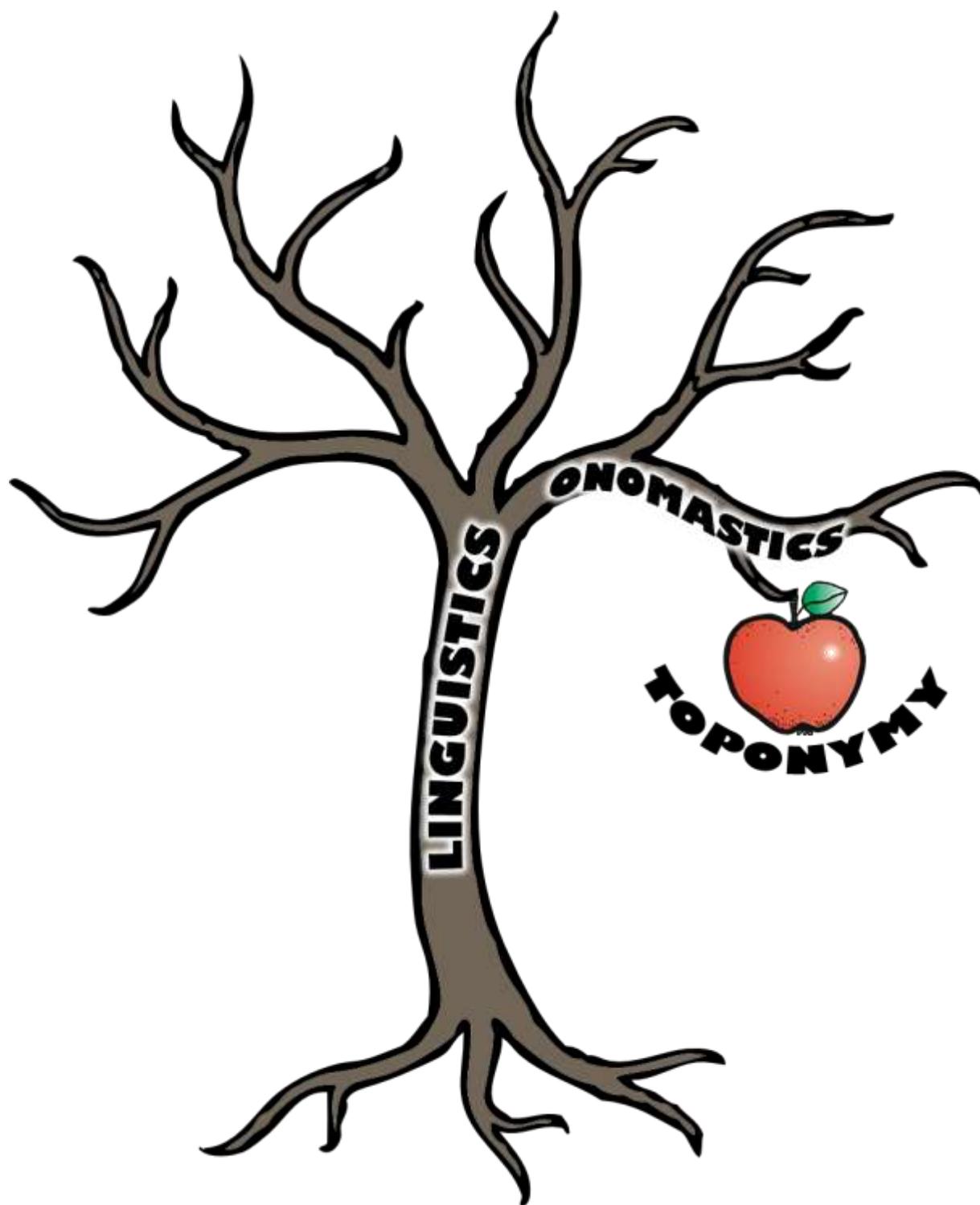
As scientific knowledge, even science itself does not belong to the scientists, and can exist without them.

For instance nearly everyone has to be a researcher in the field of the geography of the supermarkets



...and in many senses an albatross is a better geographer than me...





Place names are a typical object of study for linguists and philologists

But toponymy can not be seen only as a branch of linguistics

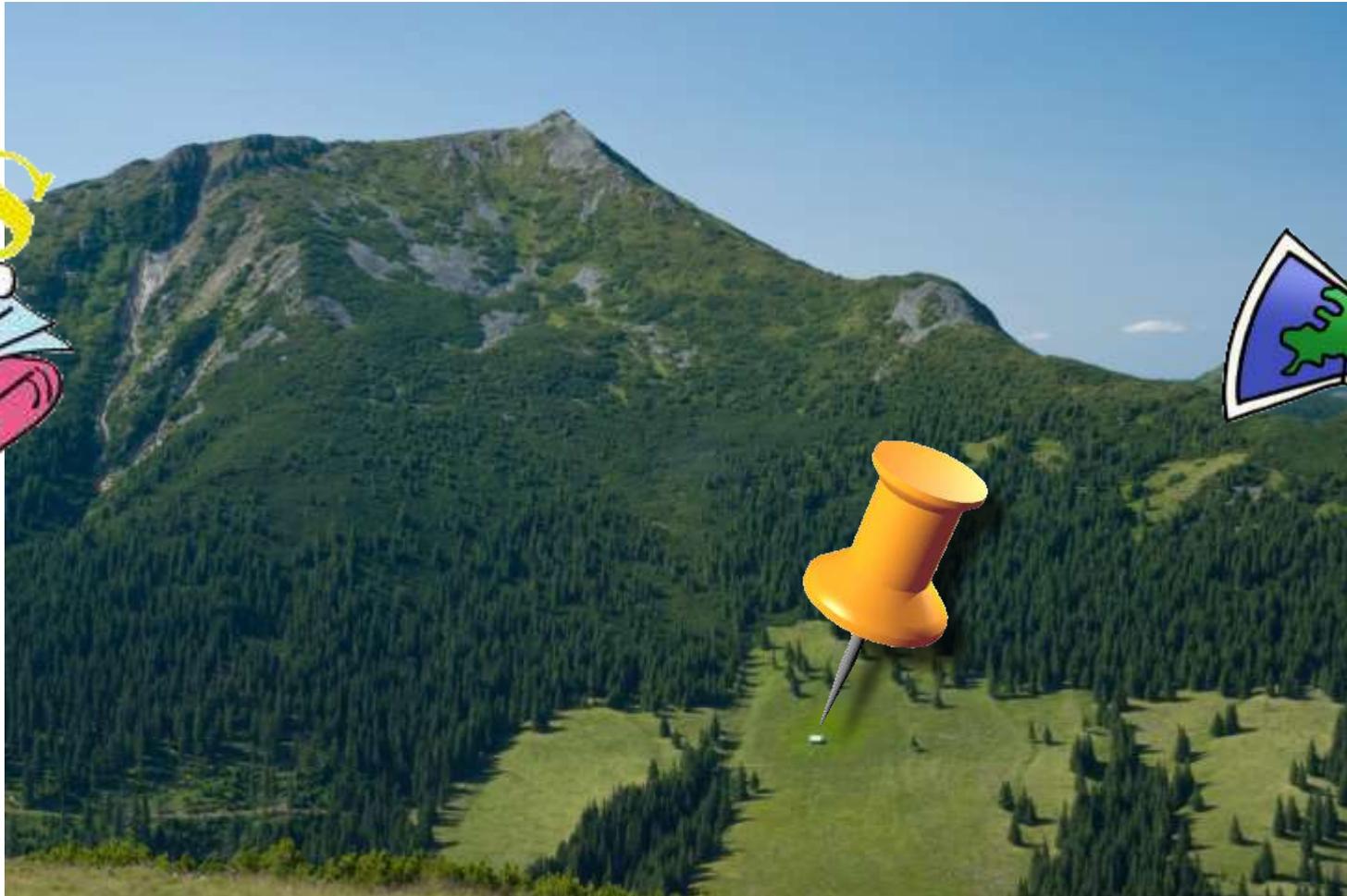


We need more interdisciplinarity to obtain a more comprehensive understanding of place names



A toponym is a linguistic phenomenon (the people giving the name to), but also a geographic reality (the place receiving the name)

Considering their dual nature, it would be better to study toponyms using both the approaches and instruments of linguists and of geographers



Why is it so important to obtain a comprehensive knowledge of all the traditional place names in a municipal territory ???

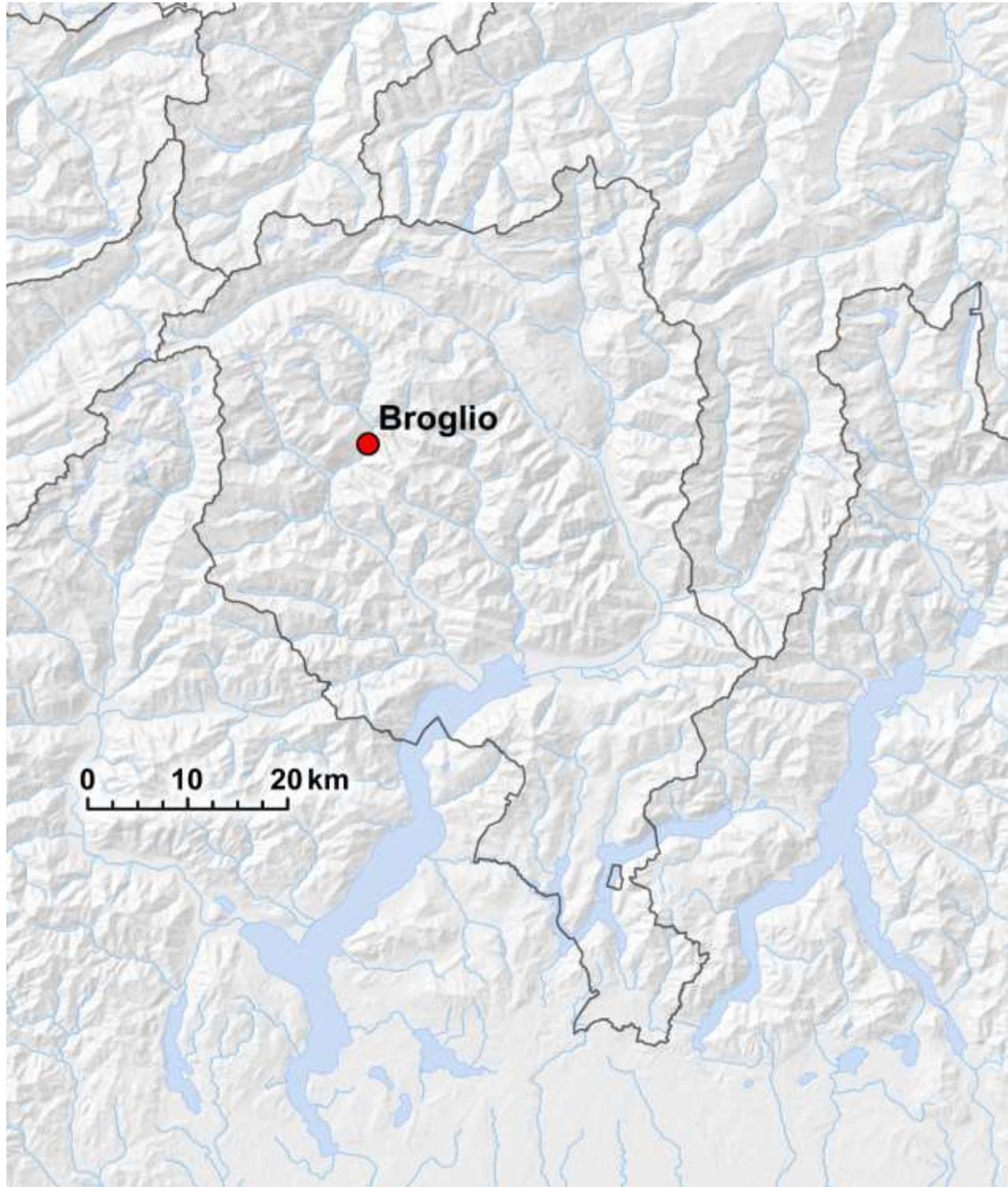
toponym



The knowledge of traditional place names is fundamental for the correct interpretation of historical documents (e.g. old manuscripts)

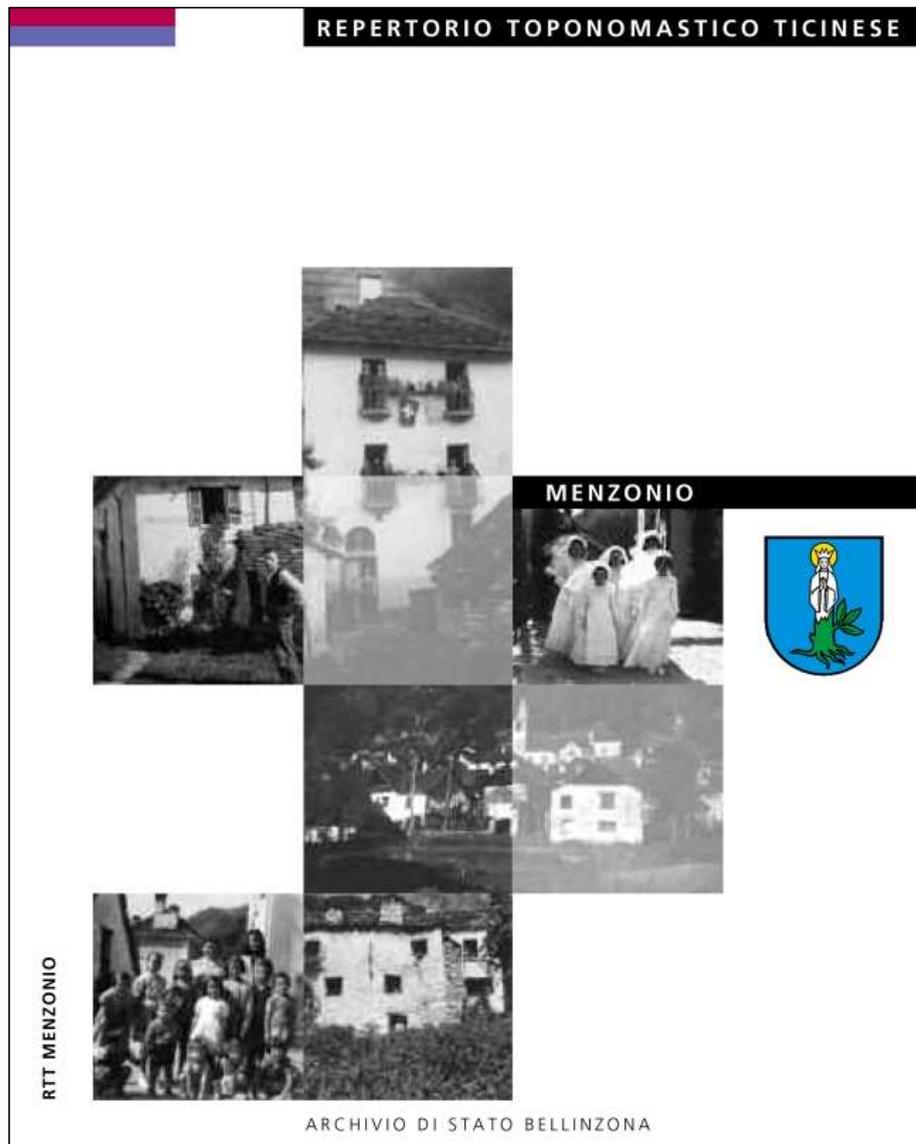
This is even more true in the alpine environment where, owing to the complexity and tridimensionality of land surface, and because of the direct impact of natural resources and hazards on human life, traditional human communities developed a sort of visceral bond with their territory



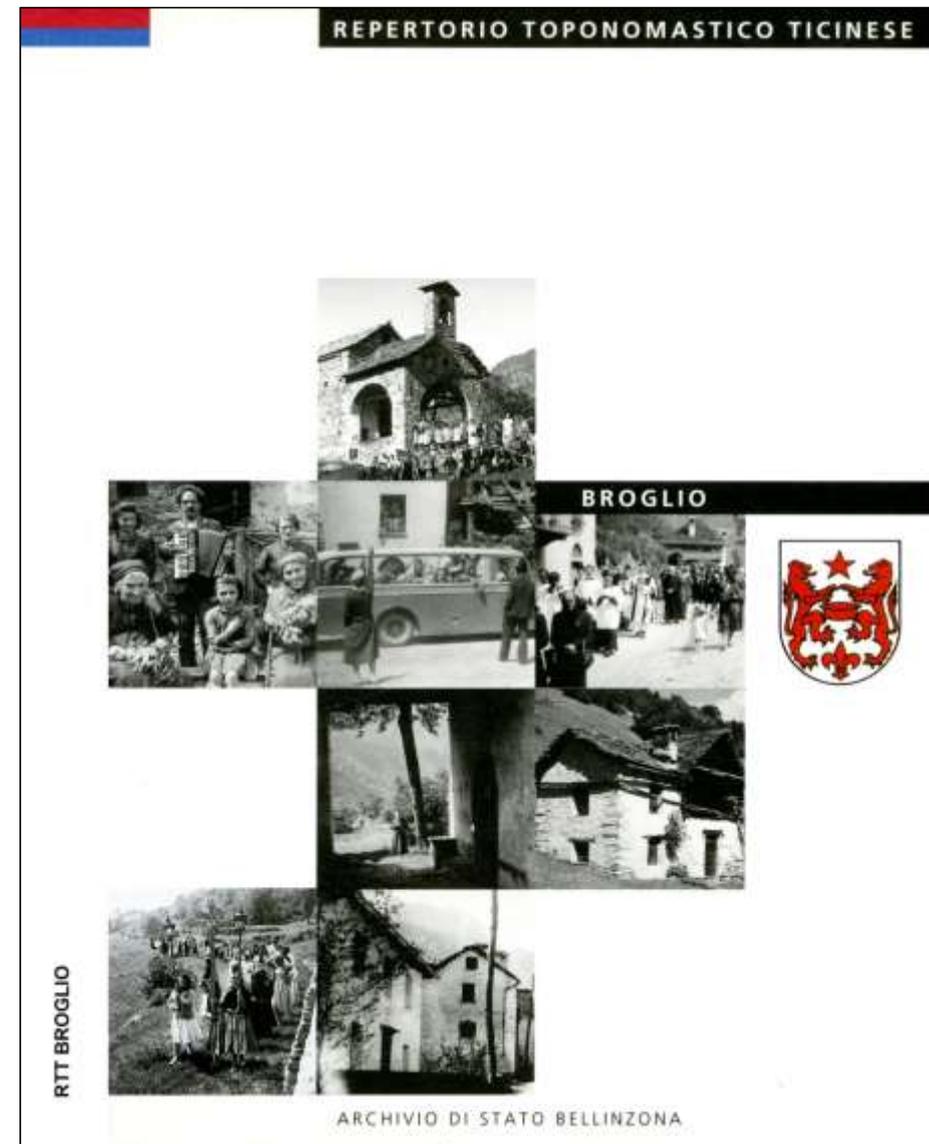


The example of the village of Broglio
in the upper part of Maggia valley

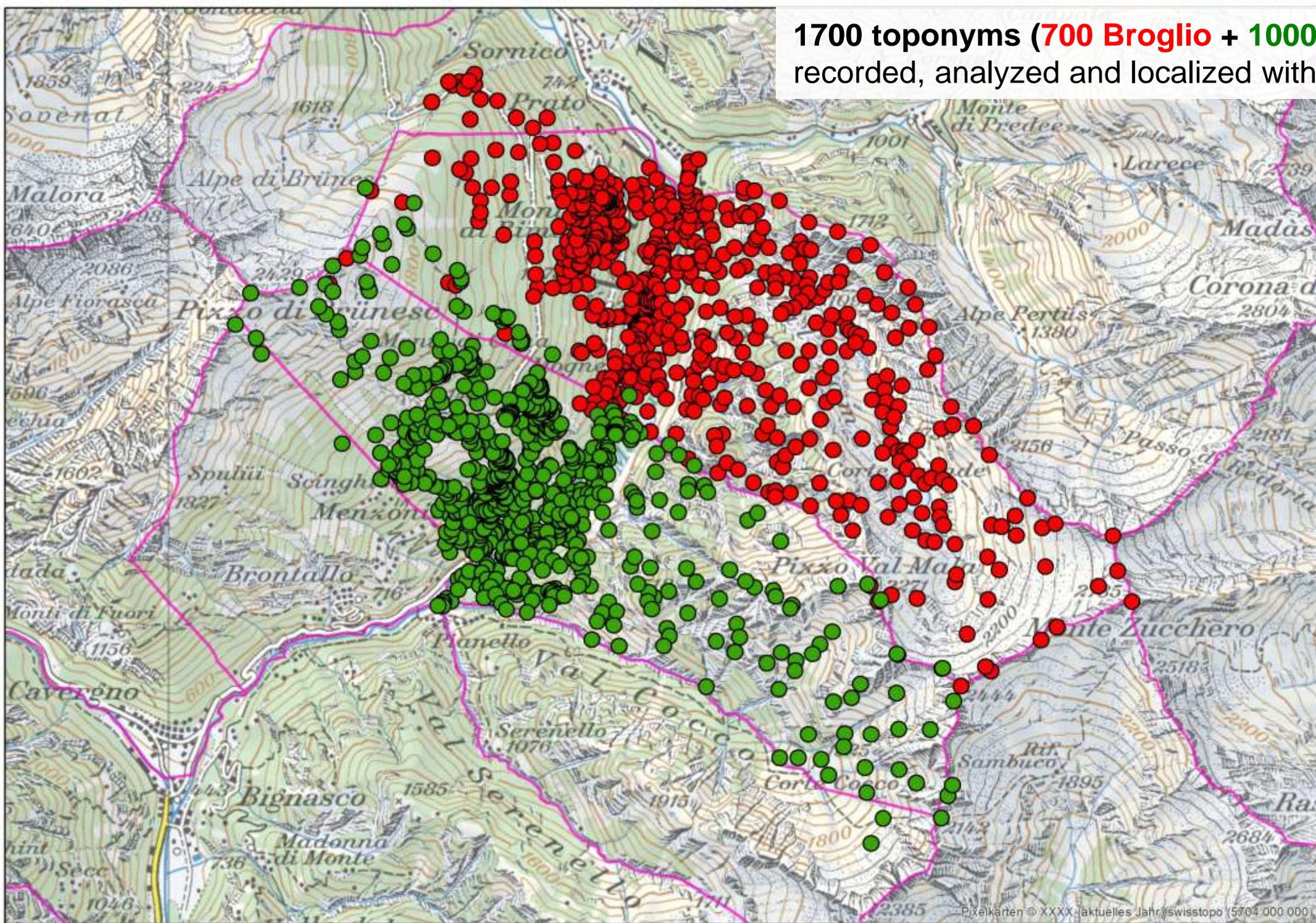
B. Donati, *et al.*, 2013
1000 toponyms in 350 pp.



B. Donati, S. Vassere, *et al.*, 2006
700 toponyms in 250 pp.



1700 toponyms (700 Broglio + 1000 Menzonio)
recorded, analyzed and localized with every possible care



Un esempio fra i tanti:
La Piòda di Lèter



RTT Menzonio

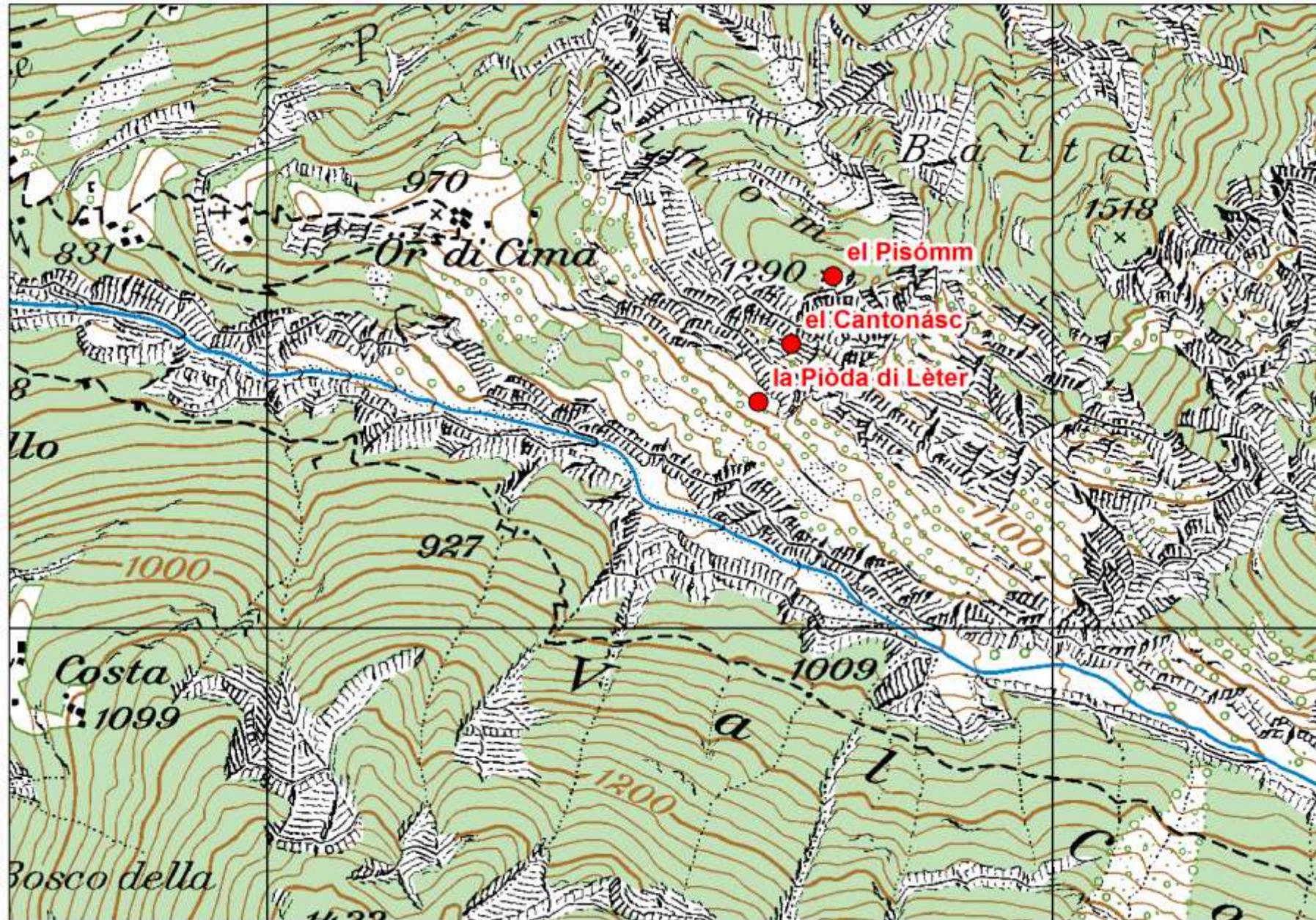
REPERTORIO TOPONOMASTICO TICINESE

MENZONIO

RTT MENZIONIO

ARCHIVIO DI STATO BELLINZONA

Un esempio fra i tanti:
La Piòda di Lèter



RTT Menzonio

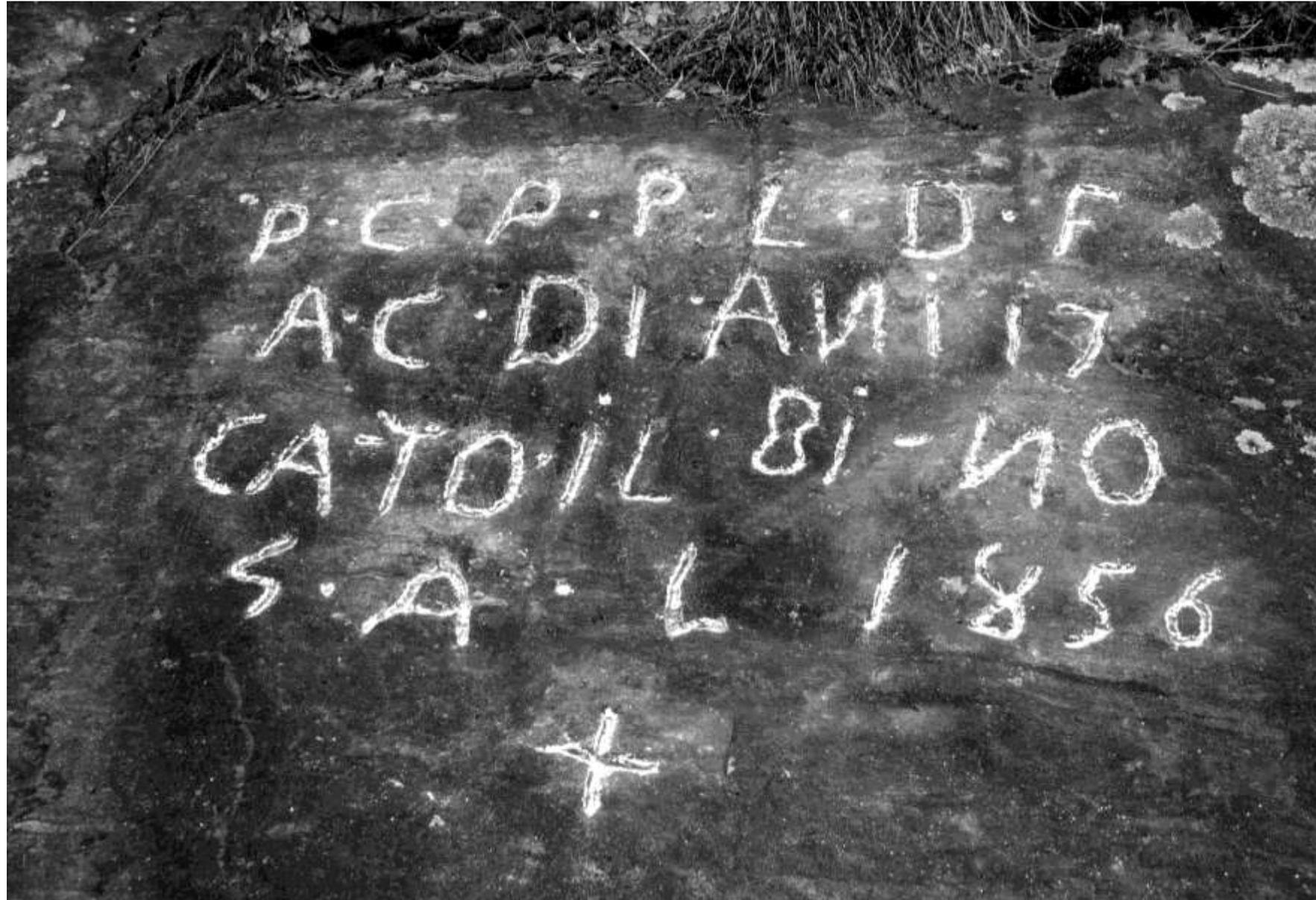
REPERTORIO TOPONOMASTICO TICINESE

MENZONIO

RTT MENZONIO

ARCHIVIO DI STATO BELLINZONA

Un esempio fra i tanti:
La Piòda di Lèter



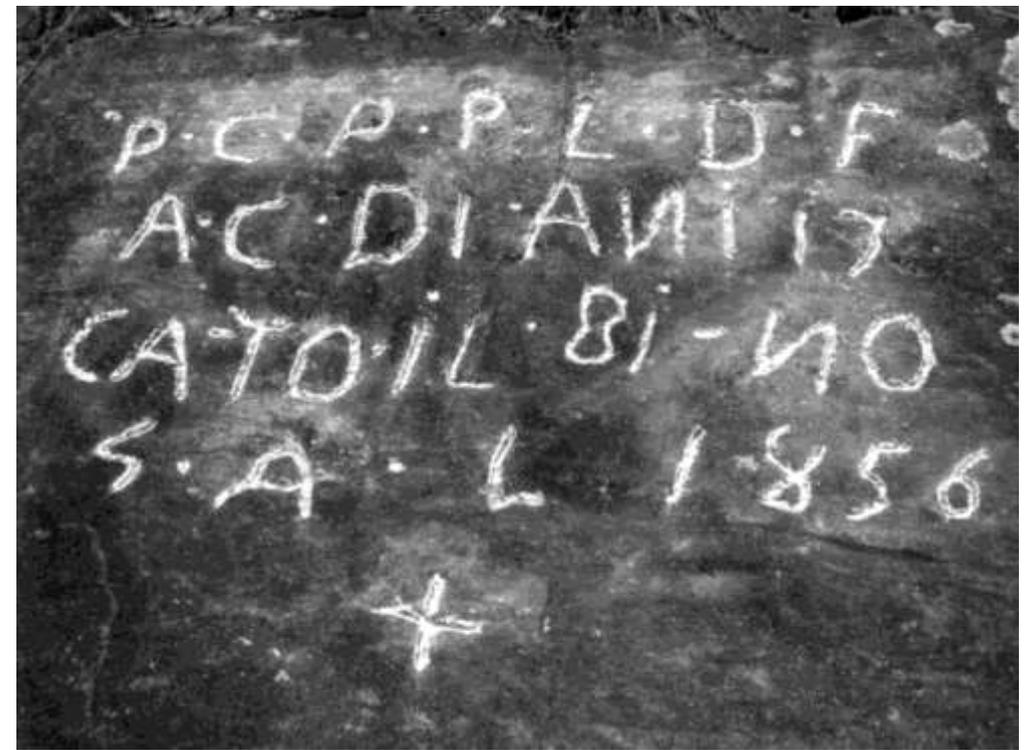
RTT Menzonio



Un esempio fra i tanti:
La Piòda di Lèter

p. 318 «la Piòda di Lèter»

Il luogo giace ai piedi della vertiginosa parete che demarca il *Pisómm* sul lato della *Vall Còcch*, tagliata obliquamente dalla corona del *Cantonásc*. Sulla pietra liscia è stata scolpita una lunga scritta che ricorda una disgrazia, la caduta di un giovane, precipitato dal *Cantonásc*.

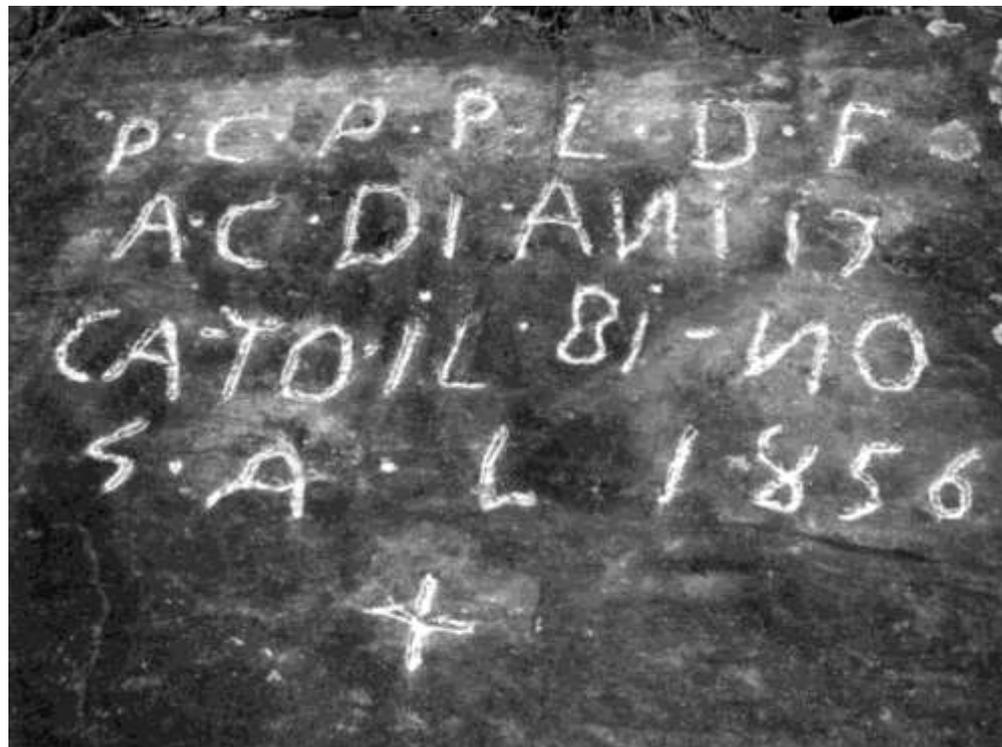


Un esempio fra i tanti:
La Piòda di Lèter

p. 318 «la Piòda di Lèter»

Il testo è caratterizzato da numerose iniziali, che è stato possibile decifrare in parte nel modo seguente:

**P. C. P[regate] P[er] L[’anima] D[el] F[u]
A[ntonio] C[onti] DI ANI 17
CA[du]TO IL GI[or]NO
4 A[prile] L[’anno] 1856**

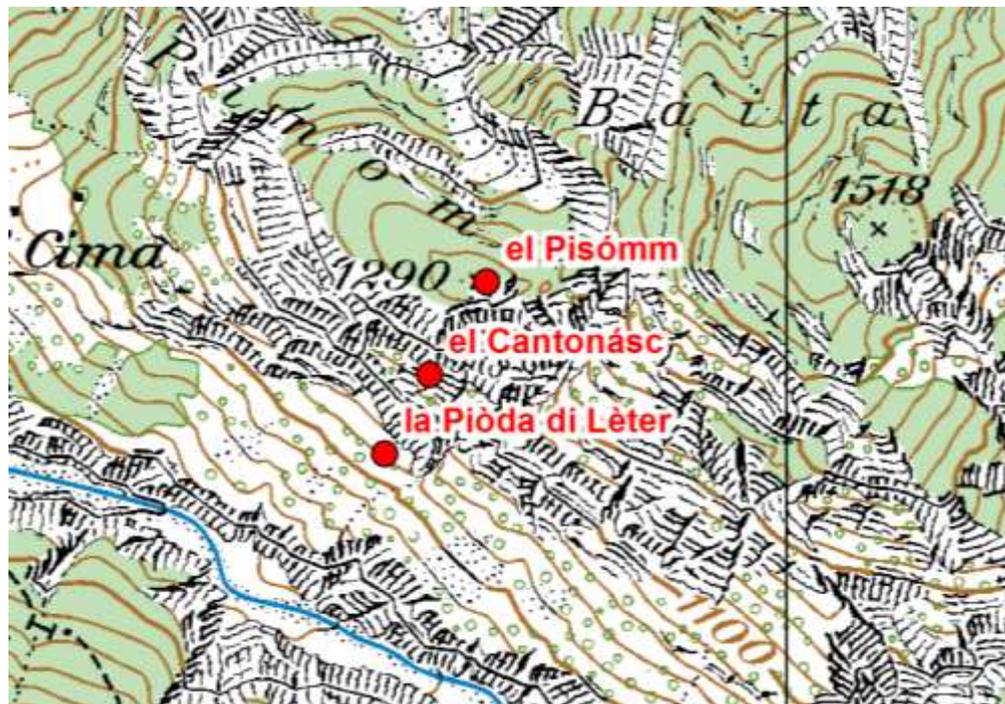
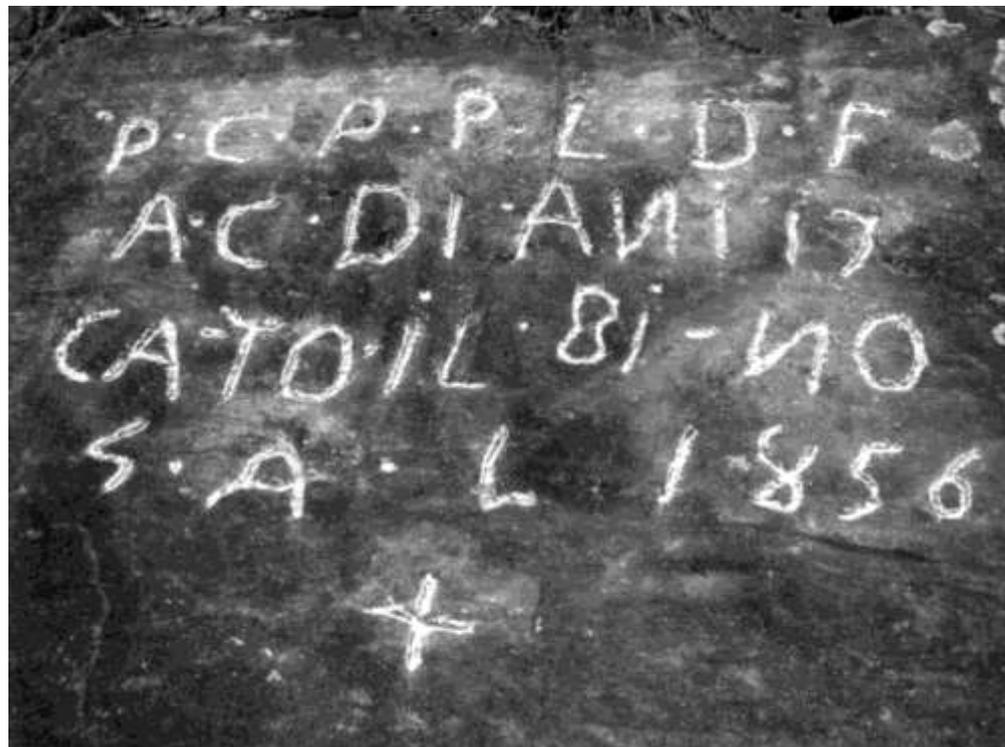


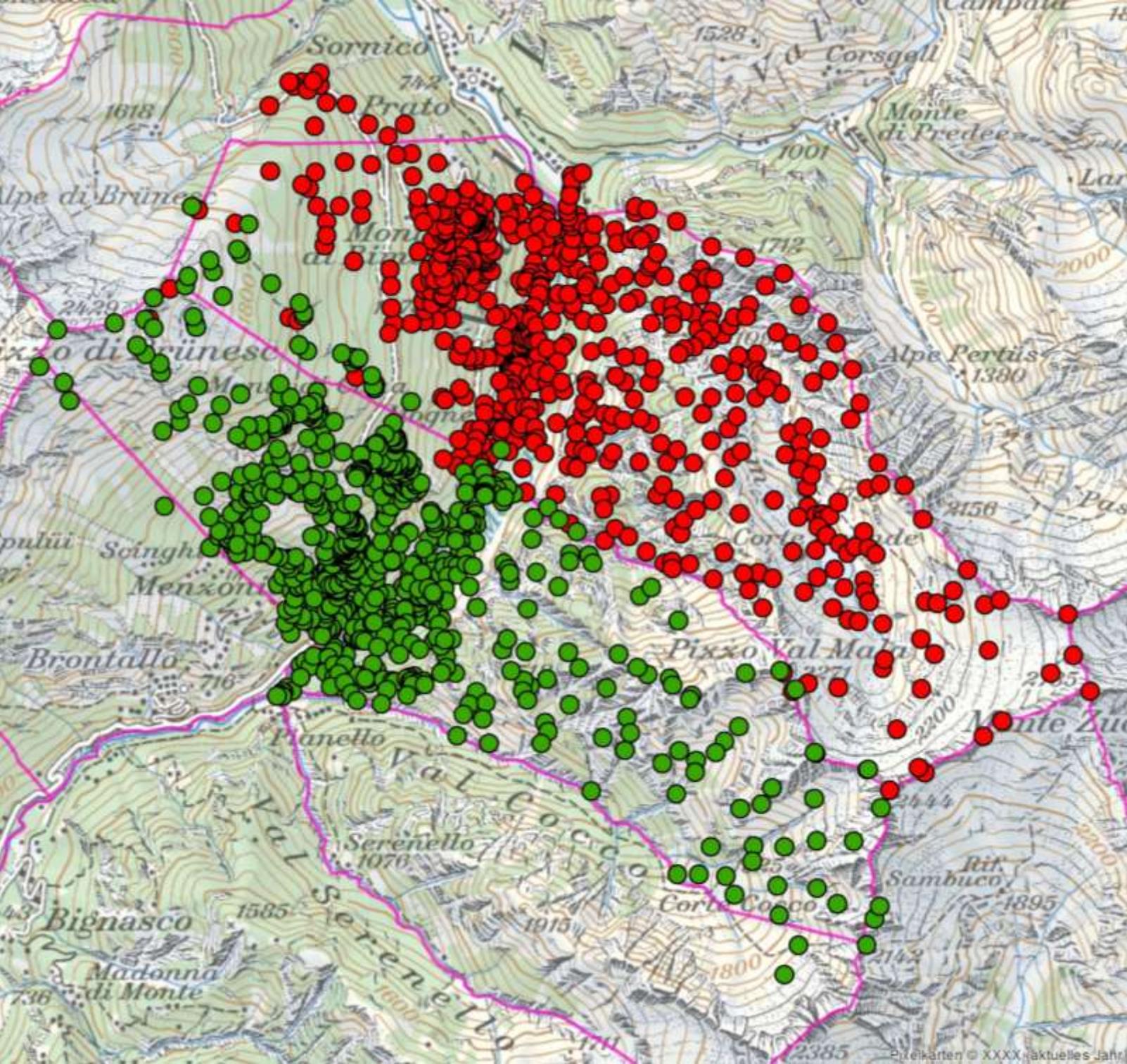
Un esempio fra i tanti:
La Piòda di Lèter

p. 318 «la Piòda di Lèter»

Il fatto è stato registrato dal parroco anche nel libro dei morti:

«Antonius filius Baptista Conti etatis sue annorum decem et octo circiter a rupe in Valle vulgo de Cocco prolapsus est mortuis in communionem S. te Matris Ecclesia»

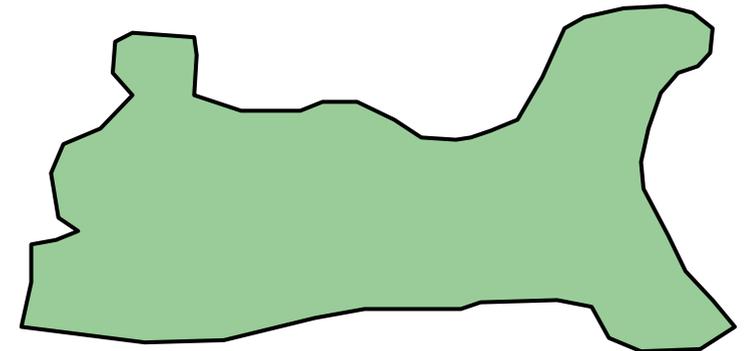


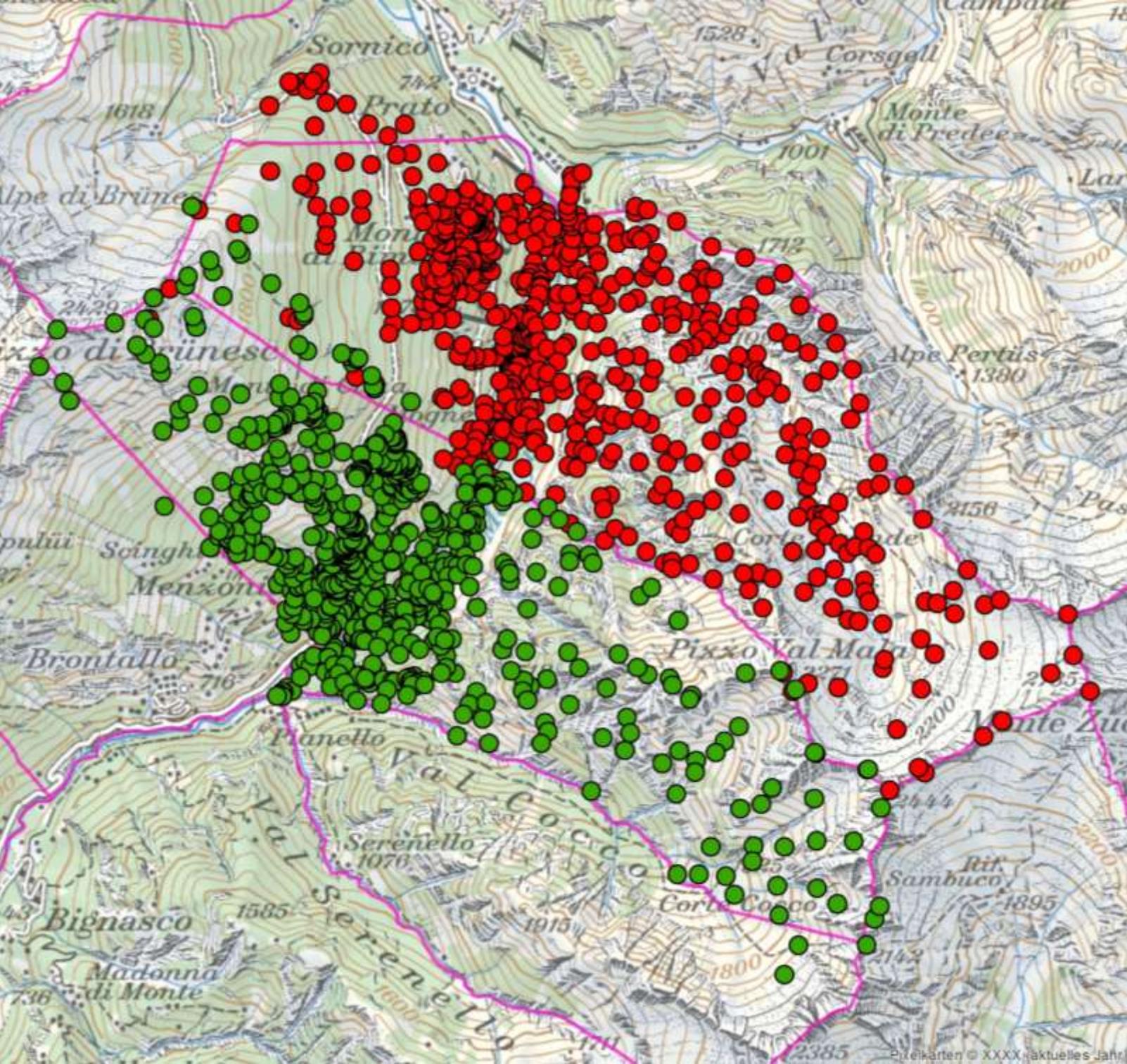


Too often we describe and record every toponym as a single points:



In reality many place-names correspond to complex surfaces and shapes that deserve to be mapped much more carefully and with the maximum of precision as it is possible:

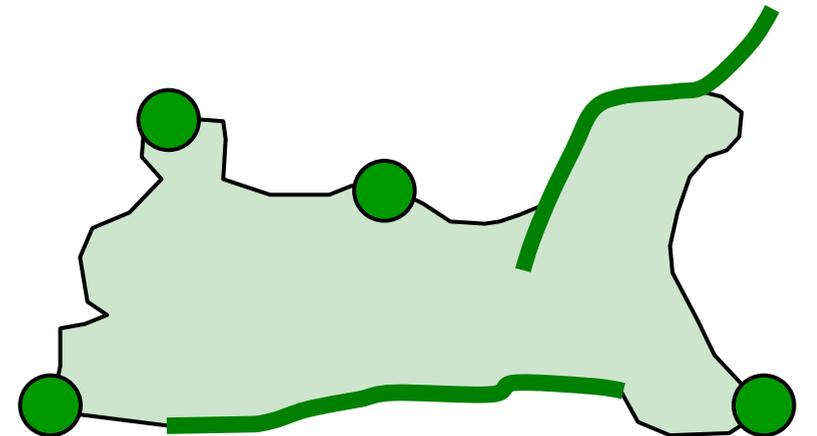


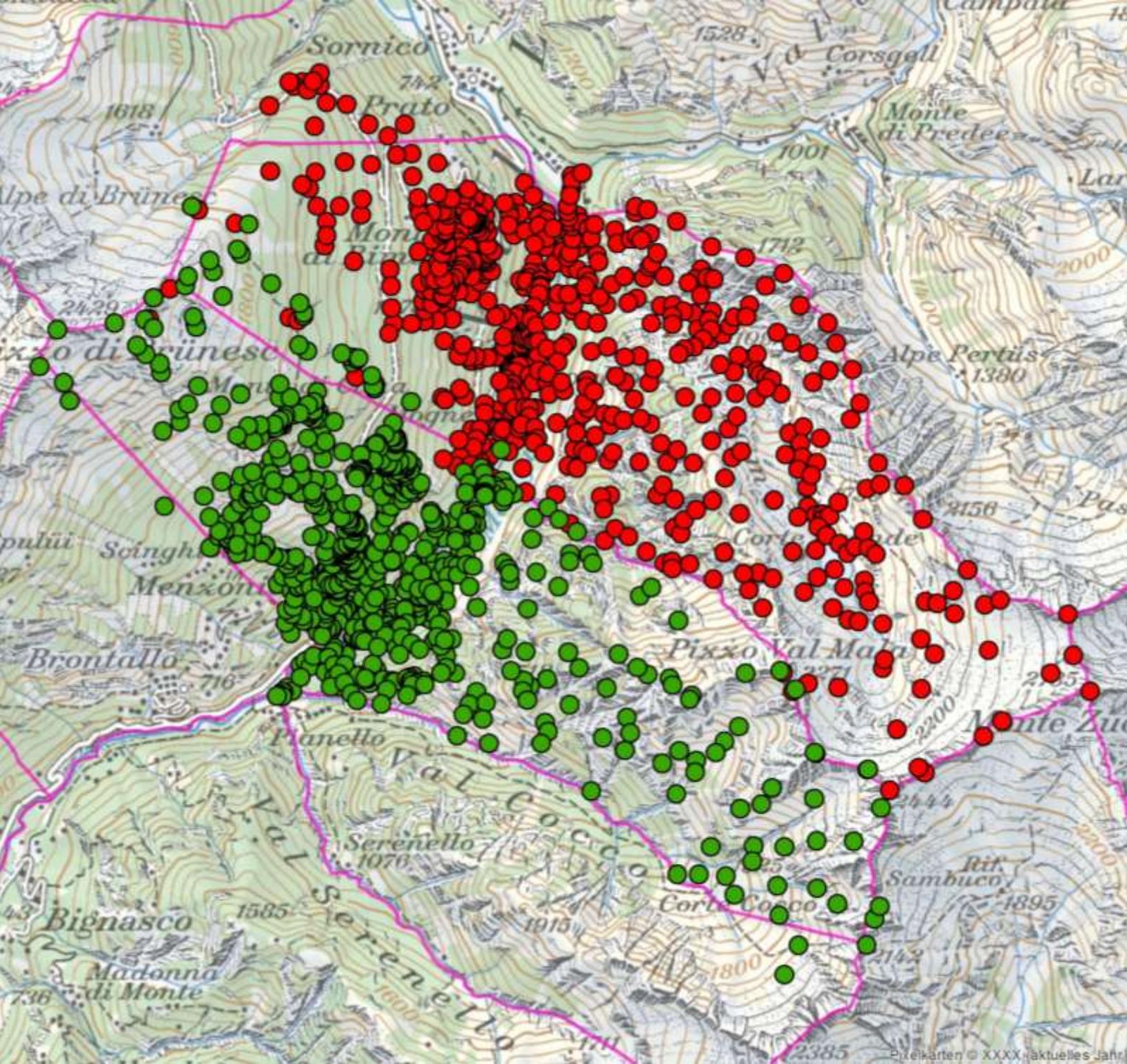


Too often we describe and record every toponym as a single points:



For example, there are composite place names, corresponding to areas whose boundaries are marked by many point- or curvilinear- shaped toponyms:





Too often we describe and record every toponym as a single points:



The example of ancient protected forests:



Libro dei patti e ordini di
Broglia del 1598-1626

Libro dei patti e ordini del
comune de Broglia come sotto scritto
sequitta

2
L'anno Copertione fatta e stabilita
L'anno 1600

Et prima de el consulle
vegii siano debittore spolare
el giuramento de el consulle
nouo fanno per l'anno et el
consulle nouo el danna di l'anni
officiali sotto el suo apiti
Anno per l'anno

Offe chi tagliasse ^{ne guastase} ne la
faulla de spaluj faiedo
la qualle e dala valegia
de sompreji in dentro
su dritto & fine su ala
scalada et deli saselli de
campagia de sotto Ingiu
& fine ente apressa la
deferentia con quelli de
pratto
In pena de — y 2^{li} 4
& pianza et sazini y 4
& arama cioe solamente
le arame verde et non
le seche

Art. 39

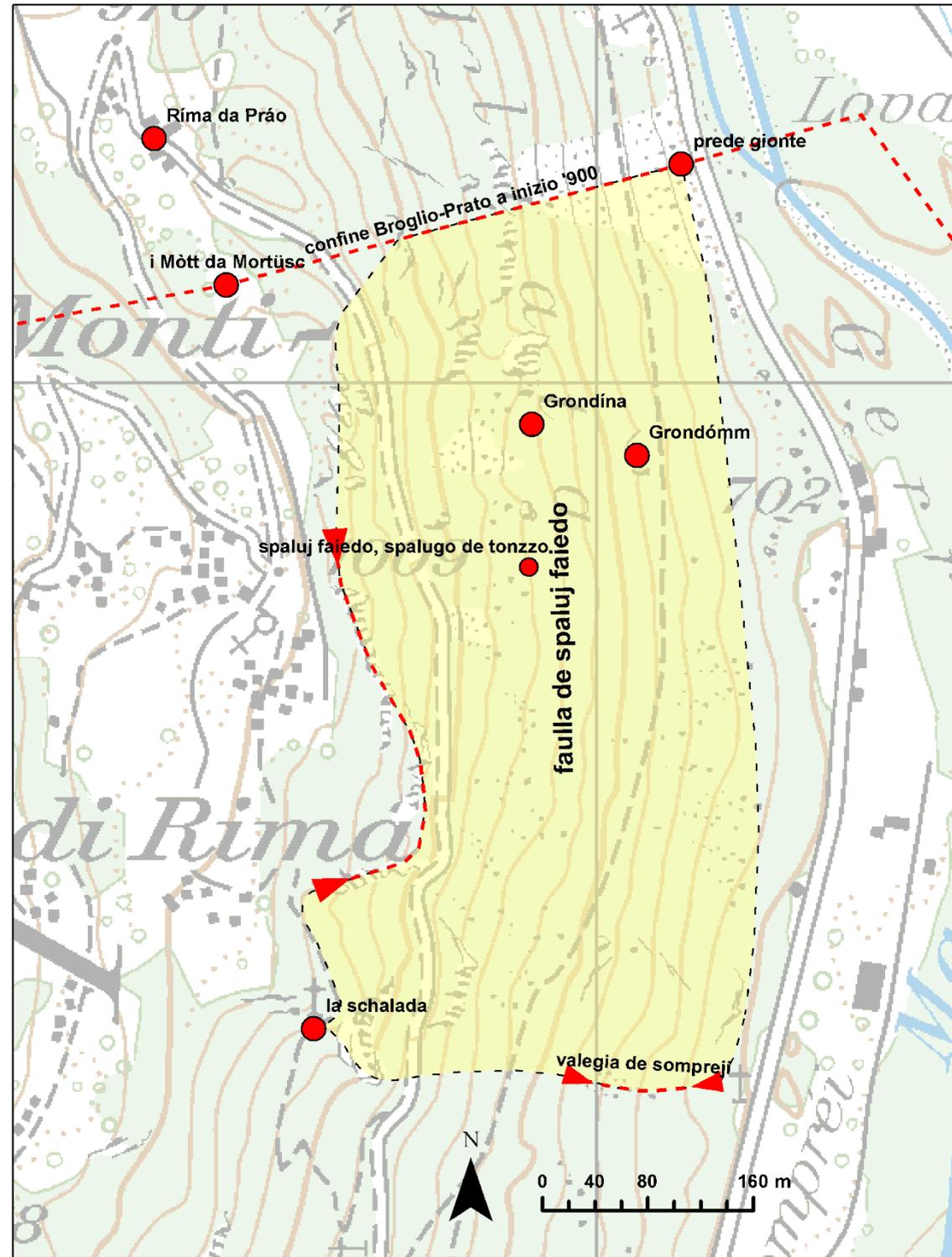
Item chi tagliasse ne guastase ne la **faulla de spaluj faiedo** la qualle e dala **valegia de sompreji** in dentro su dritto per fine su ala **scalada** et deli **saselli de campagia de sotto** in giu per fine ente apressa la **deferentia con quelli de prato** in pena de £ 2 per pianza et sazini 4 per arama cioe solamente le arame verde et non le seche

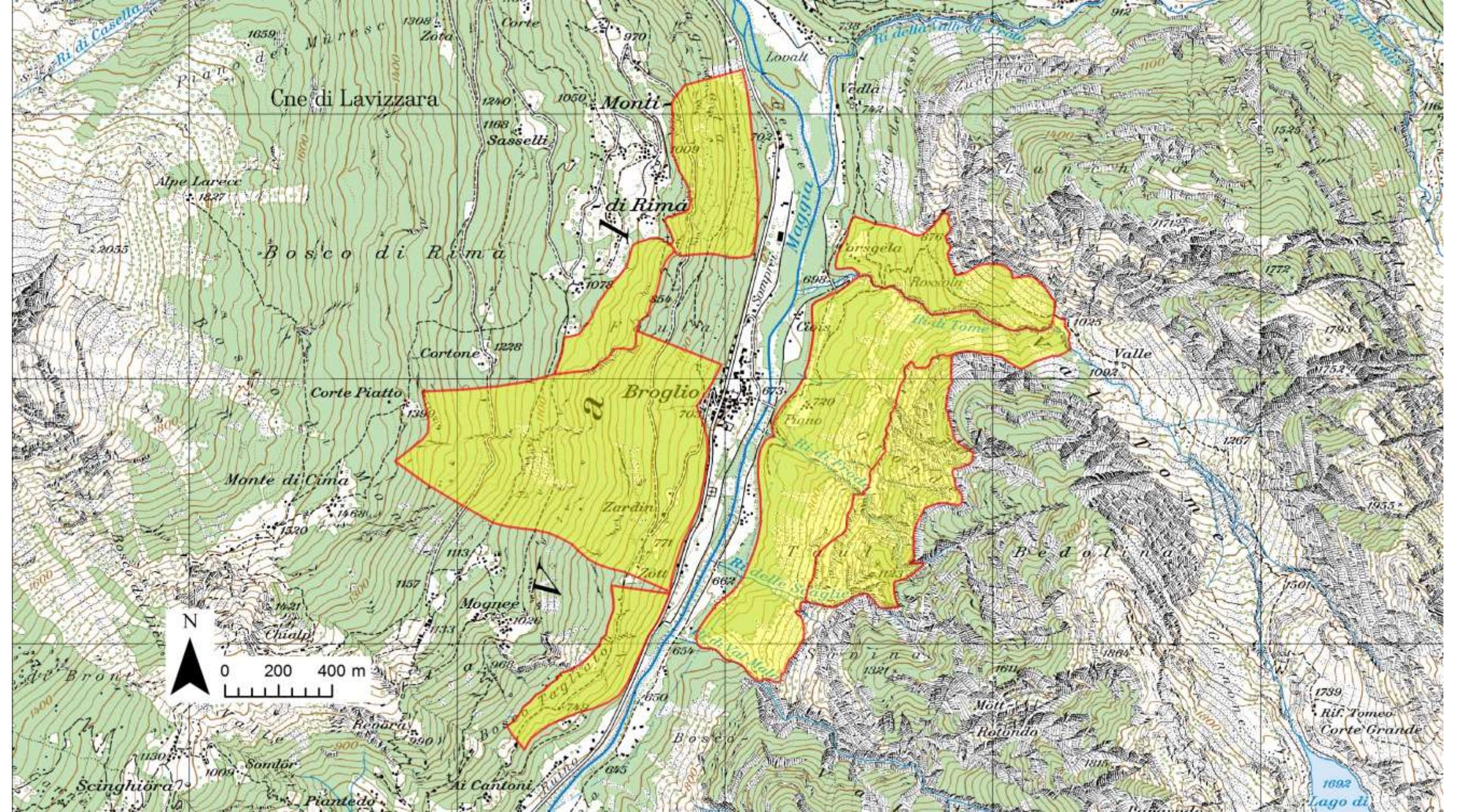
Si multa, con 2 lire per pianza e 2 soldi per ramo, chi taglia o guasta legna verde nel bosco protetto dello 'spaluj faiedo' che si estende verso monte fino al bordo inferiore del terrazzo di Rima, verso valle fino alla zona di confine contesa con quelli di Prato, e verso l'esterno fino alla 'valegia de sompreji'.

*Offe cdi faghiasse ne la
faulla de spaluj faiedo
la quale e dala valegia
de sompreji ju dentro*

Si multa, con 2 lire per pianta e 2 soldi per ramo, chi taglia o guasta legna verde nel bosco protetto dello 'spaluj faiedo' che si estende verso monte fino al bordo inferiore del terrazzo di Rima, verso valle fino alla zona di confine contesa con quelli di Prato, e verso l'esterno fino alla 'valegia de sompreji'.

*ju dentro
la pianta et sompreji
la schalada cio e solamente
le arame verde et non
le scde*





Cne di Lavizzara

Monti

di Rima

Bosco di Rima

Broglio

Monte di Cima

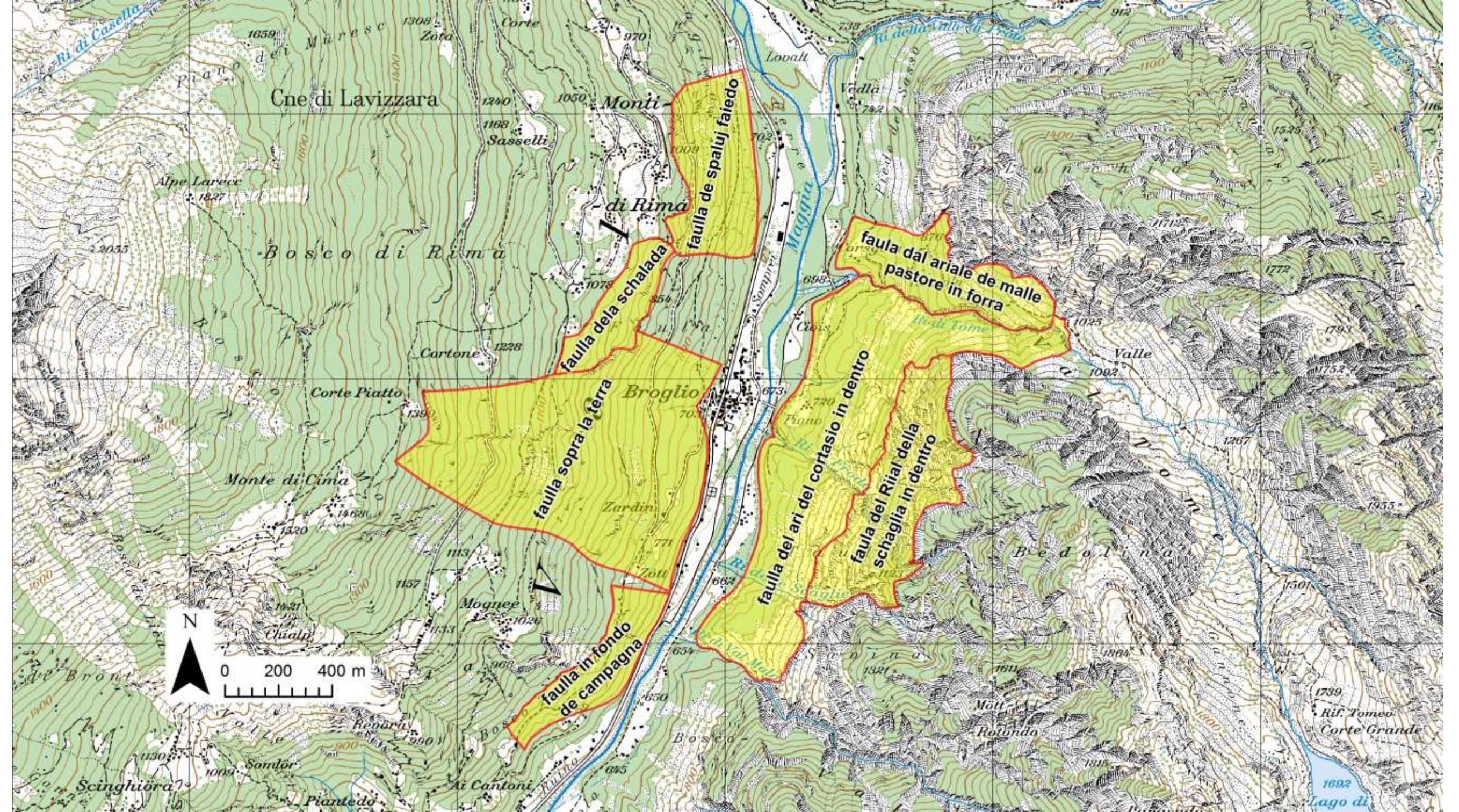
Valle

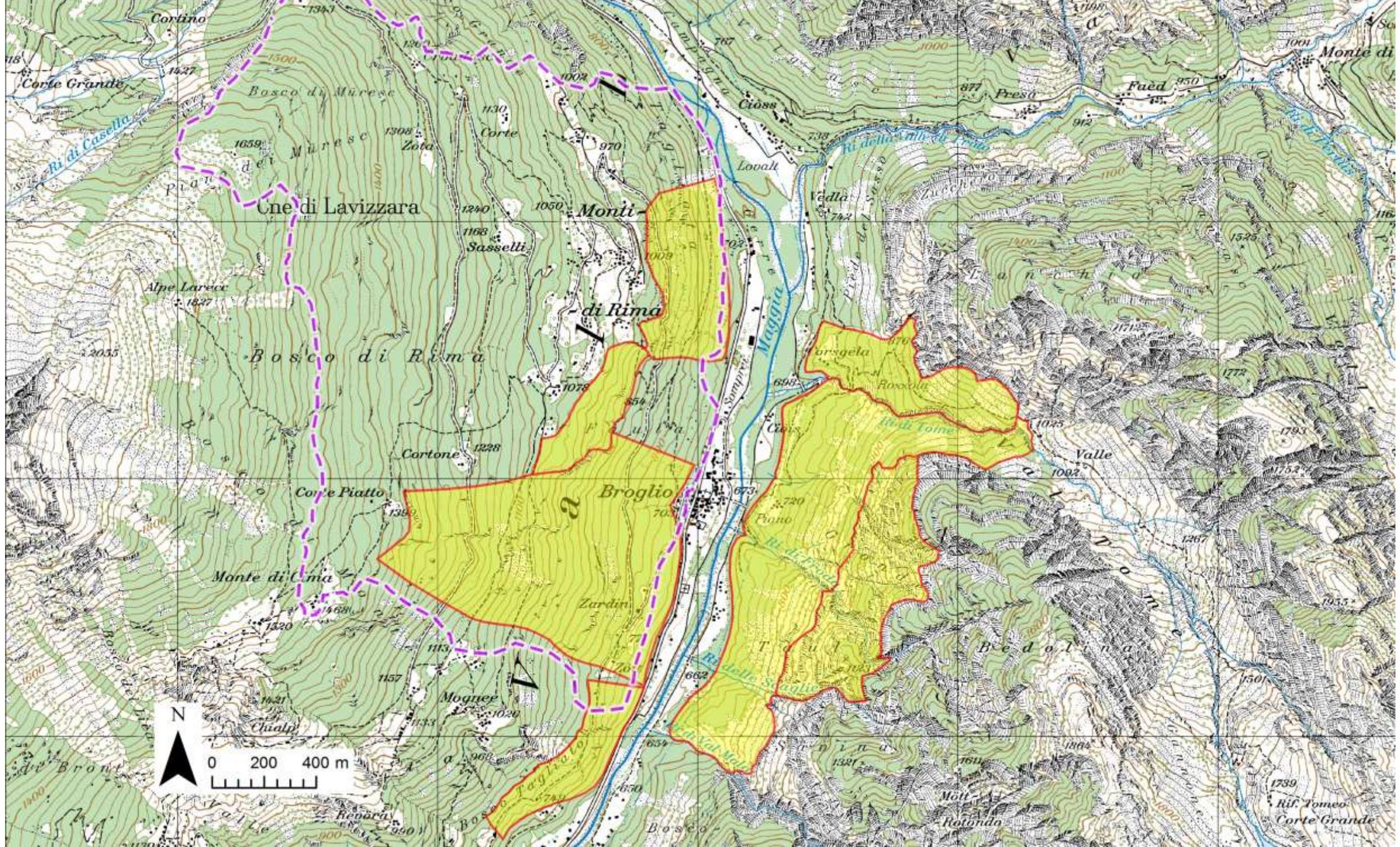


0 200 400 m

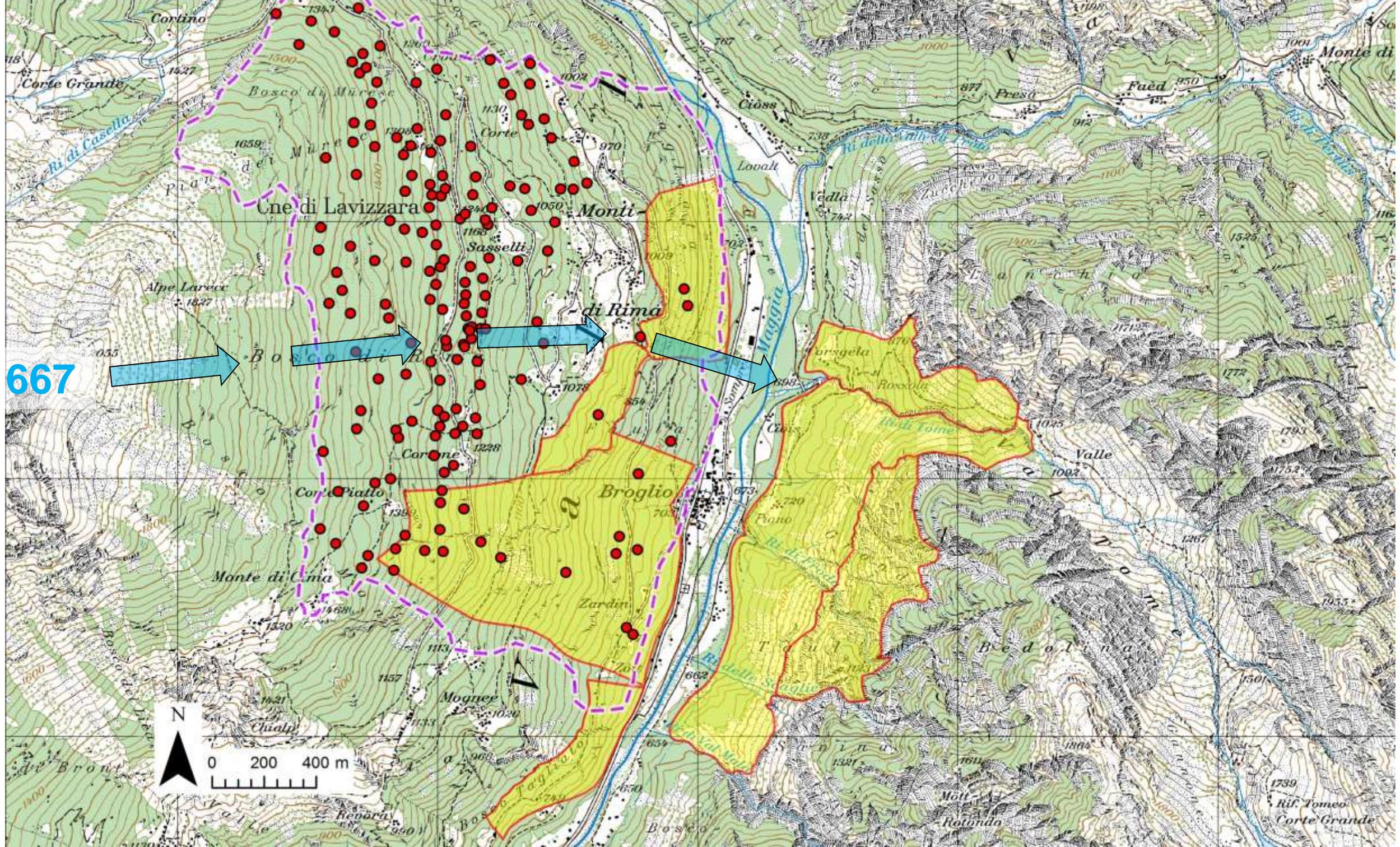
Rif. Tomeo
Corte Grande

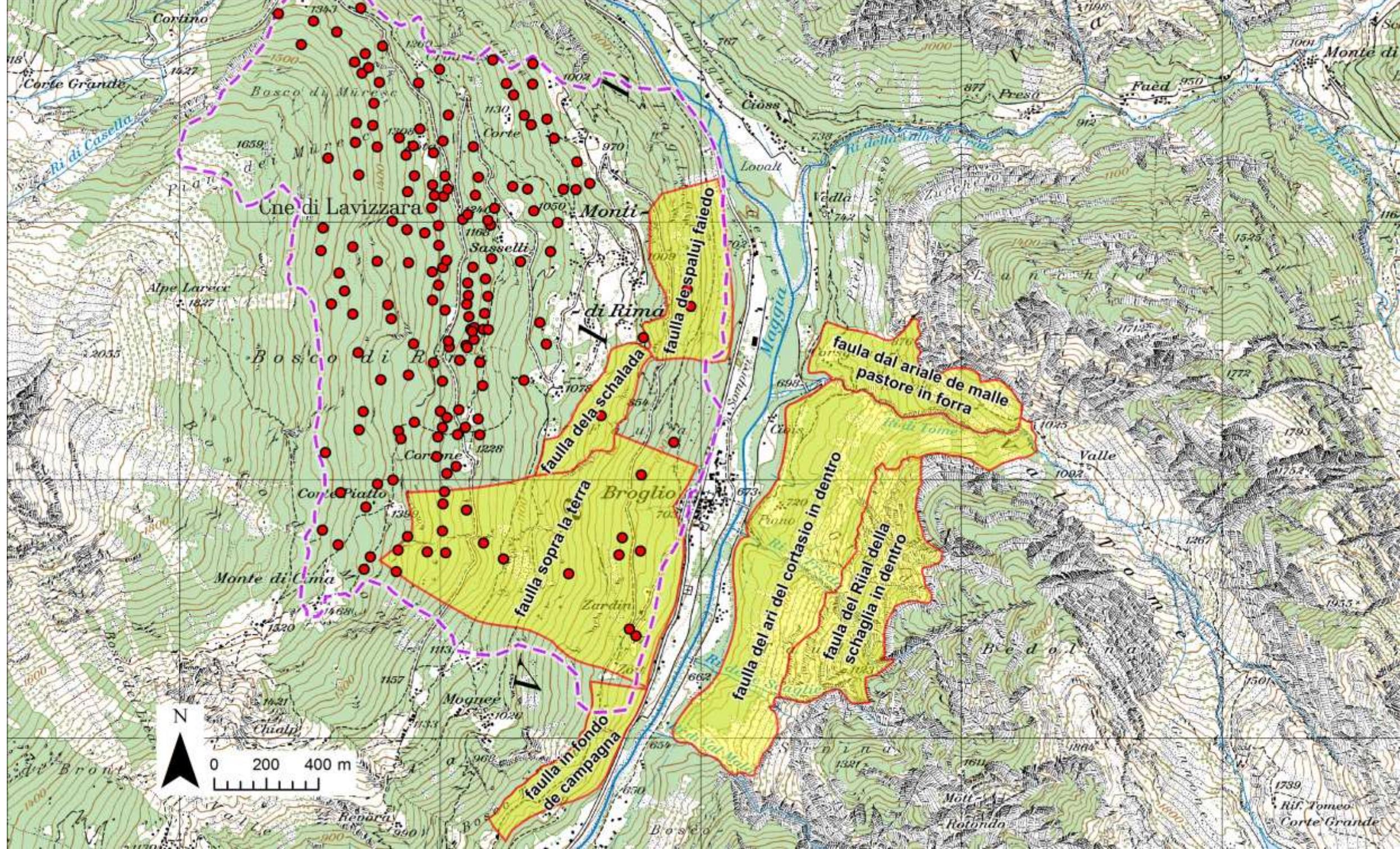
Lago di



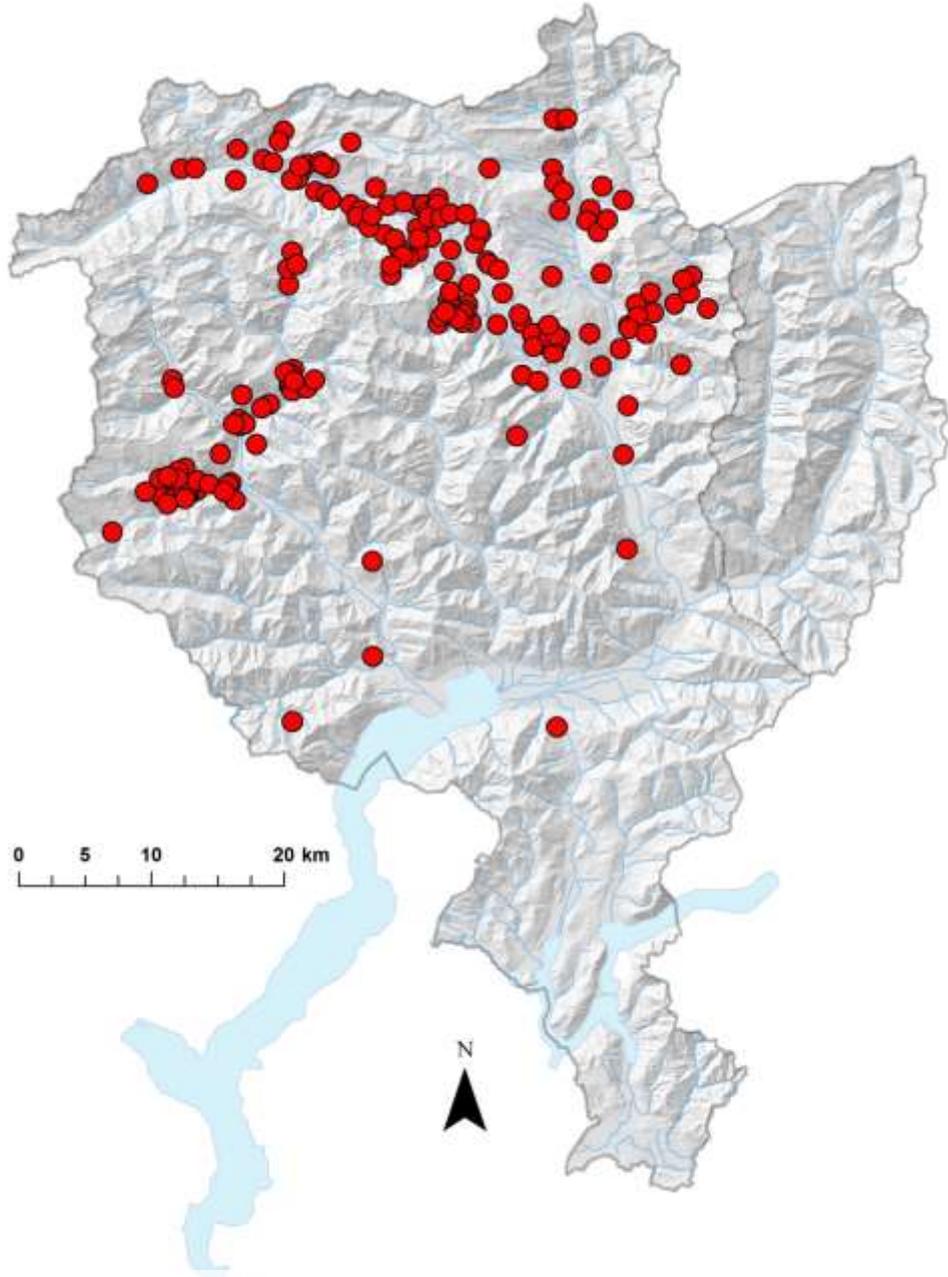


1667

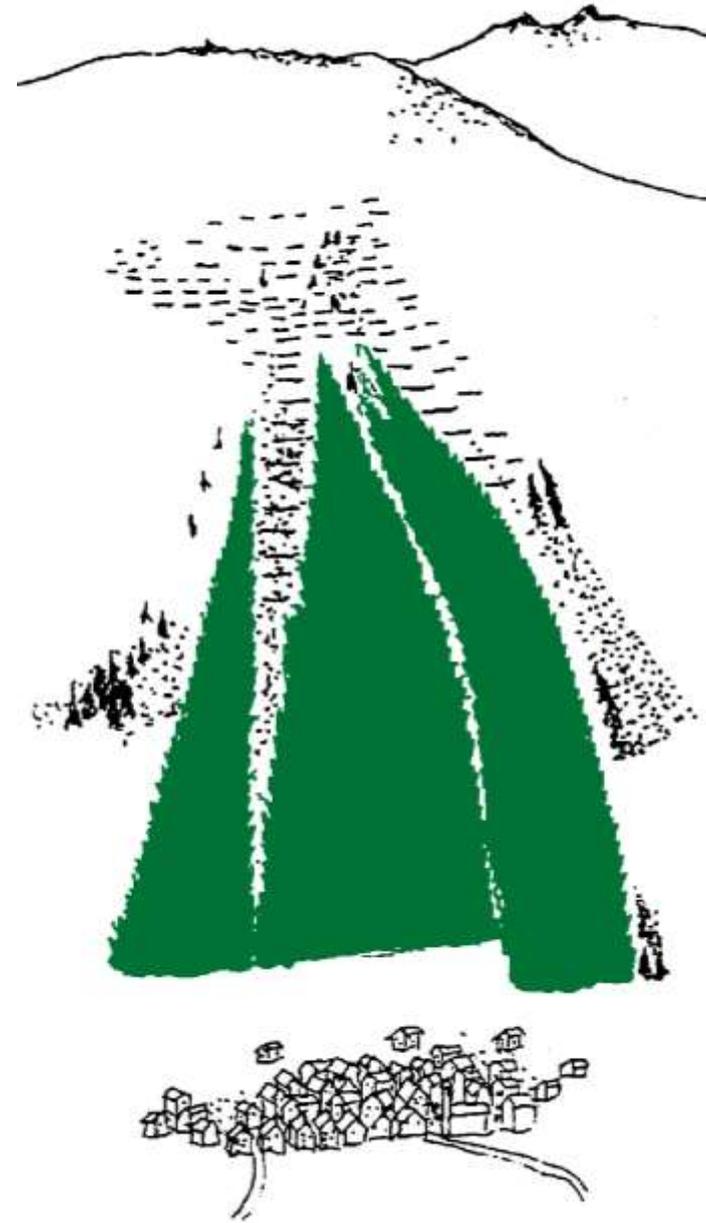
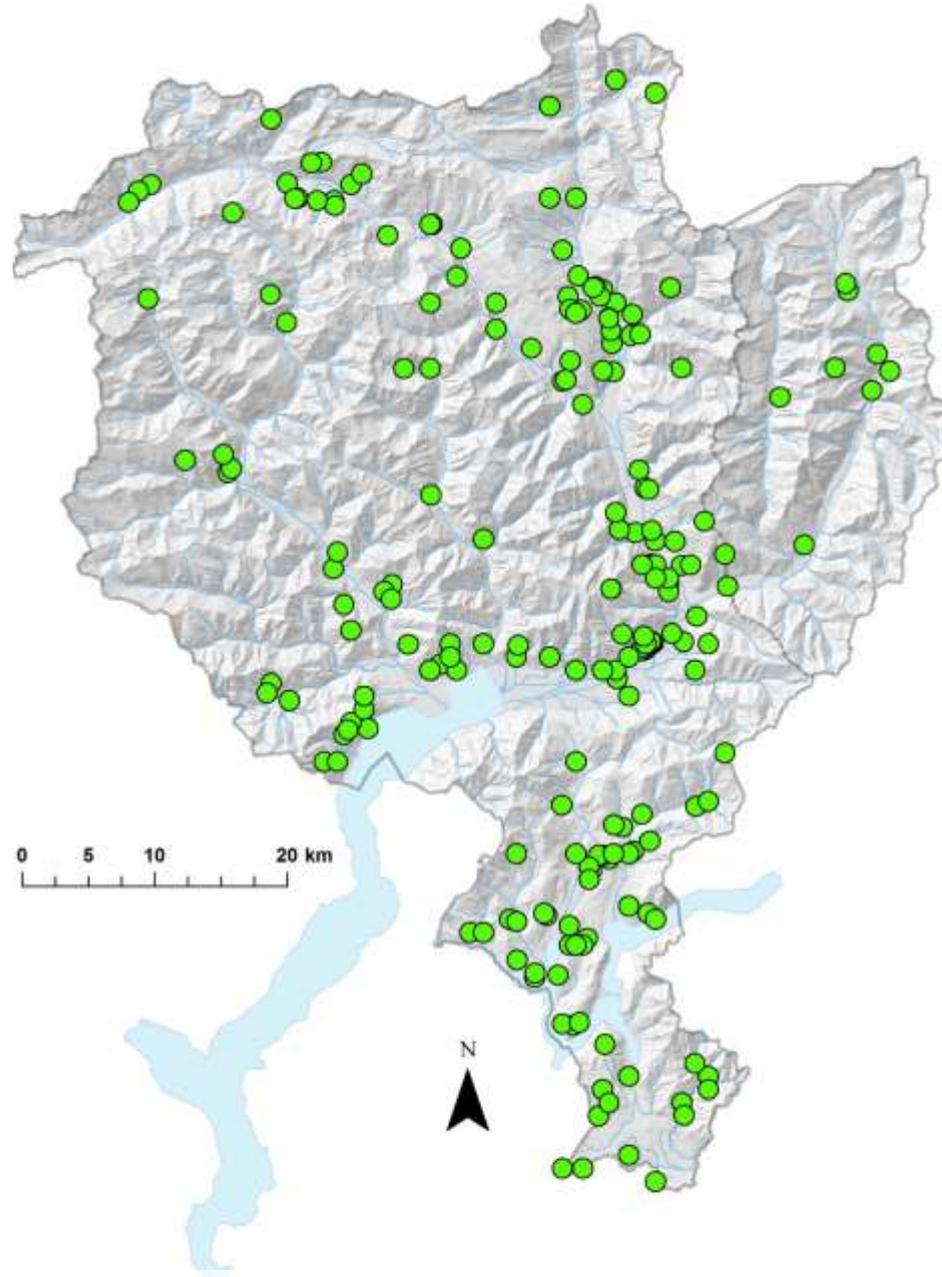




fávola

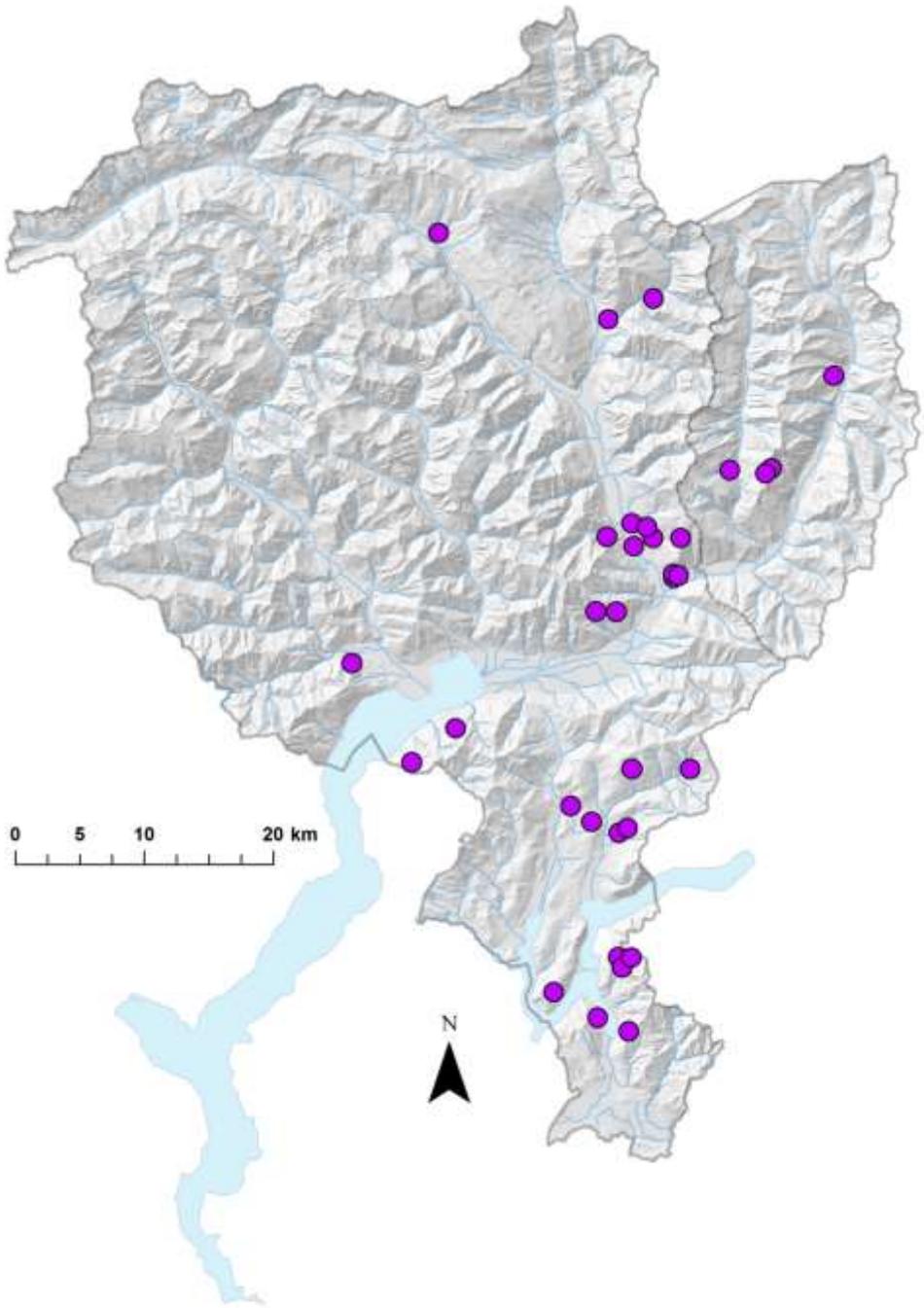


gasg

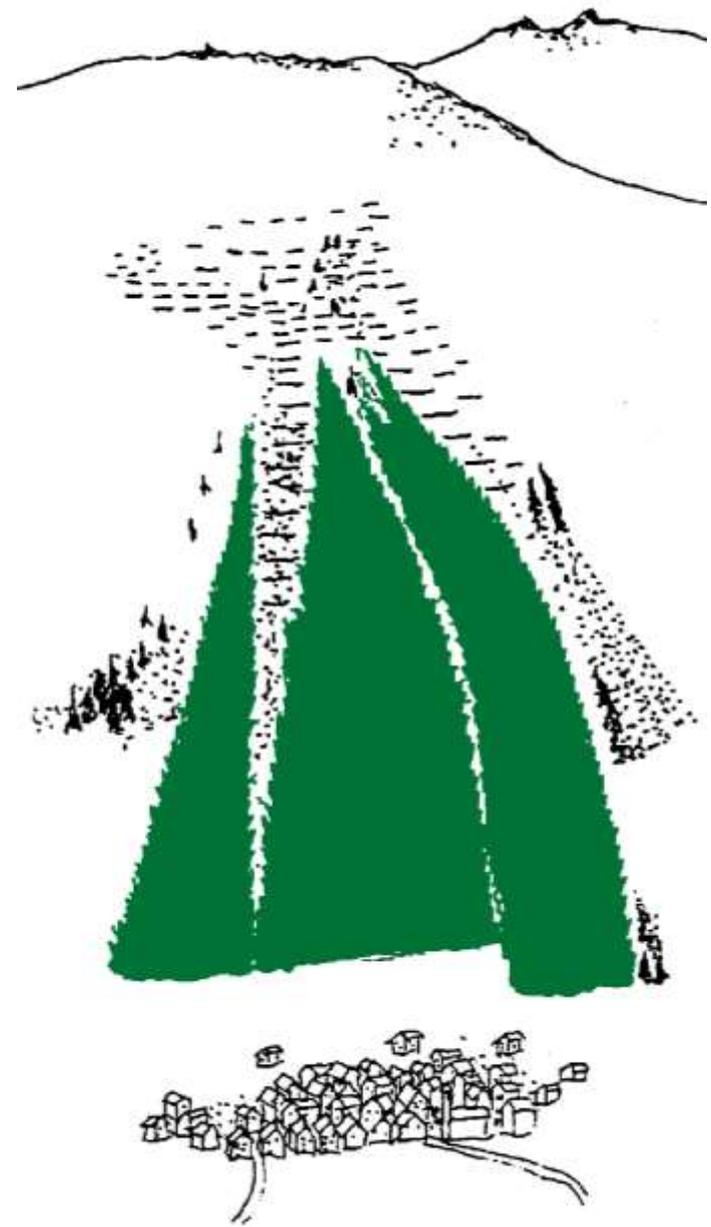
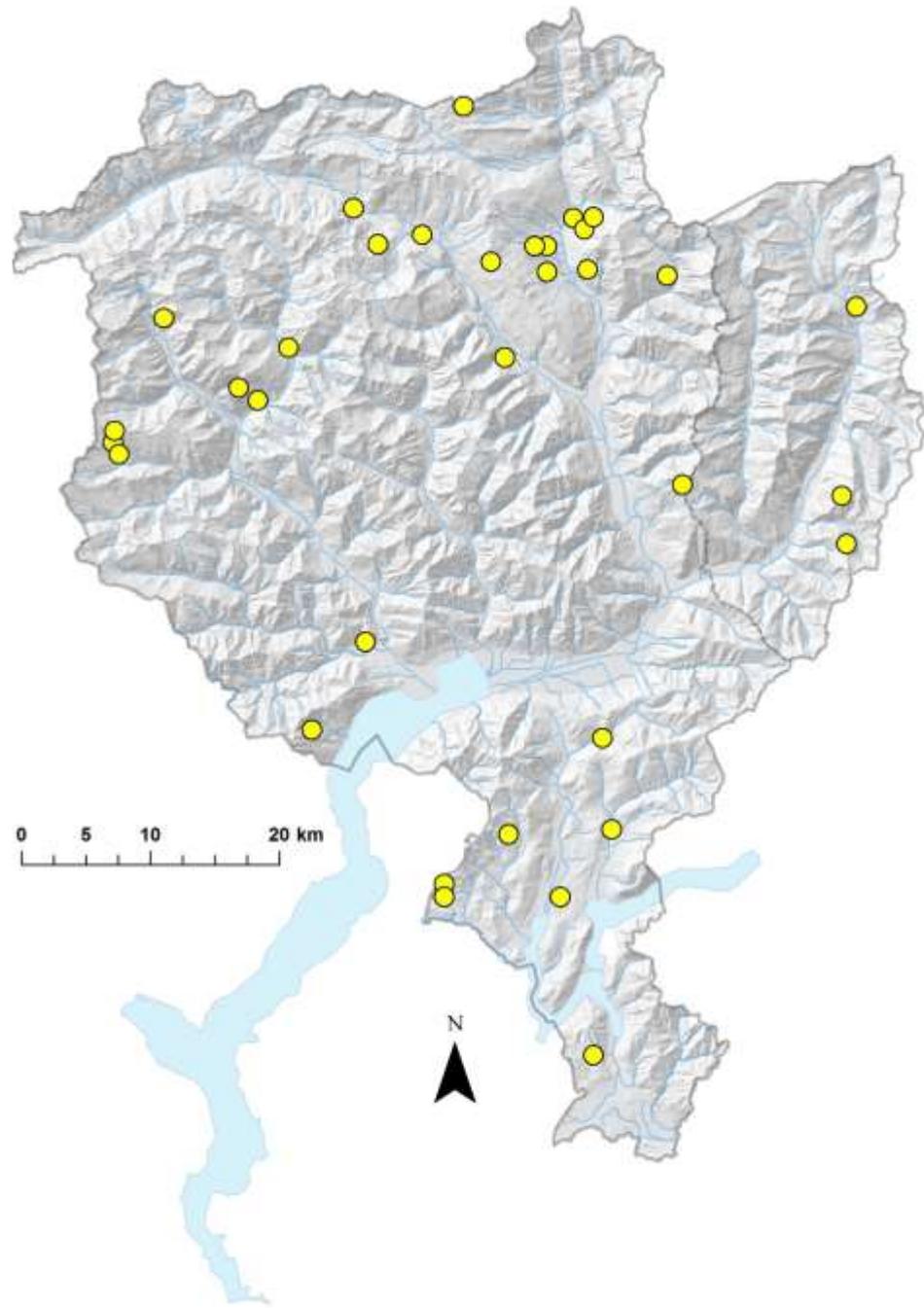


Mark Bertogliati, 2013. From protected forests to protection forests.

téns, ténsa

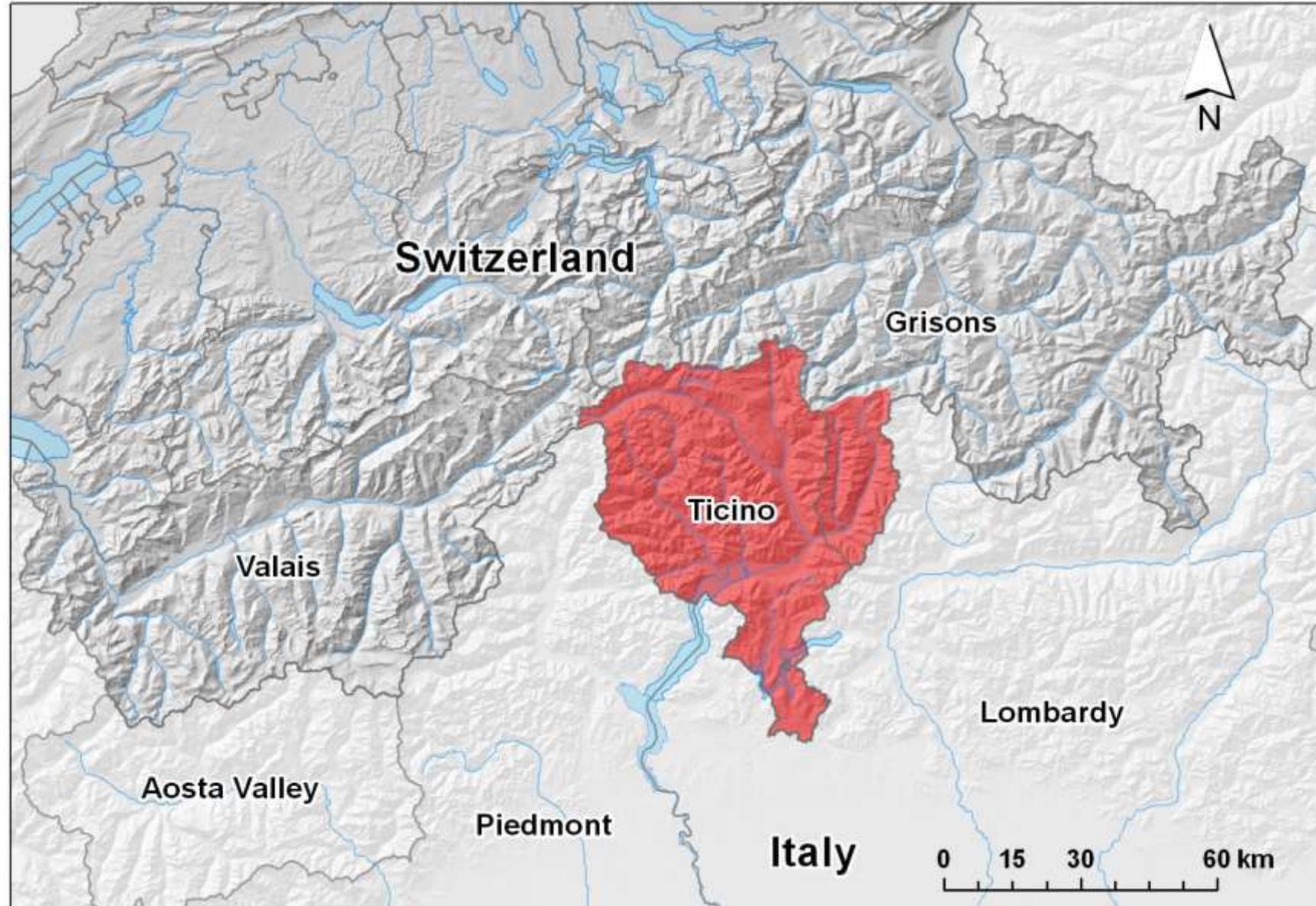


altri



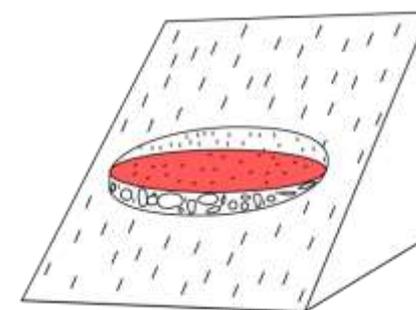
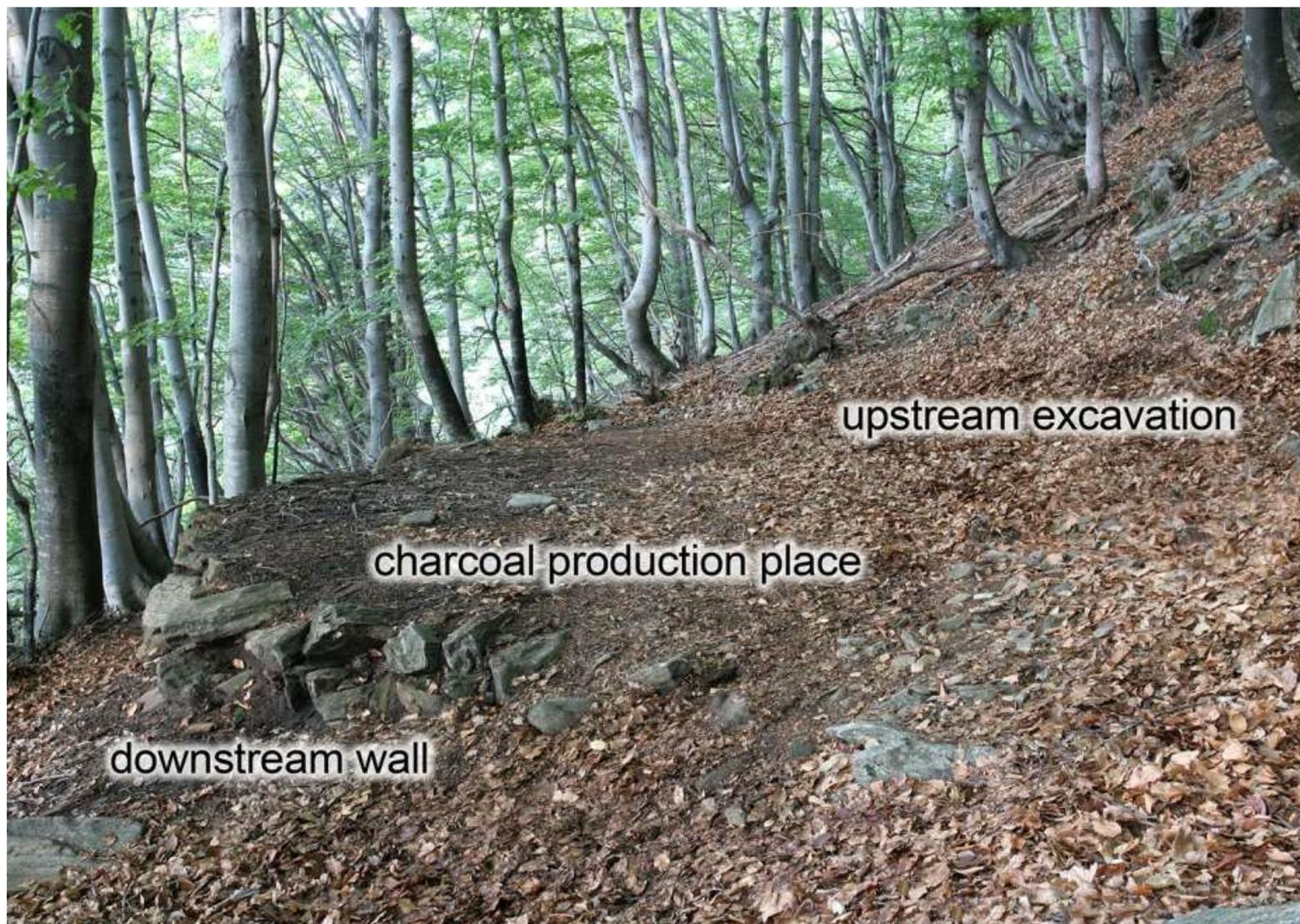
research topic: place names related to the wood charcoal proto-industry

study area: southern Switzerland (Canton Ticino)

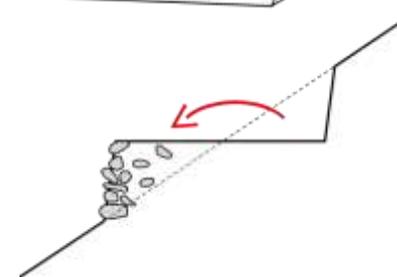


The most studied remains and evidences: charcoal production sites

A platform or flattened area upon which a kiln or a series of kilns had been built for the purpose of making the charcoal. These places can be recognized by observing carefully the structures and the ground.



flat surface



upstream excavation

downstream wall



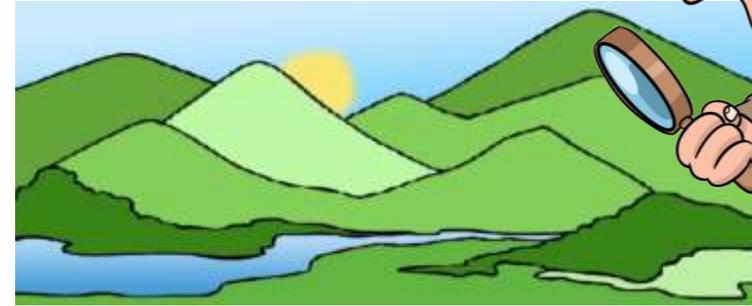
charcoal fragment
and black earth

Charcoal production sites are very frequent in southern Switzerland

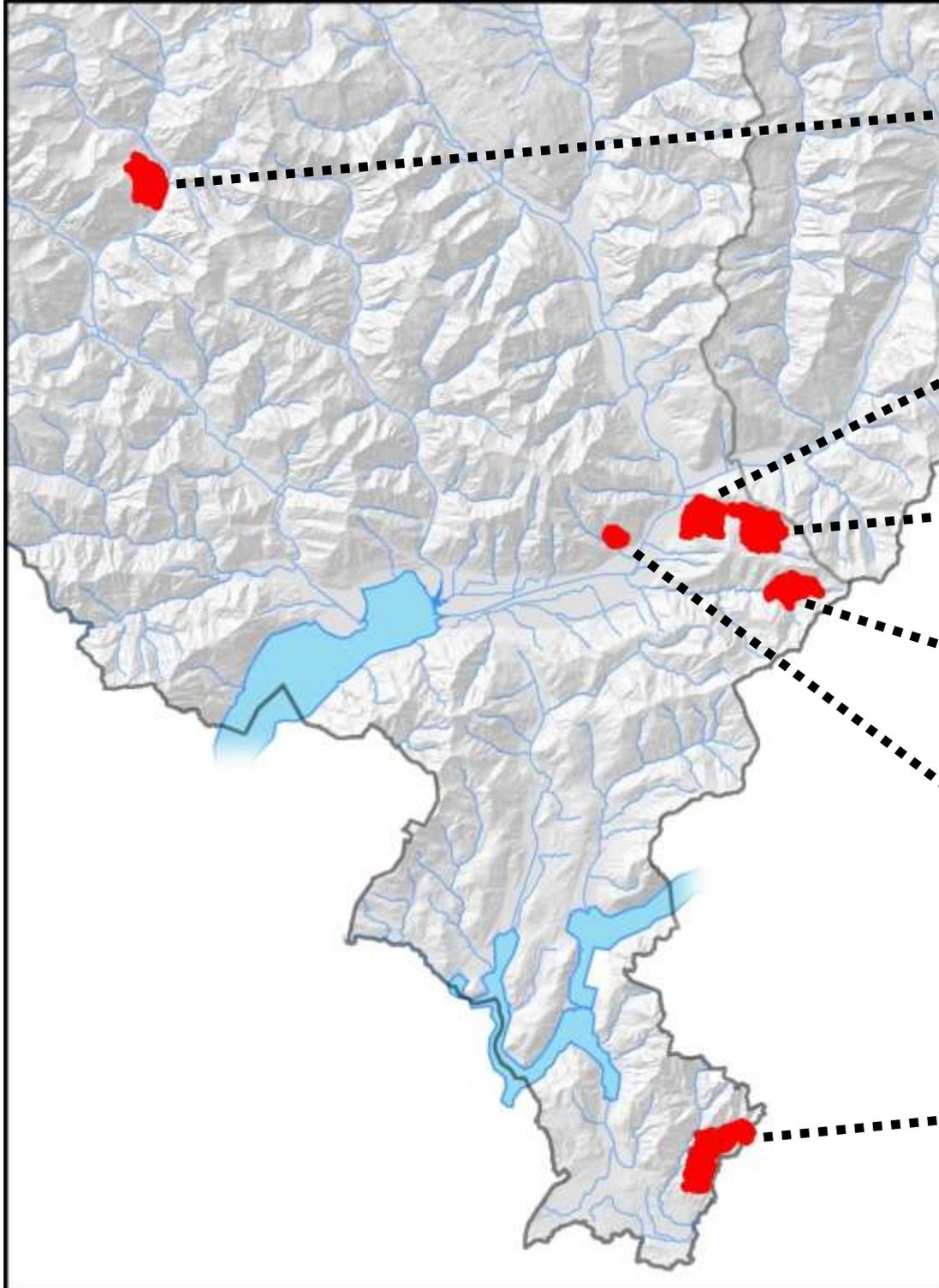
1'416 sites have been detected and mapped in 23.9 km²

on average: **~60 sites / km²**

research in field



by projecting these data on the entire territory we can imagine that there are at least **40'000 sites** on the whole territory



3.8 km²
171 sites

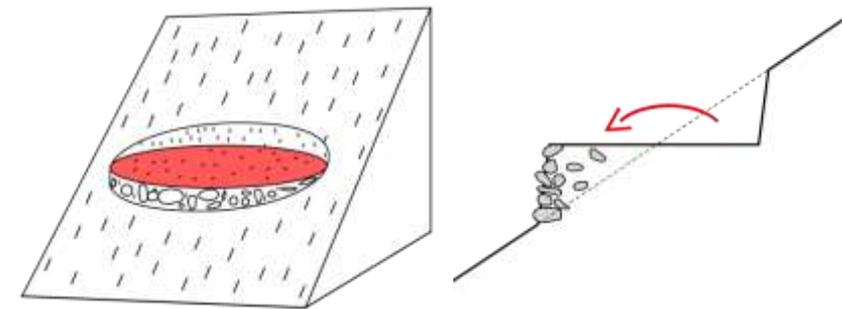
3.2 km²
126 sites

3.9 km²
347 sites

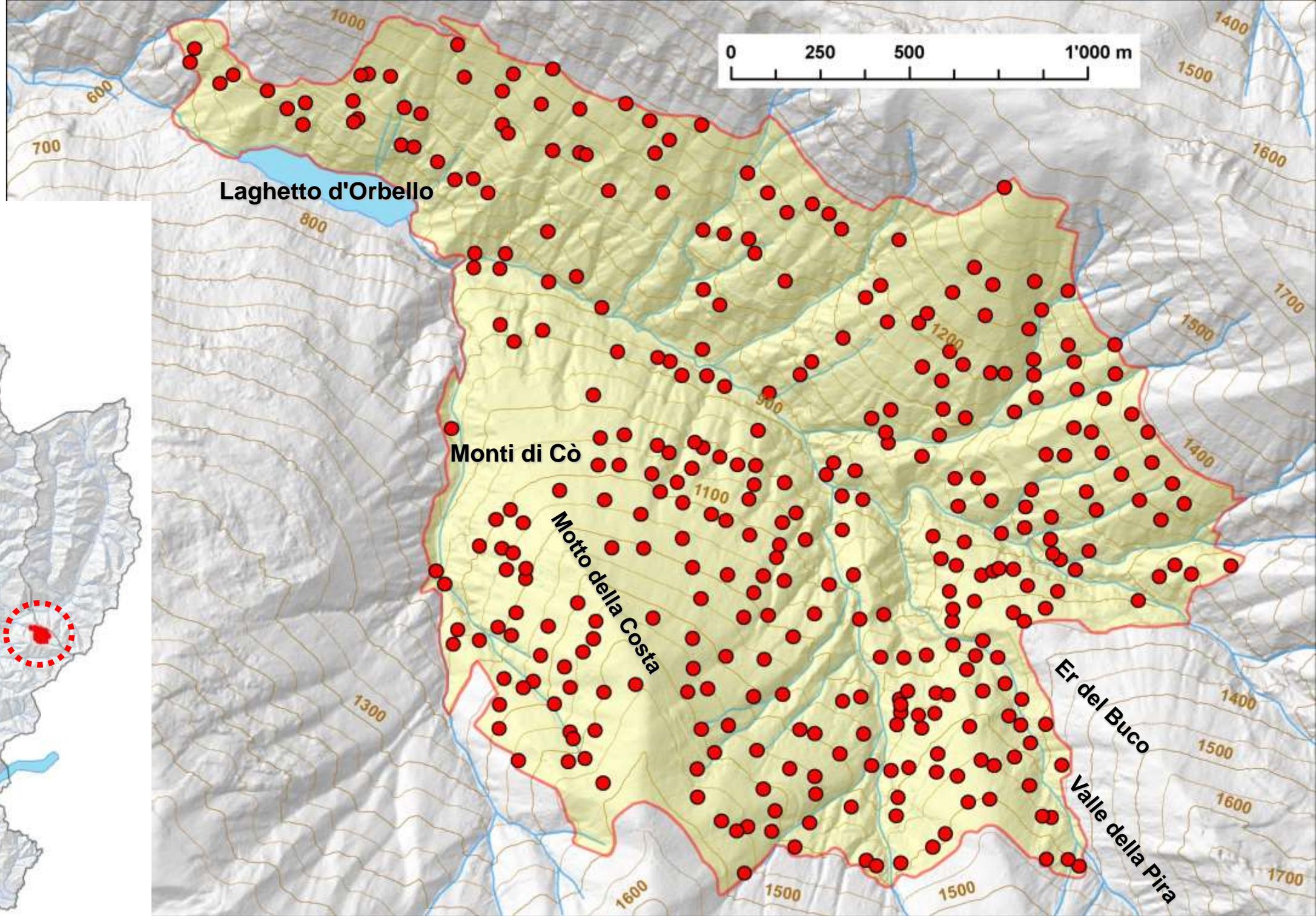
7.2 km²
376 sites

0.5 km²
49 sites

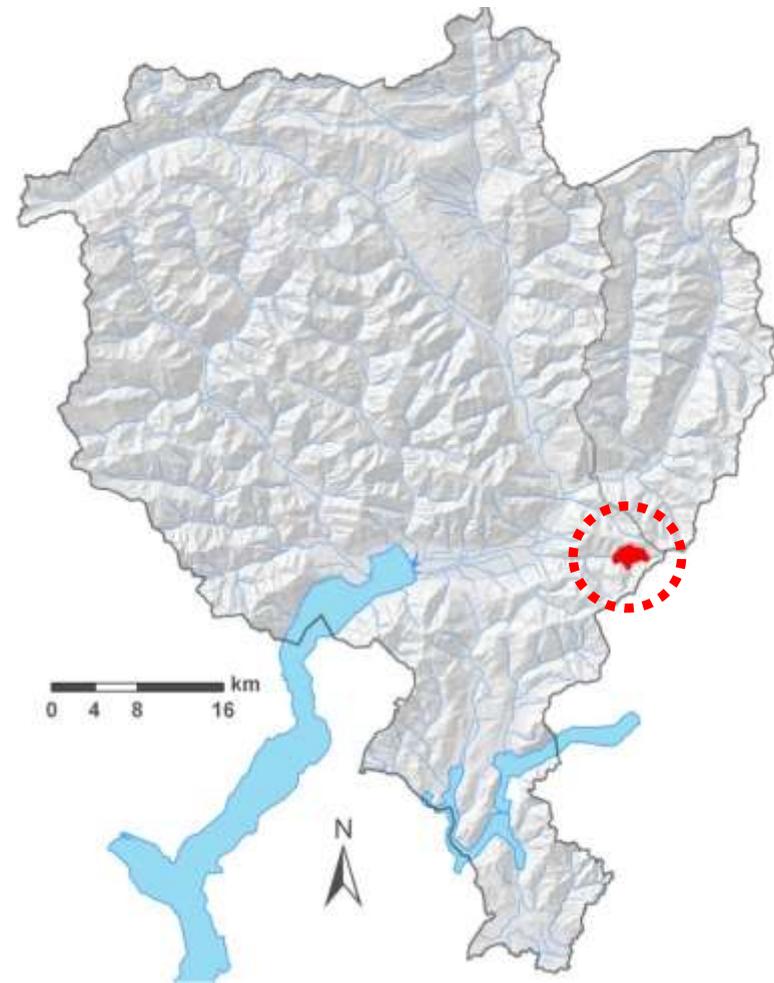
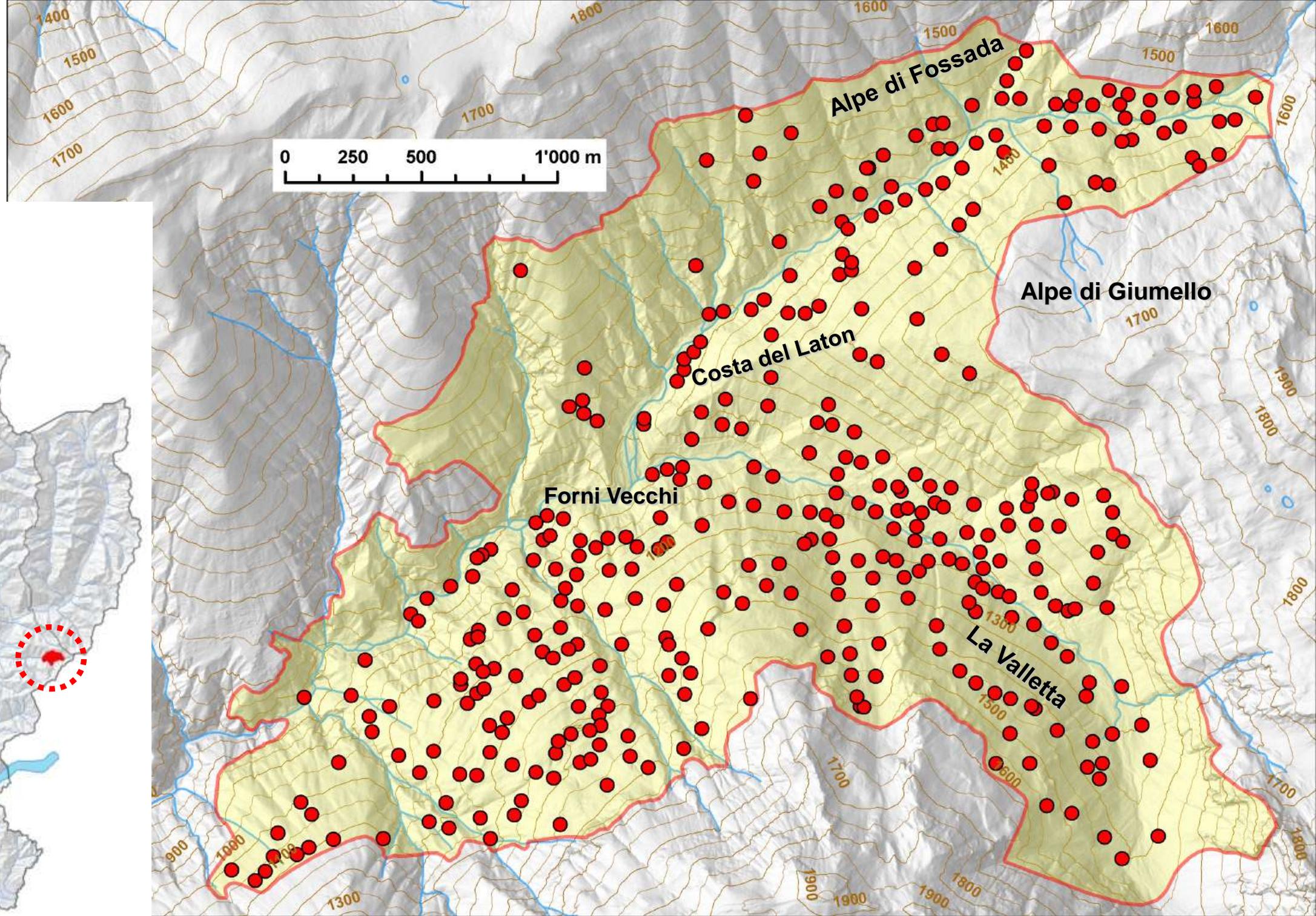
5.3 km²
347 sites



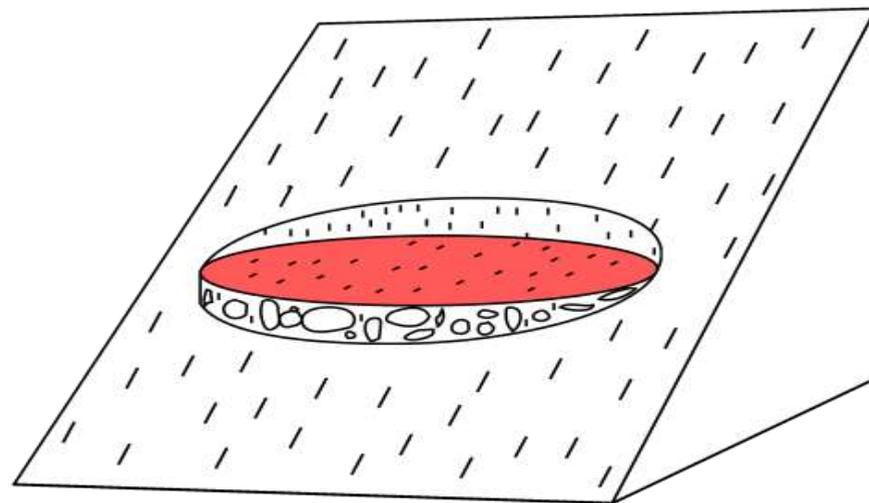
Alta Valle d'Arbedo
3.9 km²
347 sites



Valle Morobbia
7.2 km²
376 sites



Remains and evidences related to the wood charcoal proto-industry



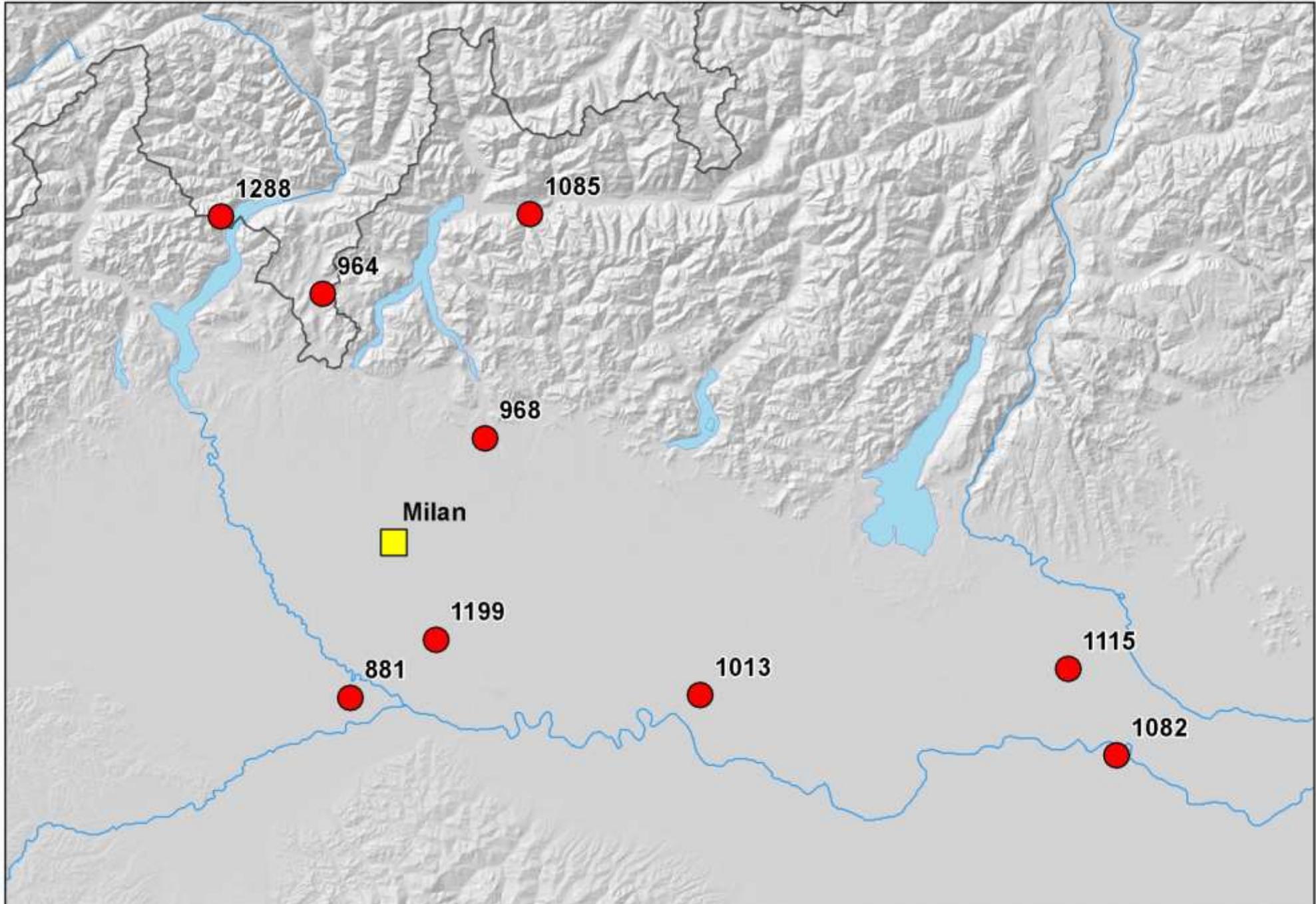
charcoal production sites



traditional place names

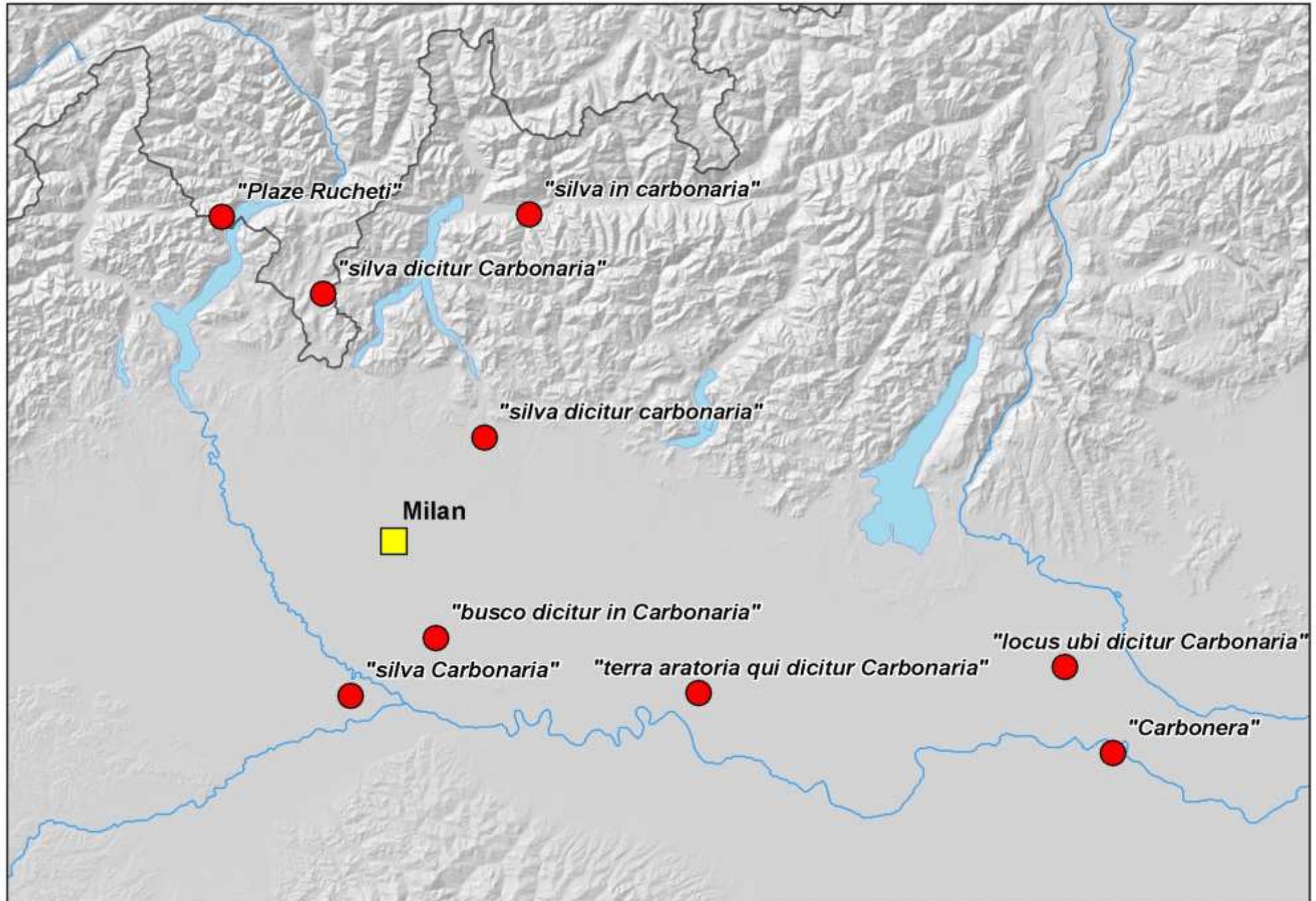
Place names related to the charcoal industry can be found in very old manuscripts

starting from the
early Middle Ages



Place names related to the charcoal industry can be found in very old manuscripts

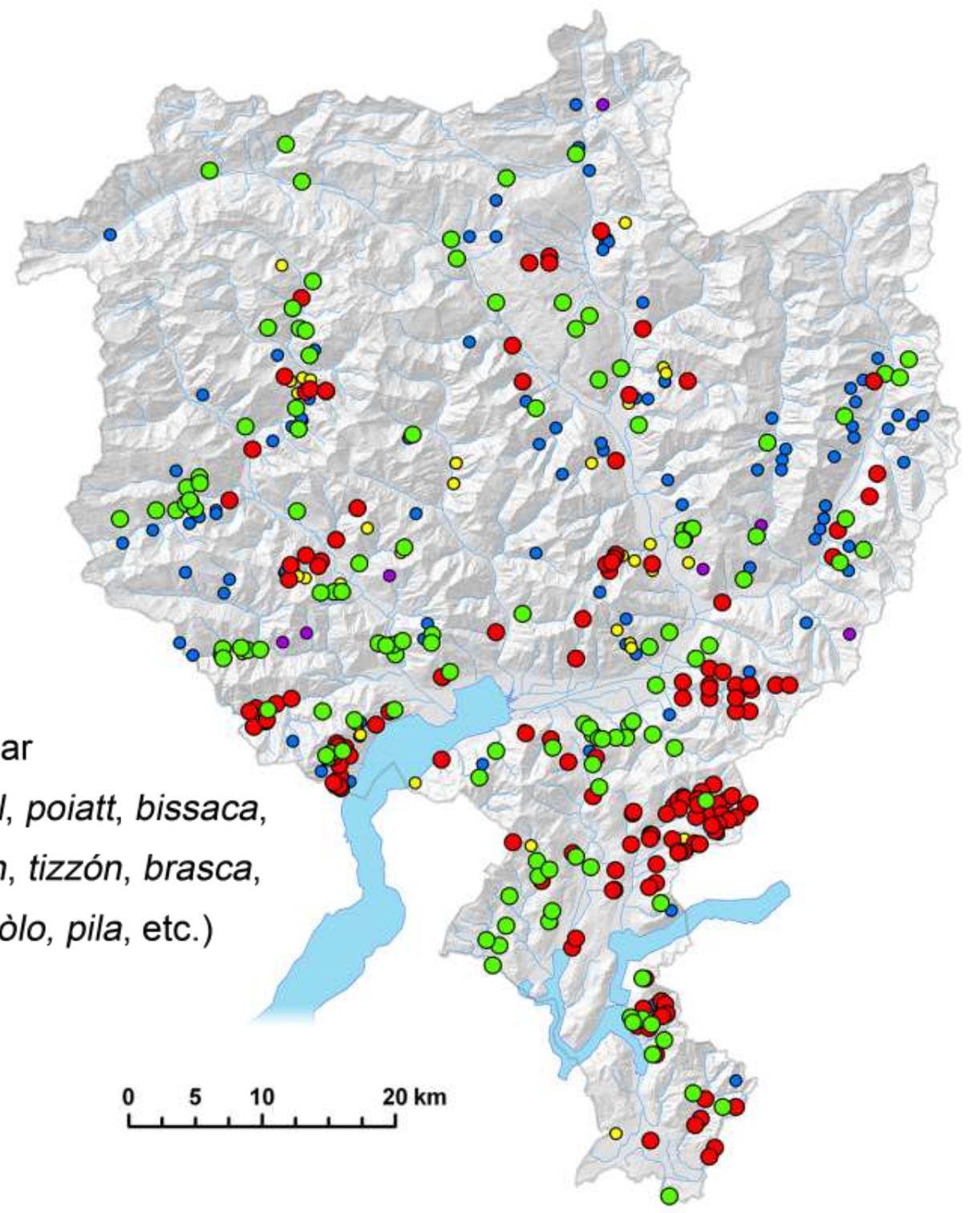
starting from the
early Middle Ages



Toponymic traces of the wood charcoal proto-industry are very frequent in the valleys of the southern slope of the Swiss Alps

445 place names

- 131 ● *carb-*
- 158 ● *piazz-*
- 103 ● *báit-*
- 8 ● *éira* and similar
- 45 ● others (*pianèll, poiatt, bissaca, bastina, portín, tizzón, brasca, sciücch, cagnòlo, pila, etc.*)



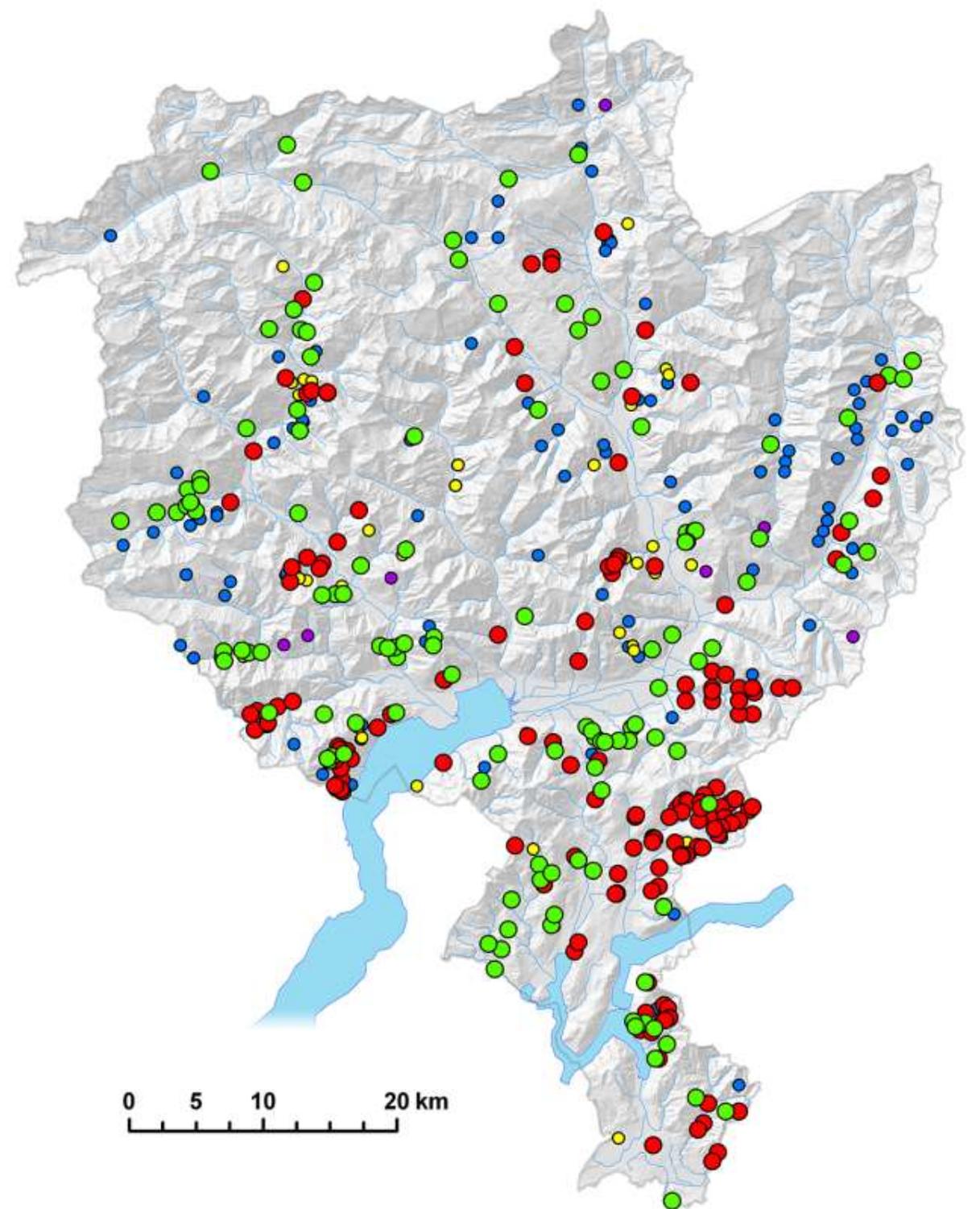
Repertorio toponomastico ticinese (RTT)

Inventory of place names in the Canton of Ticino



Such data are very precious:

- This inventory represents a unique cultural heritage, and a great opportunity for many kinds of studies
- In particular it contains information of great value for the historical research



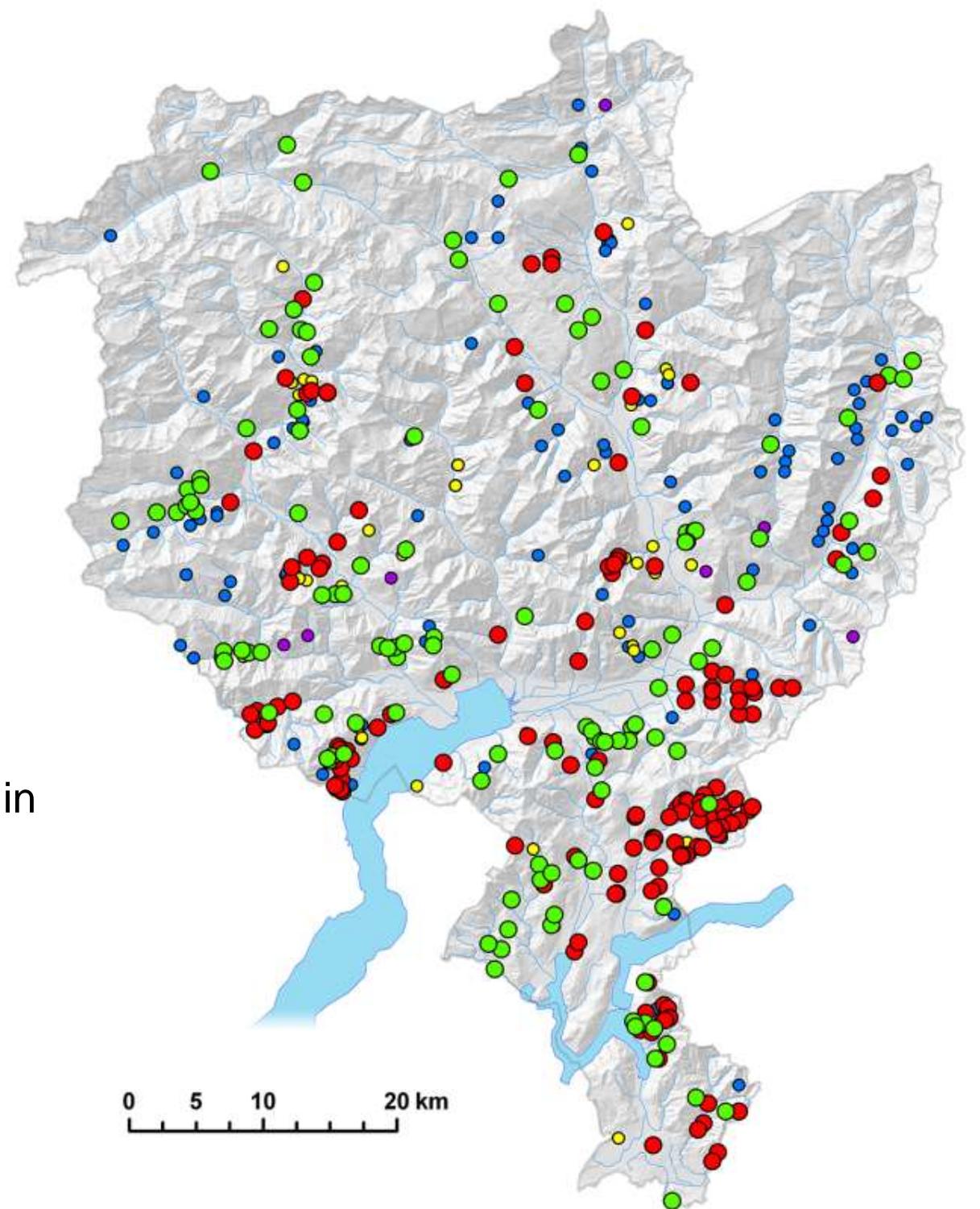
Repertorio toponomastico ticinese (RTT)

Inventory of place names in the Canton of Ticino



These data should be treated with caution:

- Data were collected over a long period of time of several decades, using methodologies that have evolved over time
- The inventory of place names is still incomplete and in progress
- The level of detail of the survey varies considerably between different regions and municipalities
- Also the precision in term of localization and georeferencing varies considerably

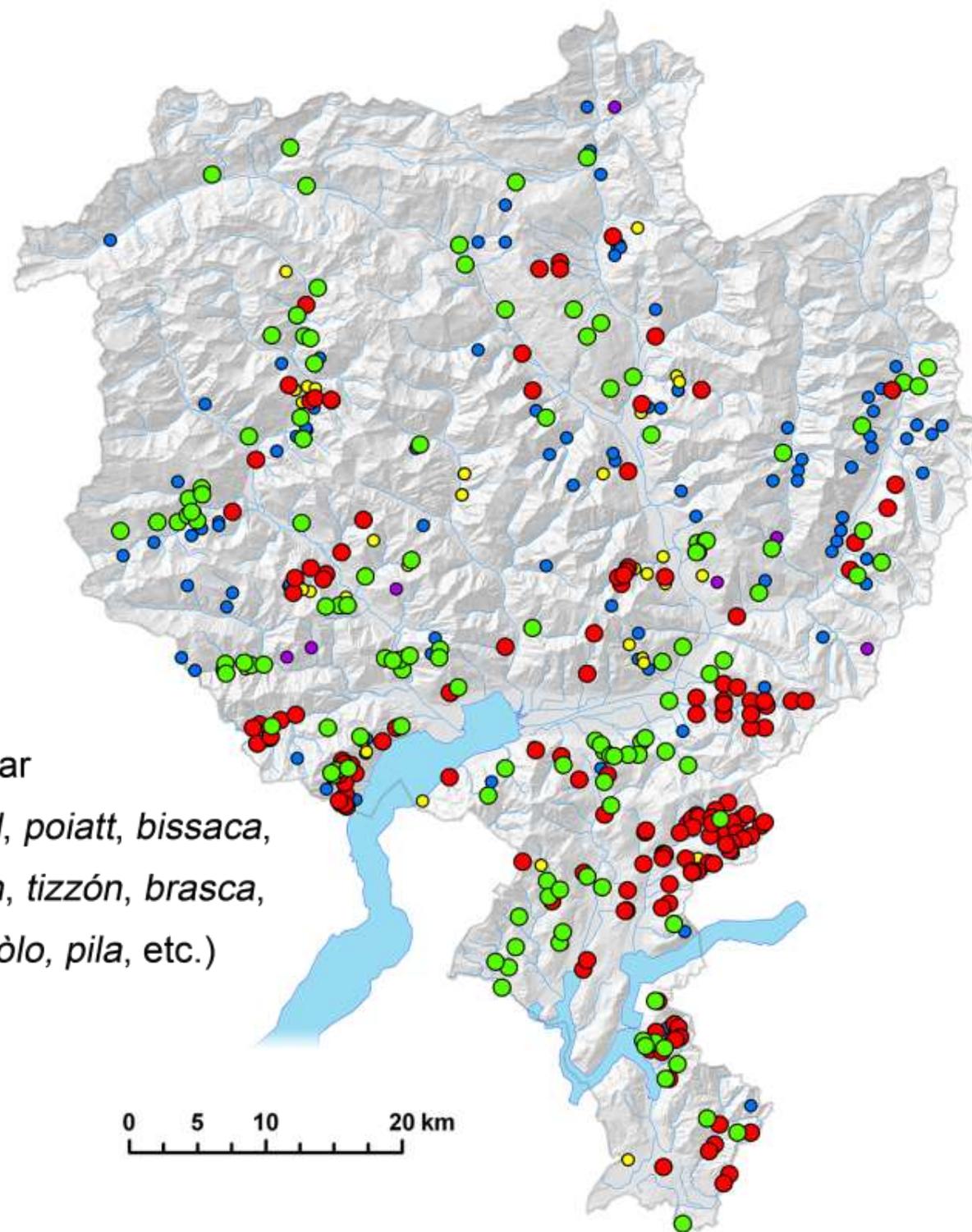


Toponymic traces of the wood charcoal proto-industry are very frequent in the valleys of the southern slope of the Swiss Alps

carbo, carbonis:
wood charcoal



- 131 ● *carb-*
- 158 ● *piazz-*
- 103 ● *báit-*
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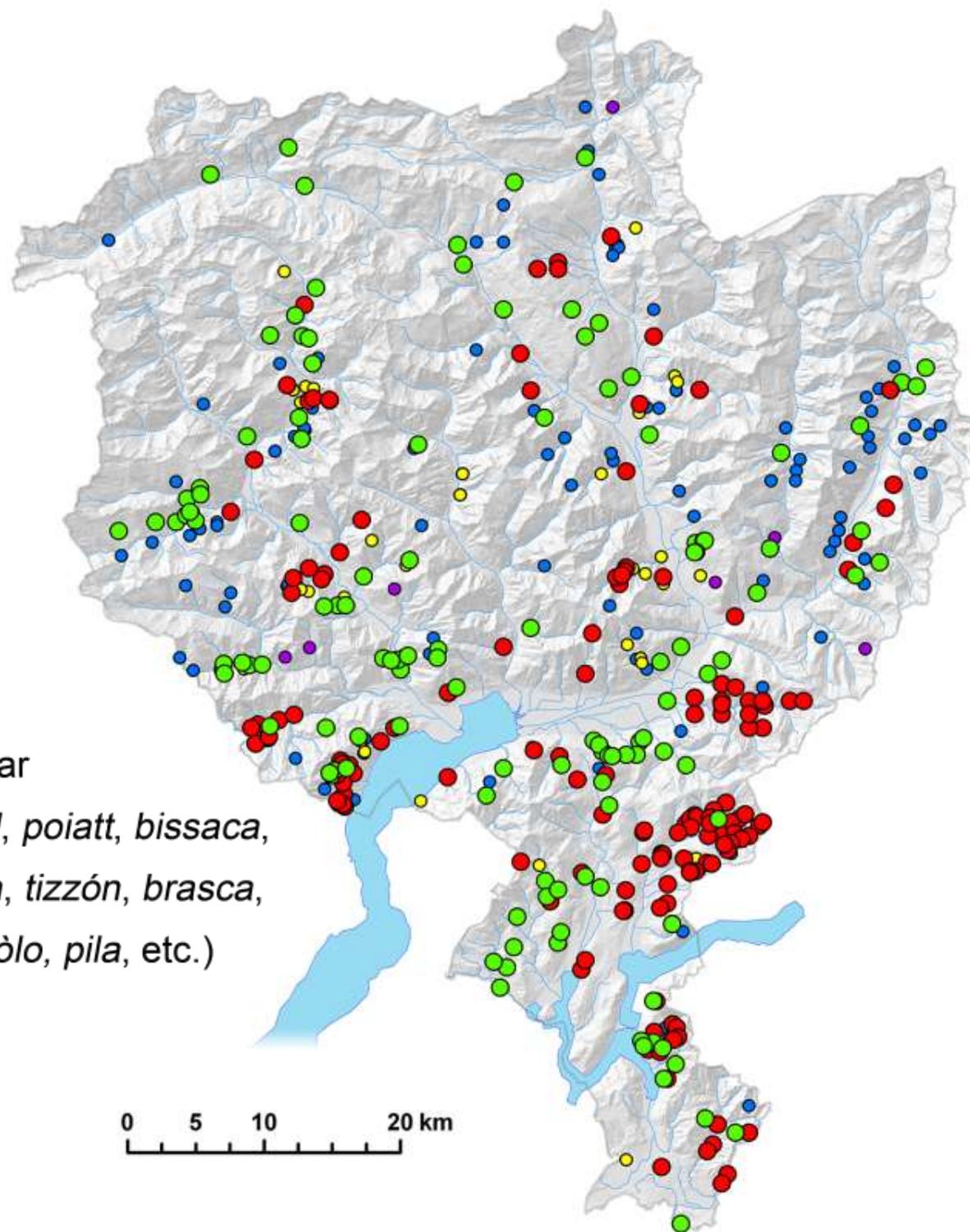
Toponymic traces of the wood charcoal proto-industry are very frequent in the valleys of the southern slope of the Swiss Alps

platea, platae:

city square, flat and open place

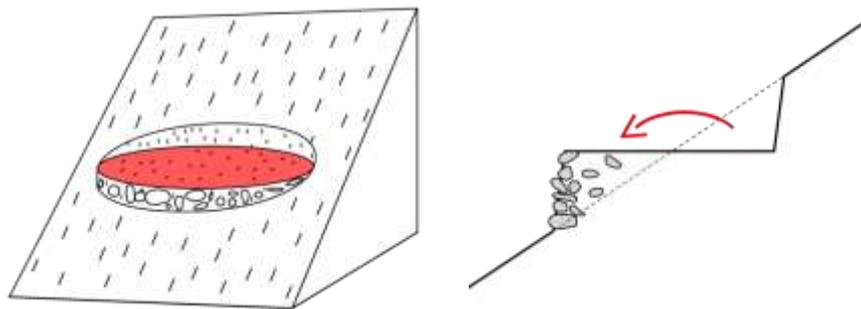


- 131 ● *carb-*
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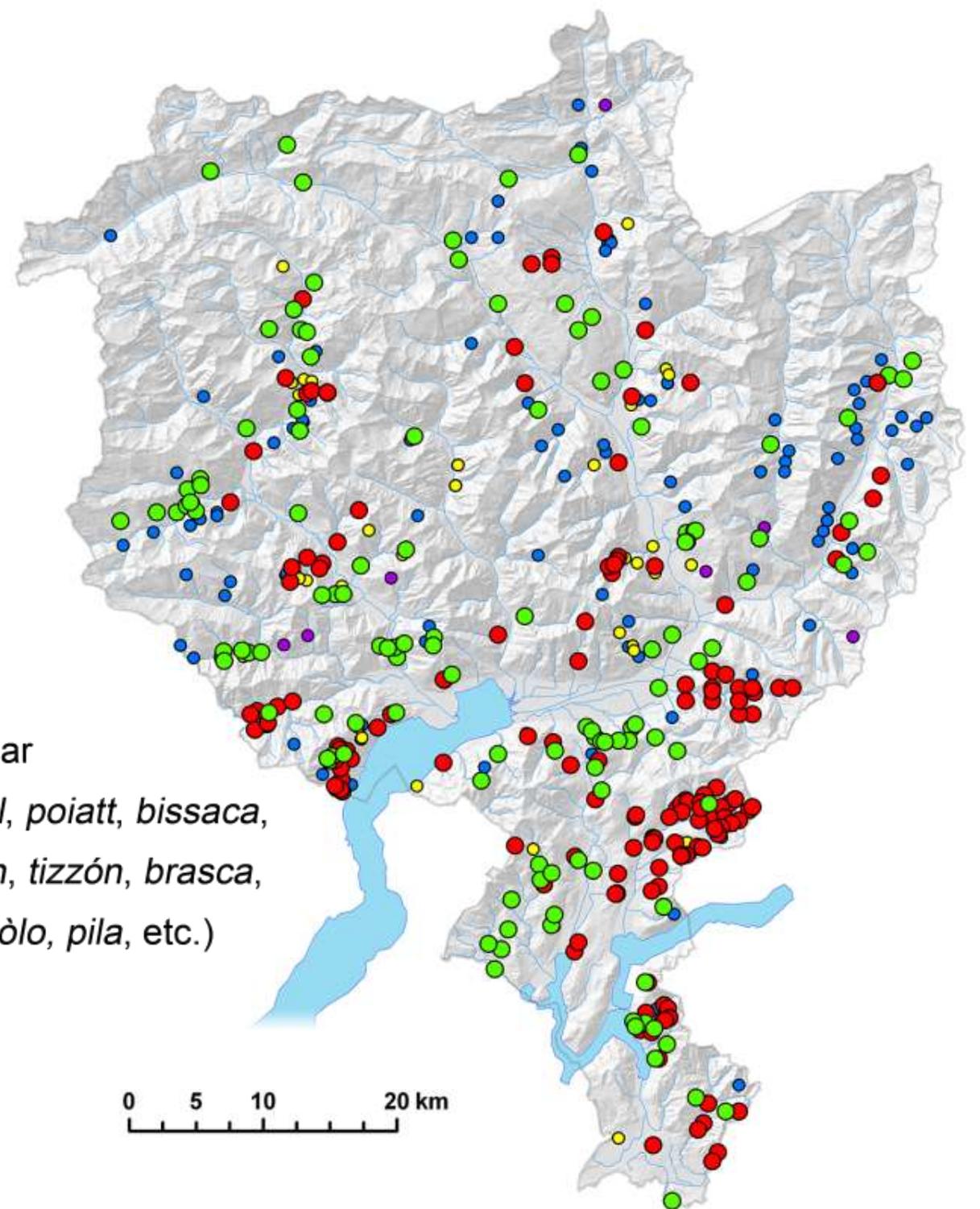


Toponymic traces of the wood charcoal proto-industry are very frequent in the valleys of the southern slope of the Swiss Alps

platea, platae:
city square, flat and open place



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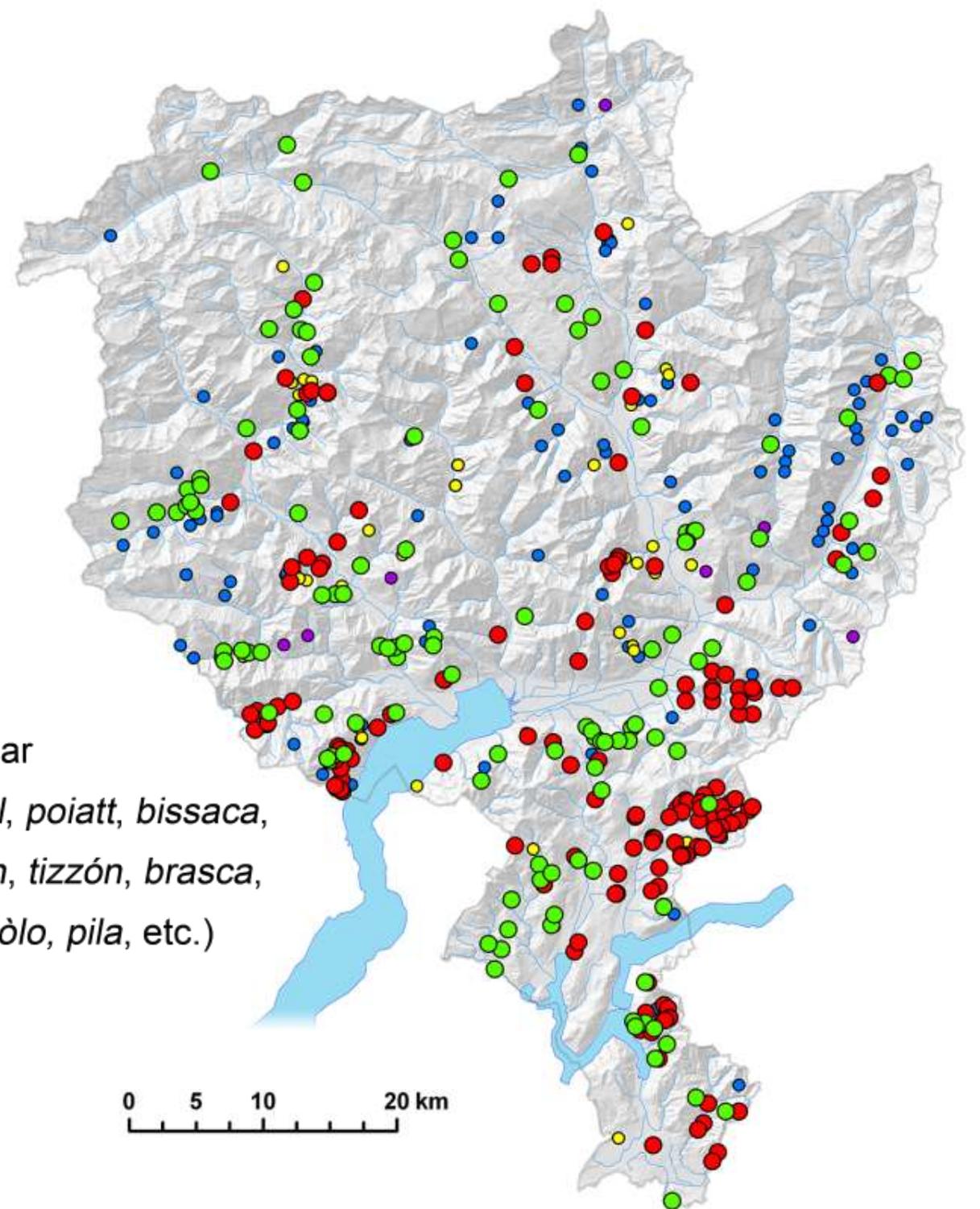


Toponymic traces of the wood charcoal proto-industry are very frequent in the valleys of the southern slope of the Swiss Alps

baita:
charcoal burner's hut, mountain refuge



- 131 ● *carb-*
- 158 ● *piazz-*
- 103 ● *báit-*
- 8 ● *éira* and similar
- 45 ● others (*pianèll, poiatt, bissaca, bastina, portín, tizzón, brasca, sciücch, cagnòlo, pila, etc.*)



Toponymic traces of the wood charcoal proto-industry are very frequent in the valleys of the southern slope of the Swiss Alps

baita:
charcoal burner's hut, mountain refuge



- 131 ● *carb-*
- 158 ● *piazz-*
- 103 ● *báit-*
- 8 ● *éira*



woodcutters, woodsmen, lumberjacks
charcoal makers, colliers



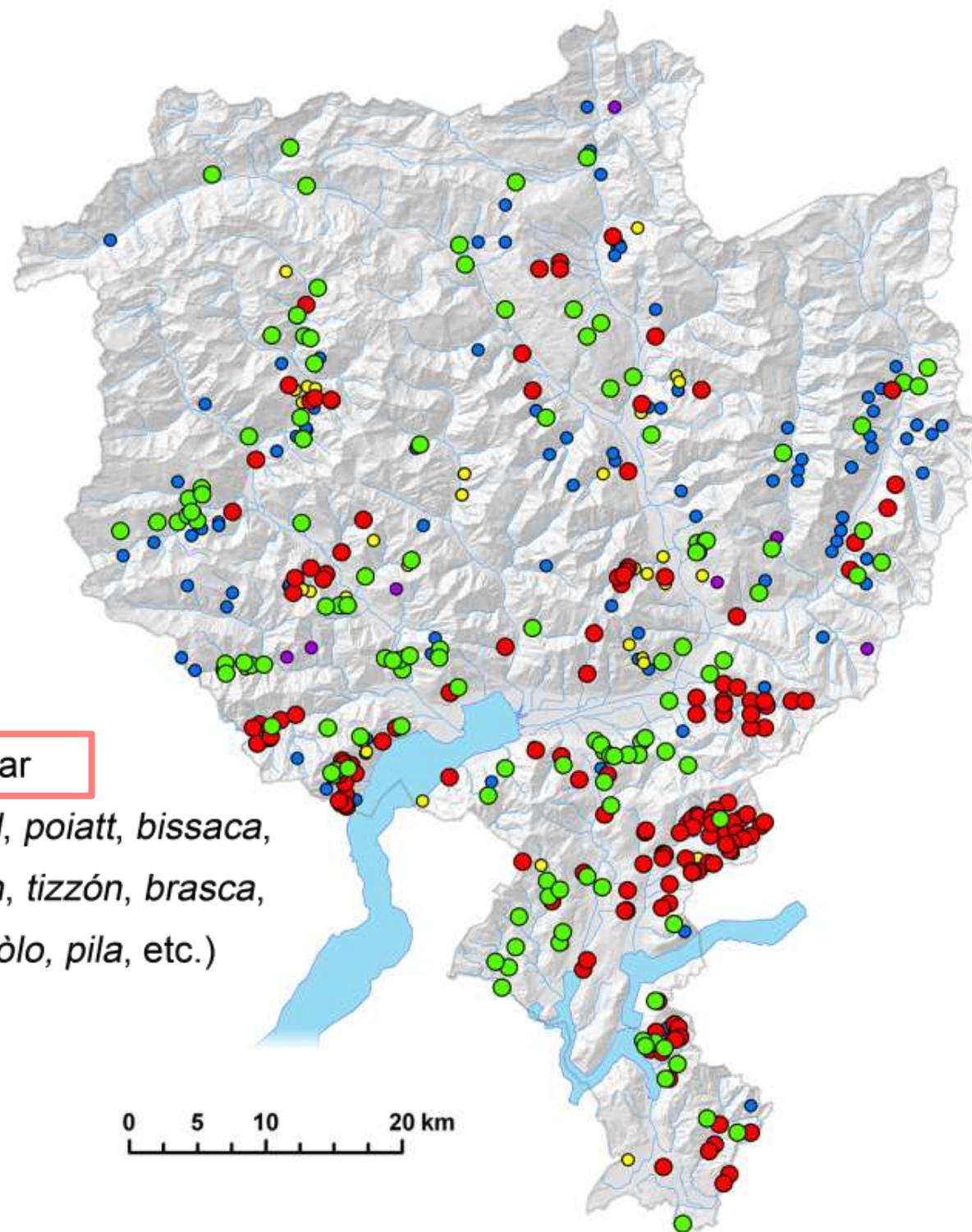
Toponymic traces of the wood charcoal proto-industry are very frequent in the valleys of the southern slope of the Swiss Alps

area, areae, arealis:

farmyard, barnyard, forecourt in front of a rural building



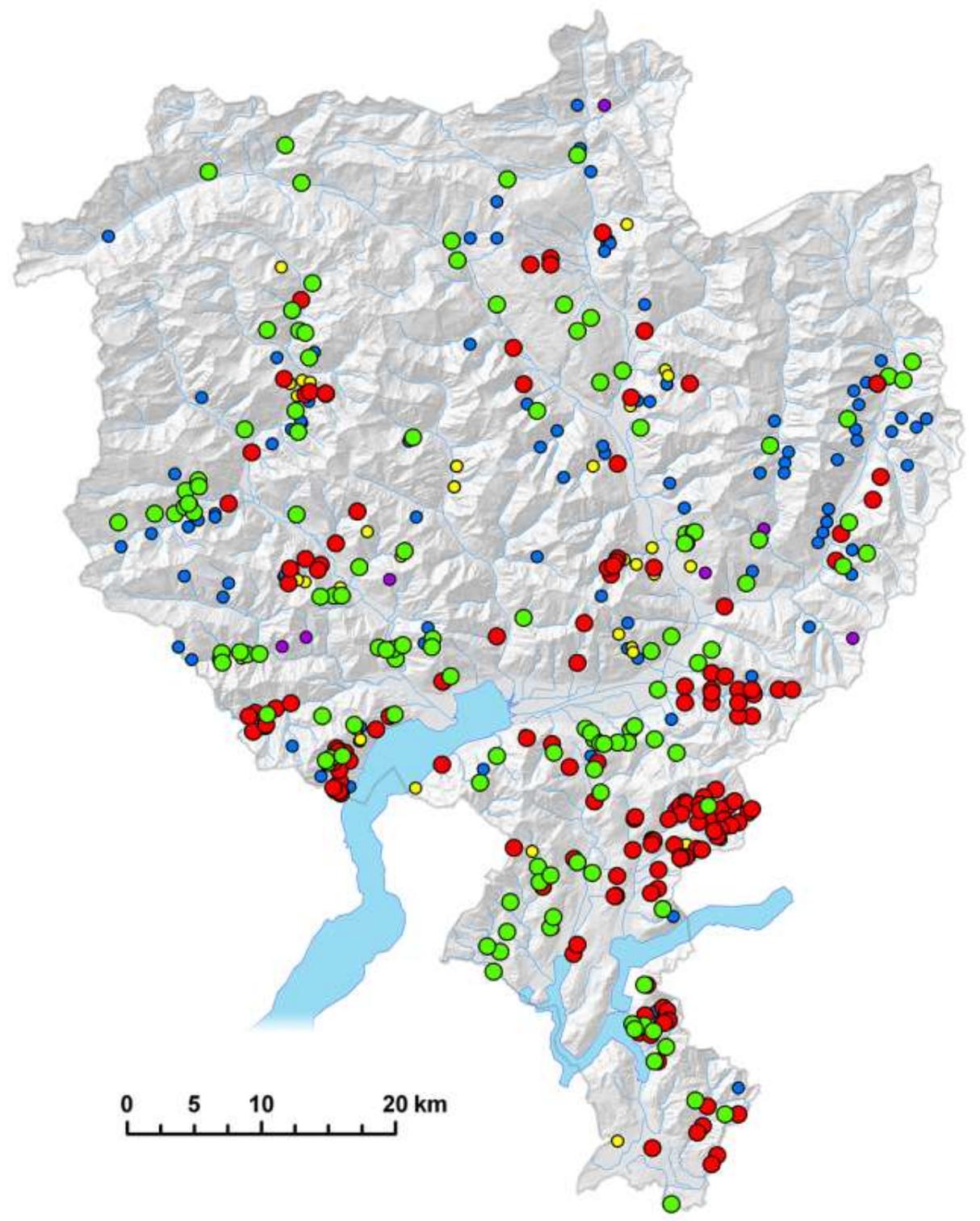
- 131 ● *carb-*
- 158 ● *piazz-*
- 103 ● *báit-*
- 8 ● *éira* and similar
- 45 ● others (*pianèll, poiatt, bissaca, bastina, portín, tizzón, brasca, sciücch, cagnòlo, pila, etc.*)



Abundance ?

~11 place names / 100 km²

Can we consider this mean density or frequency as very high ?



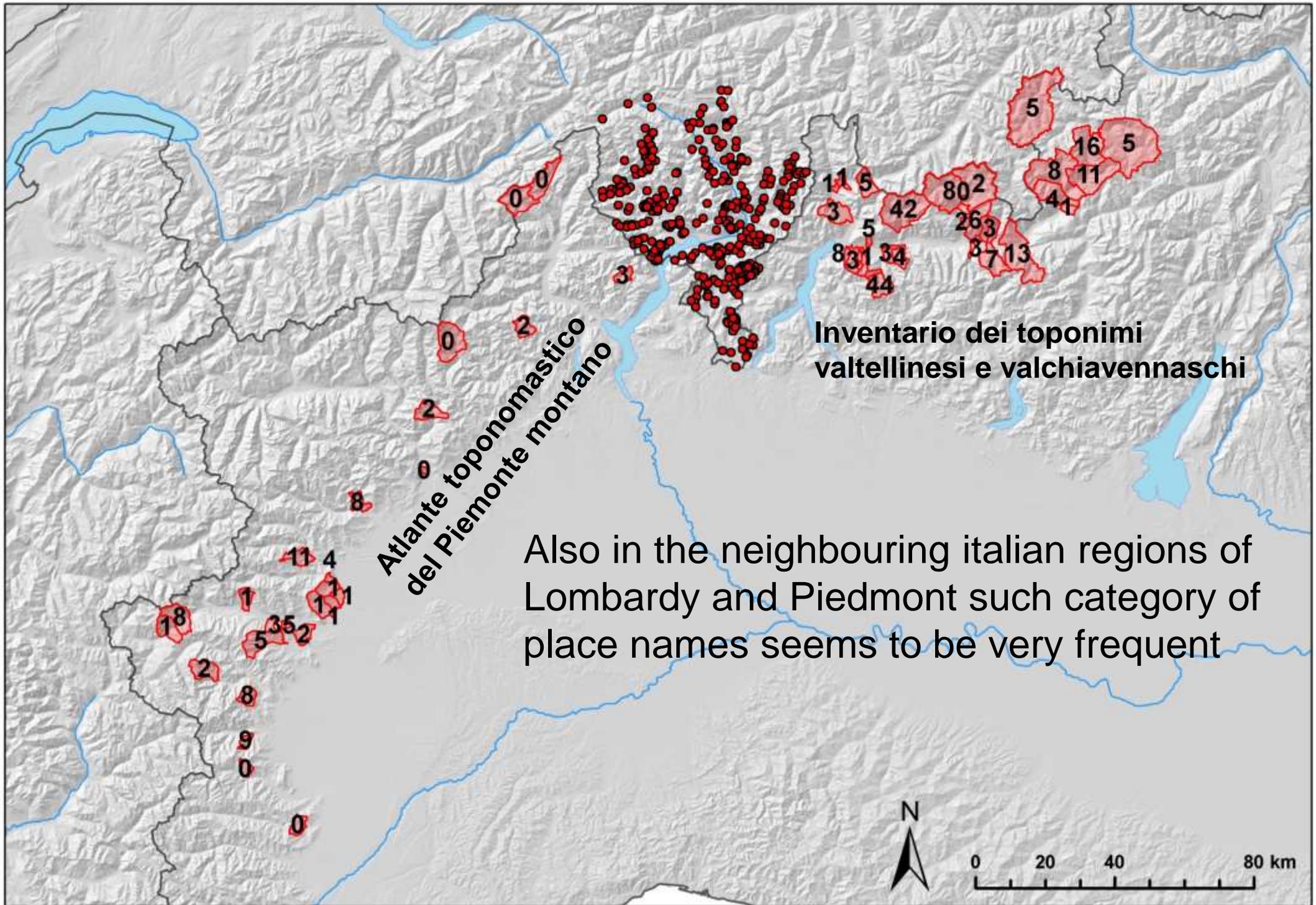
Abundance ?

Ticino

345 toponyms

3186 km²

~11 / 100 km²



Abundance ?

Ticino

345 toponyms

3186 km²

~11 / 100 km²

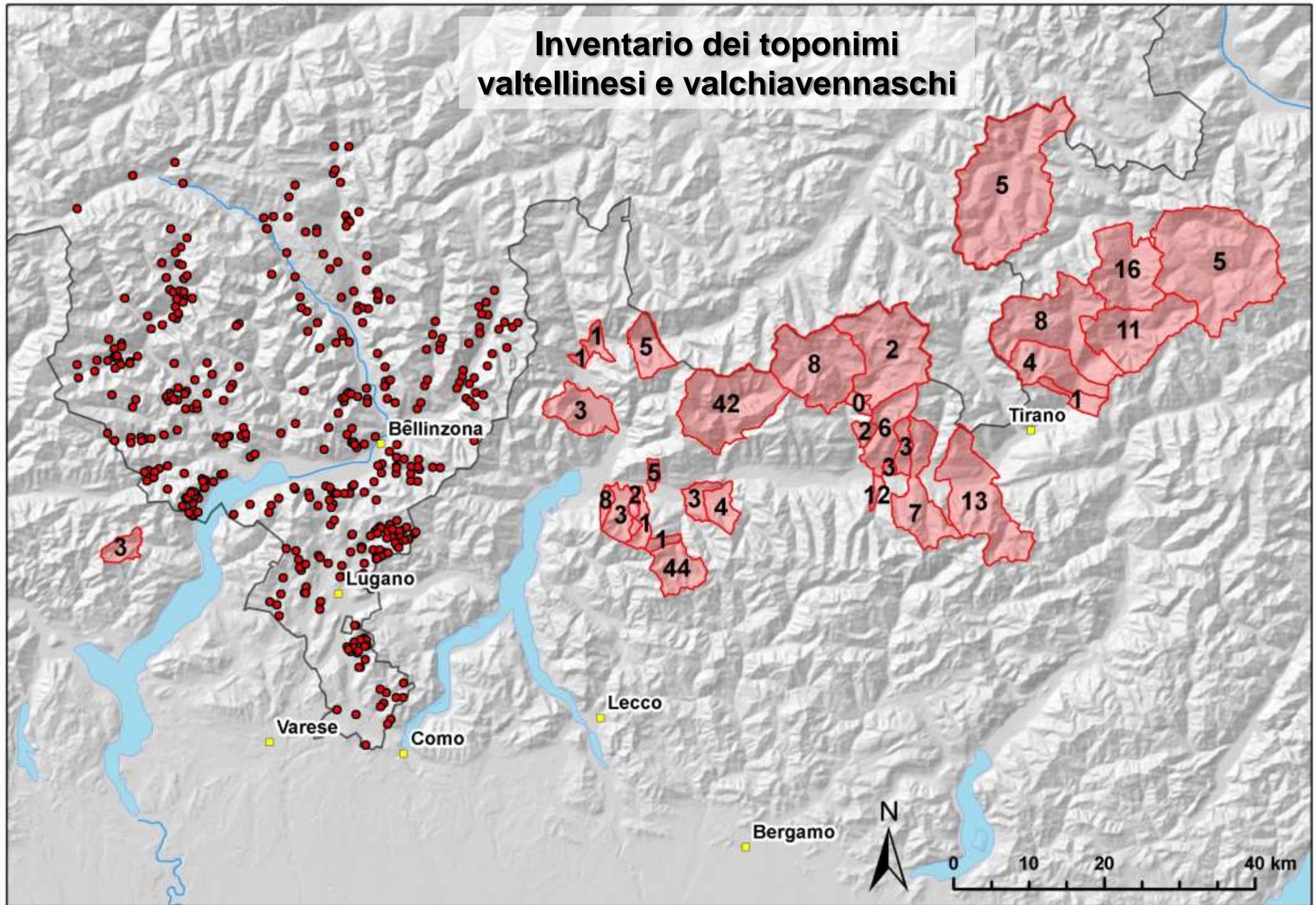
Valtellina

230 toponyms

1658 km²

~14 / 100 km²

Inventario dei toponimi valtellinesi e valchiavennaschi



Abundance ?

Ticino

345 toponyms

3186 km²

~11 / 100 km²

Valtellina

230 toponyms

1658 km²

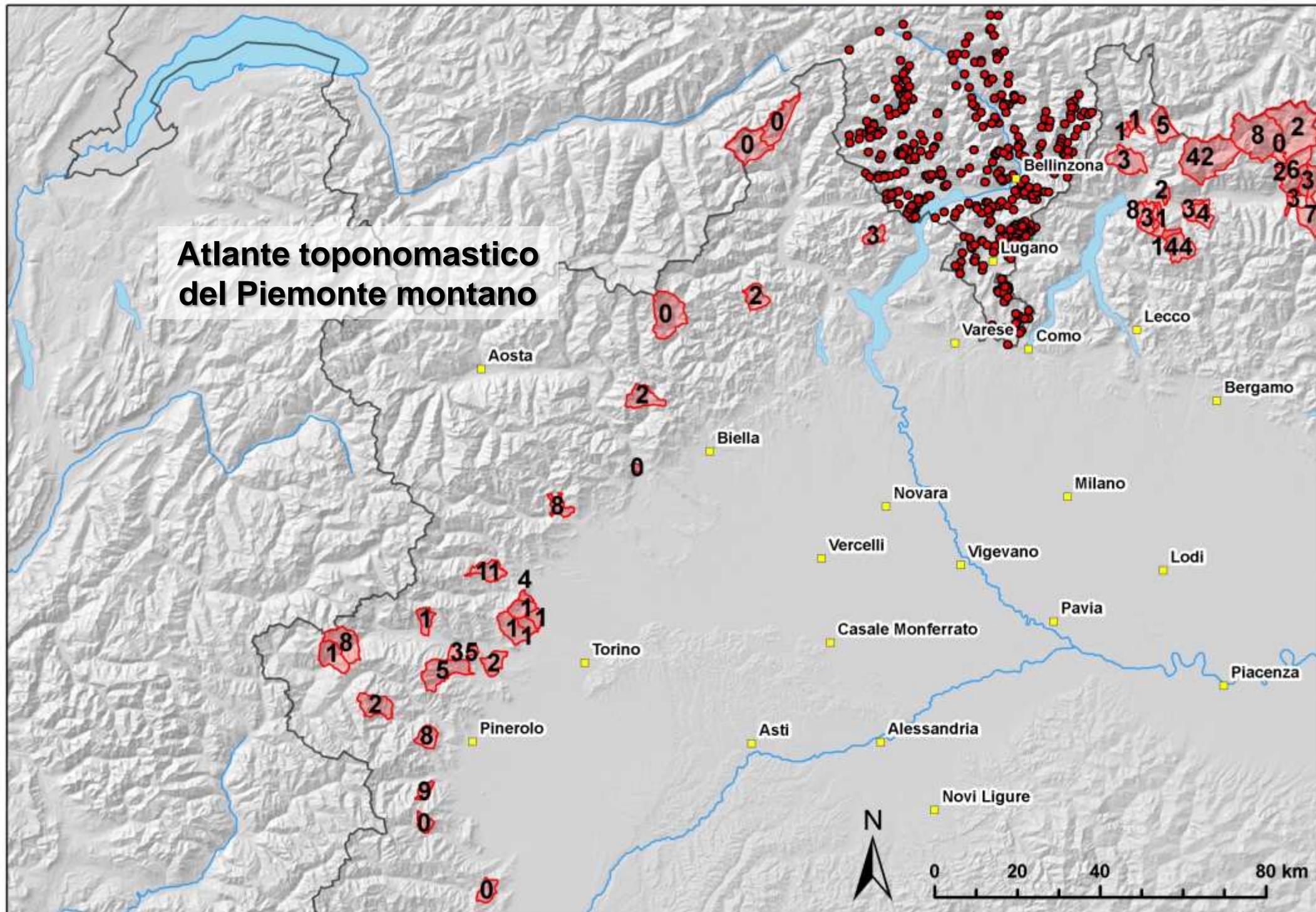
~14 / 100 km²

Piemonte

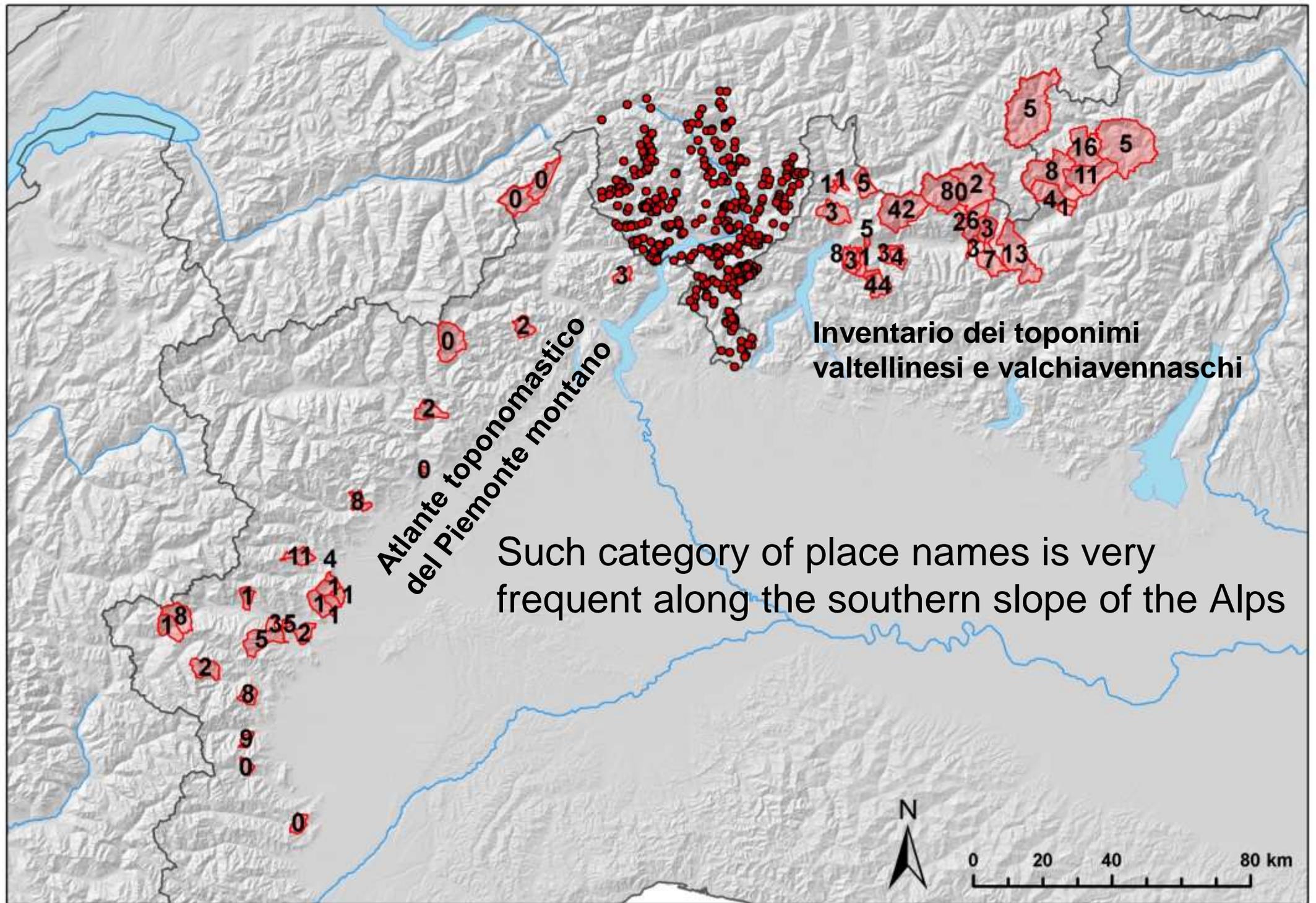
115 toponyms

710 km²

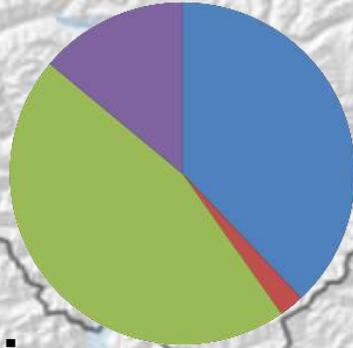
~16 / 100 km²



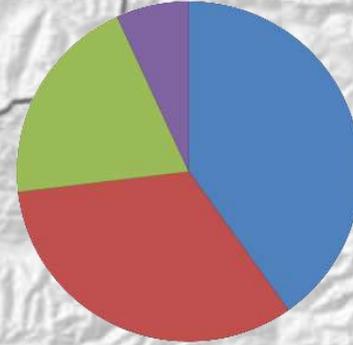
Abundance ?



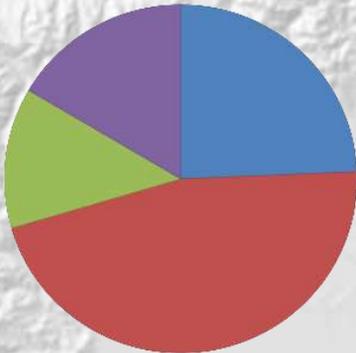
Abundance ?



Ticino
345 in
3186 km²
11/100 km²



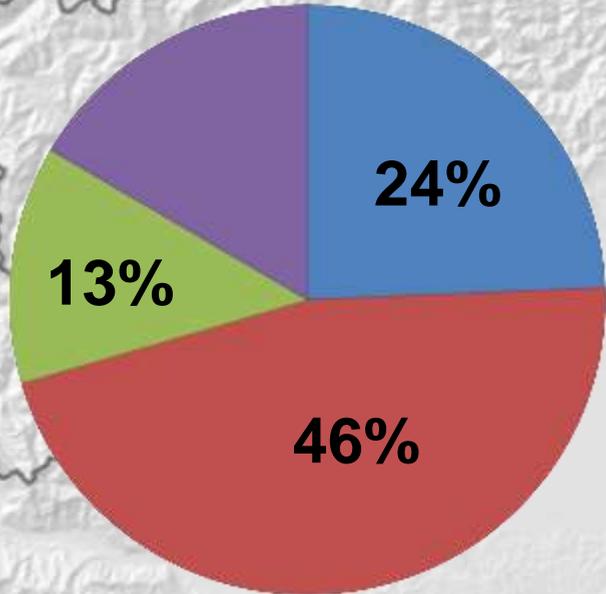
Valtellina
230 in
1658 km²
14/100 km²



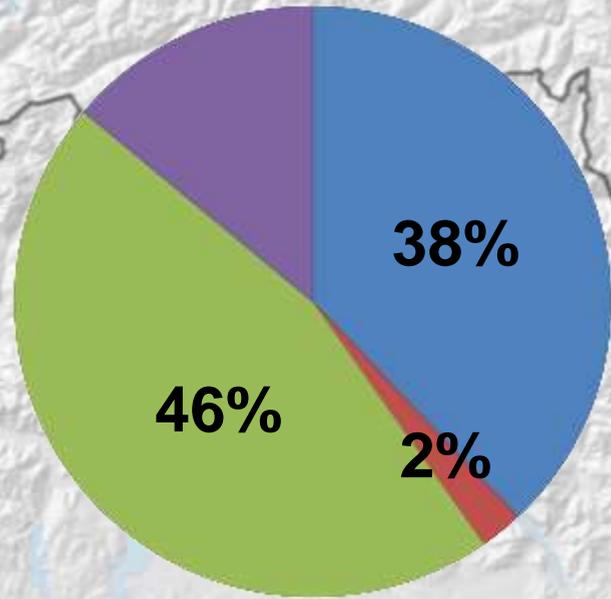
Piemonte
115 in
710 km²
16/100 km²



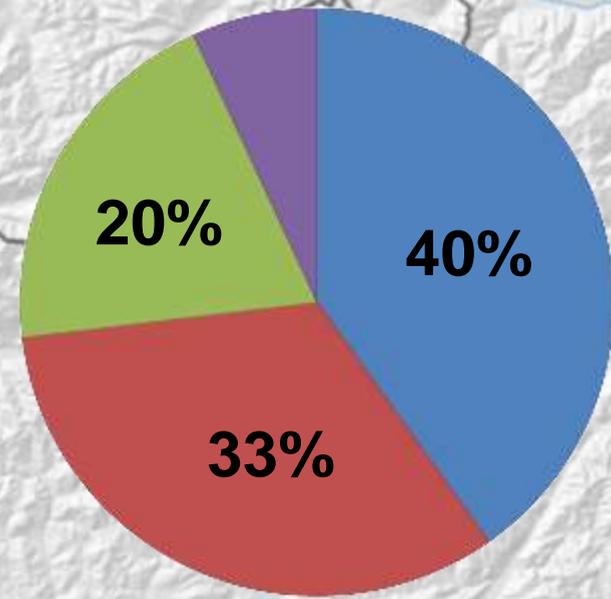
Abundance ?



Piemonte



Ticino



Valtellina



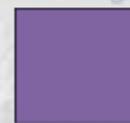
carb-



aia



piazz-



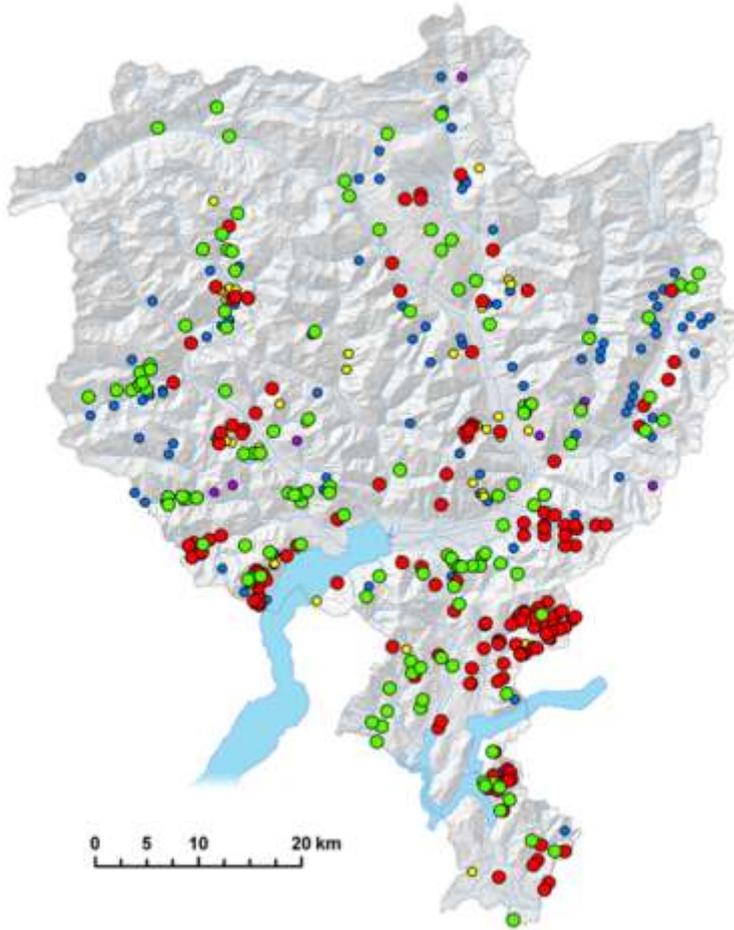
others

Why this abundance ?

lots of place names

a clue or a proxy for

a great tradition and long history
of wood charcoal production

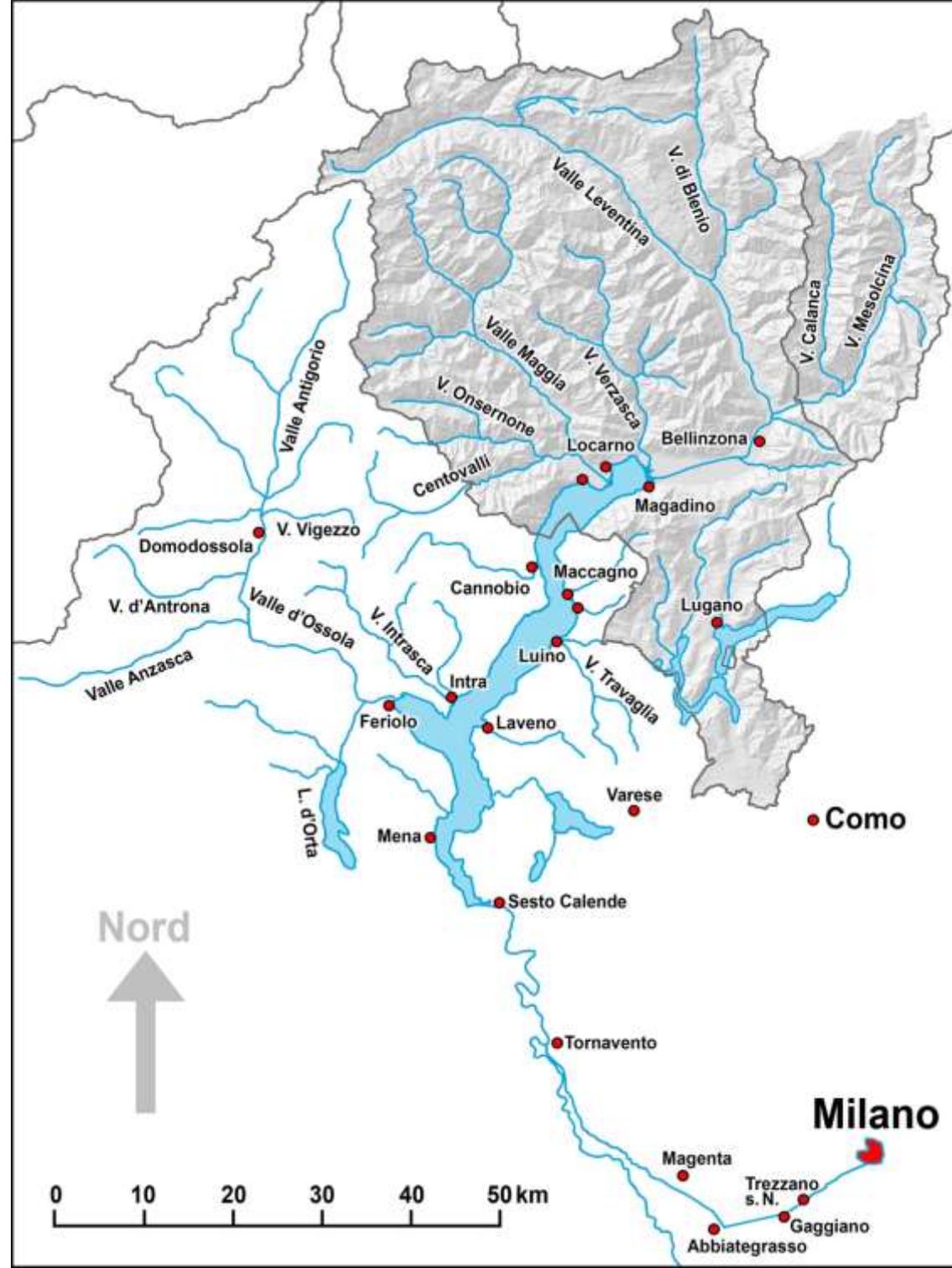


Milan in the late Middle Ages

A very big and powerful city-state with a huge system of navigable canals.

Between 1150 and 1270 AD building of the *Naviglio Grande*.

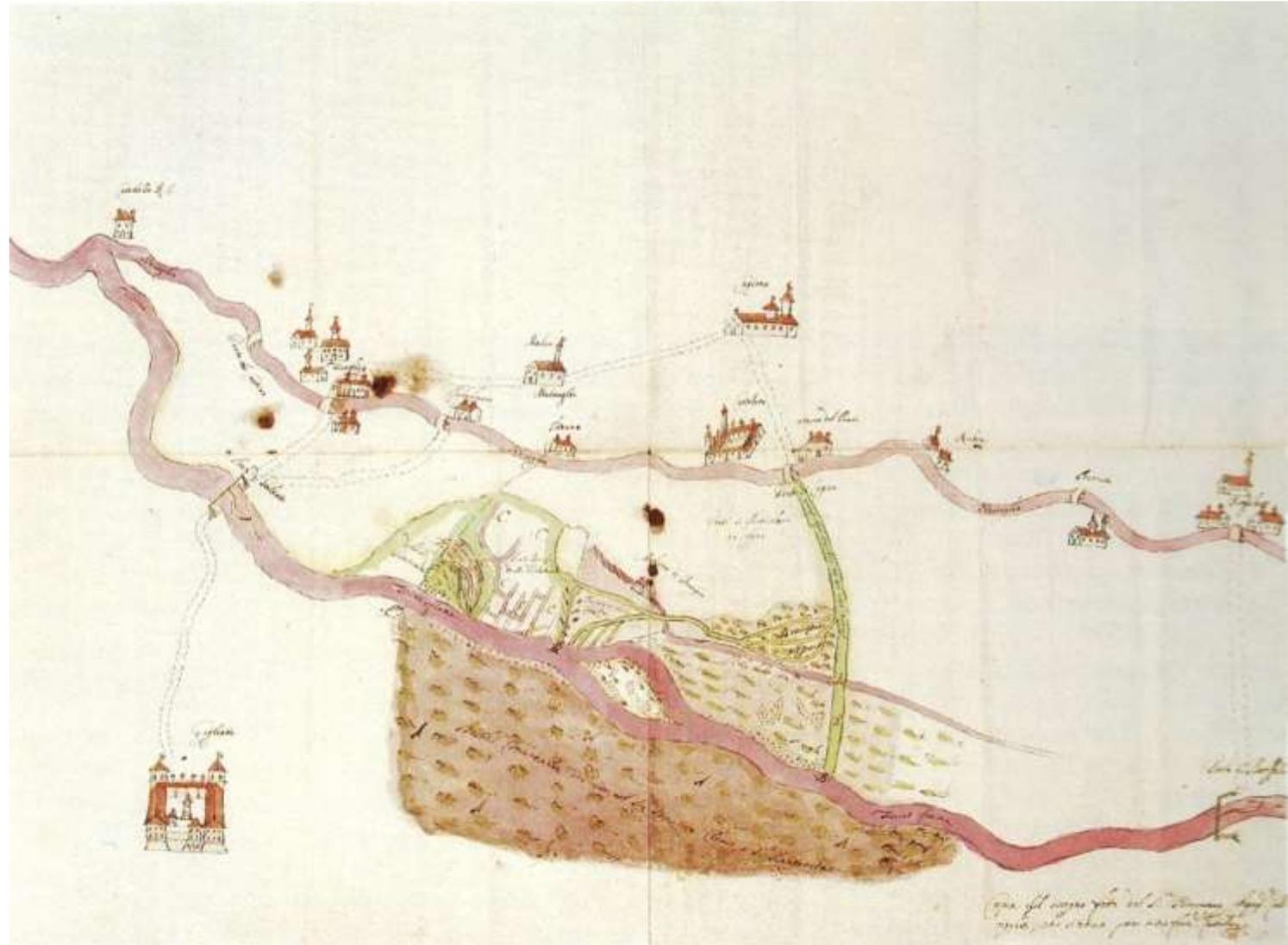
An impressive work of engineering. It is the first navigable channel of this length in Europe.



Milan in the late Middle Ages

according to a manuscript dated AD 1271:

The Municipality of Milan builded the *naviglio* to improve the supply of the city in timber, fuel, forage, livestock and other goods.

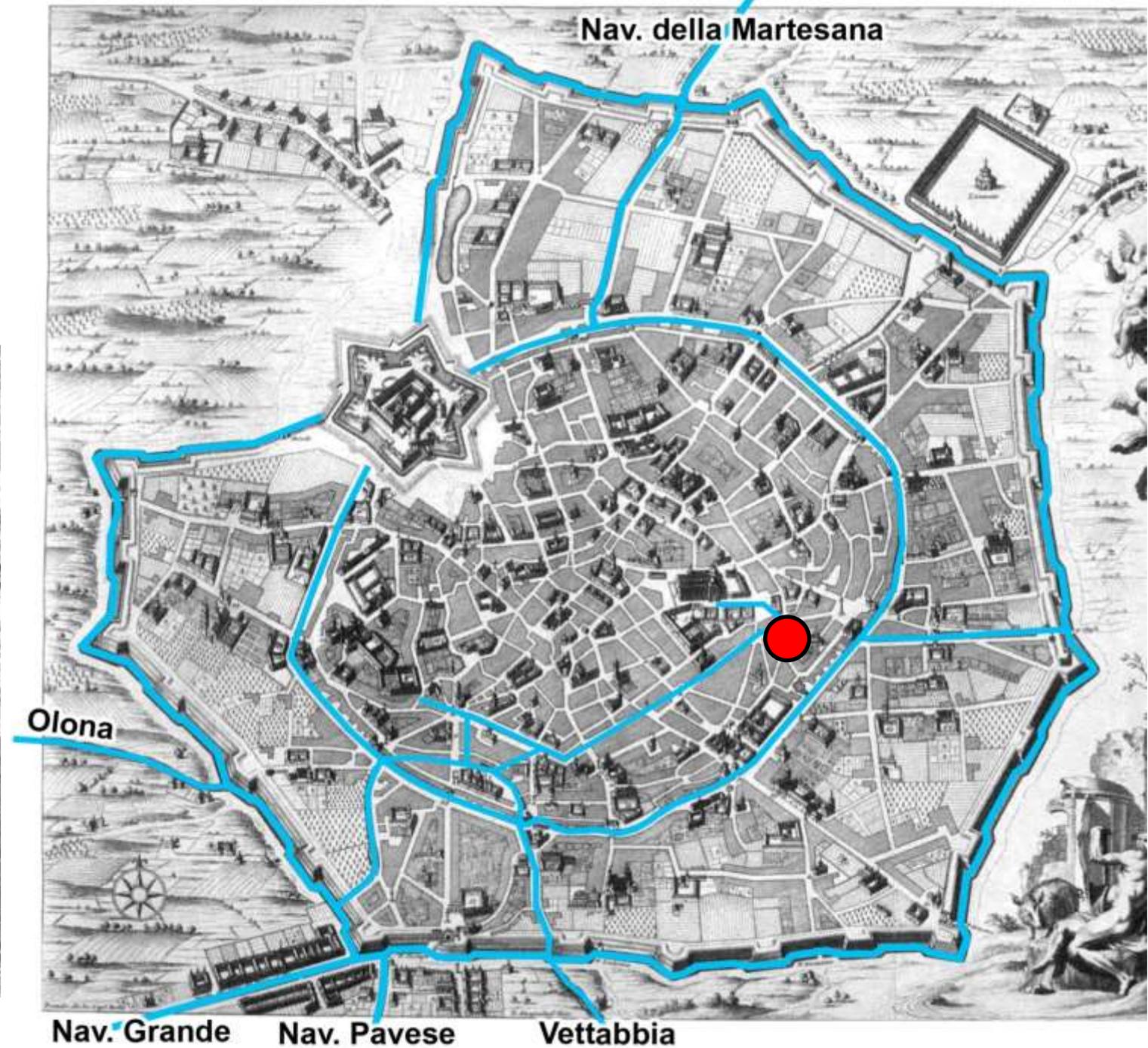


Milan and its canals

1388-1857:
there was a specific port inside the city
for unloading the charcoal and the
marbles



old map published in 1704



The economic power of Milan during the late Middle Ages

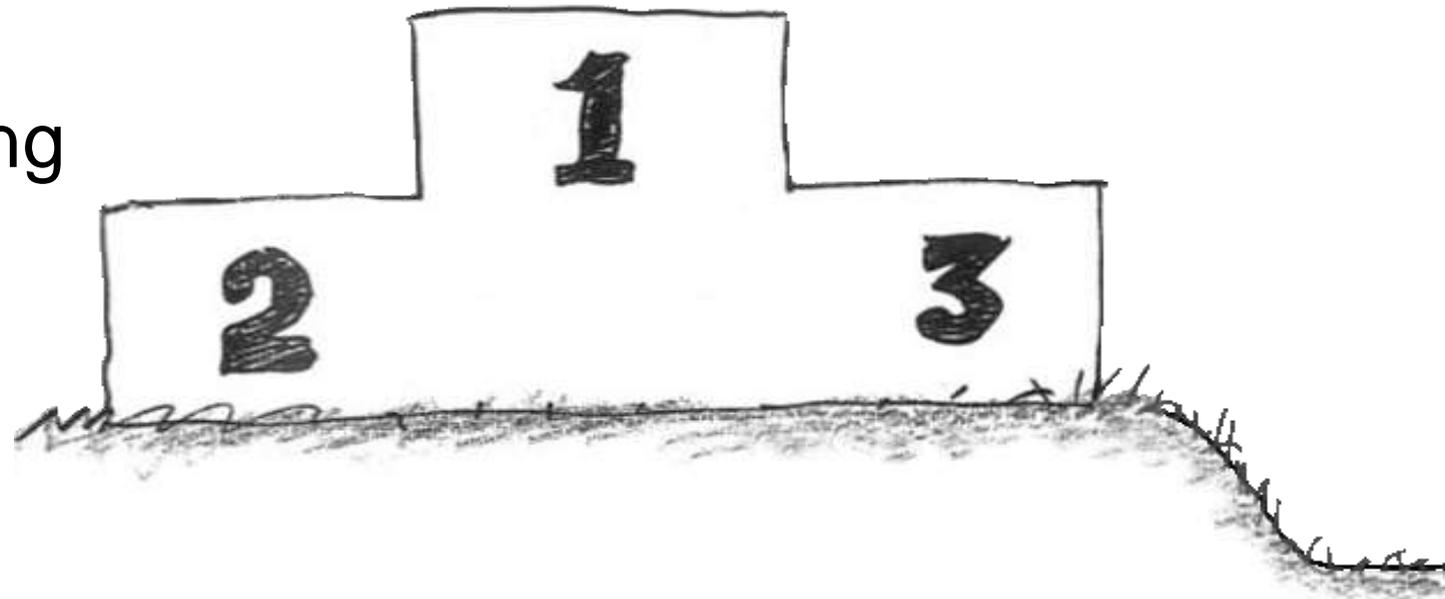
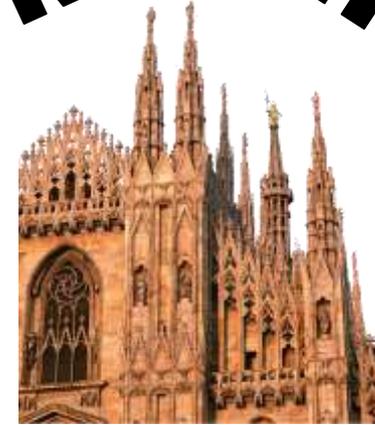
One of the largest steel producing centers of the European continent

100'000 - 200'000 inhabitants

One of the most densely-populated cities of Europe after Paris and Granada

The biggest city of Italy considering the area inside the city walls

Milan



A great economic centre with a worrying lack of wood fuel

Clear signs of depletion of the forests of the plain of Lombardy already between 1300 and 1600 AD.

wooded area according to the cadastre of Charles V (~1550 AD):
5% of total land area in the high productive agricultural land
10% in the marginal country

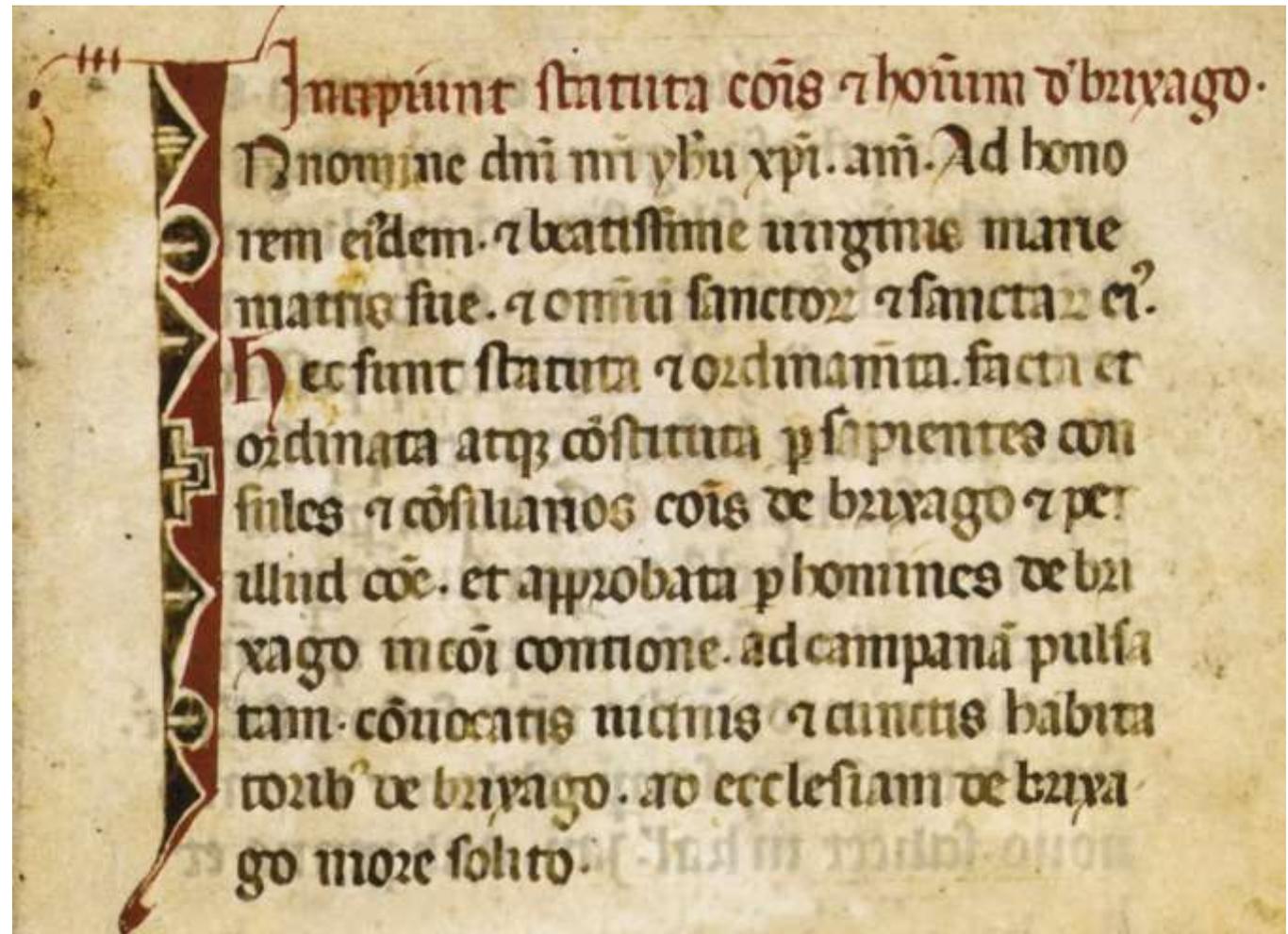


A great economic centre with a worrying lack of wood fuel

At the same time in the valleys of Canton Ticino we notice the first signs of problems related to an excessive production and export of wood charcoal

Old municipal bylaw of Brissago (~1340 AD), article 47:

"Nobody can produce charcoal in the territory of Brissago. The transgressor must pay 10 coins for any infringement. If someone produce it, in any case it is forbidden to take and sell this product out of our territory."



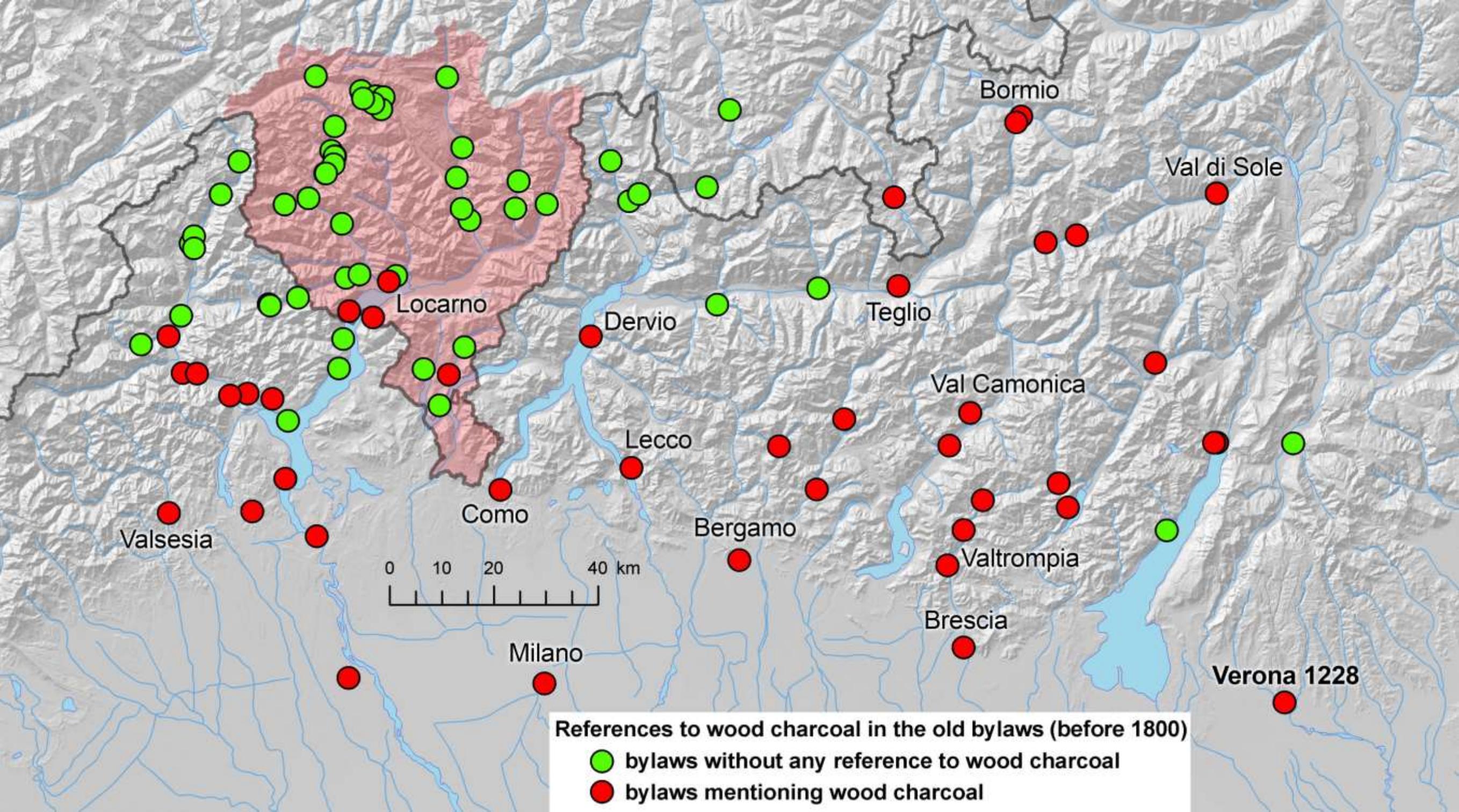
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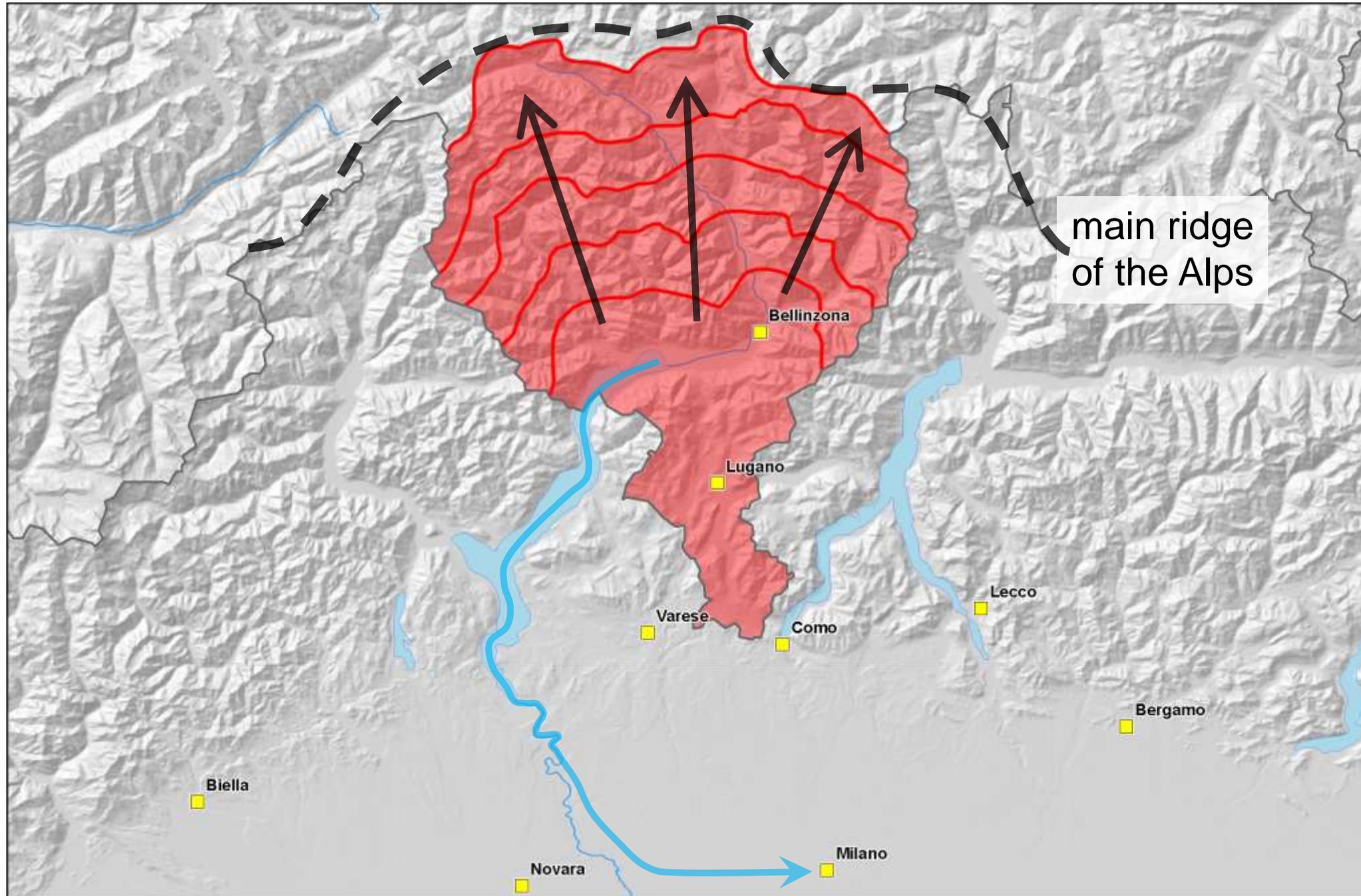
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after 1750: expansion to the North of the charcoal production sites



after 1750: expansion to the North of the charcoal production sites

Factors that determined this shift:



Economic growth and industrial revolution:

- 1) Population growth
- 2) Industrial development (textile, engineering,...)
- 3) Development of railways



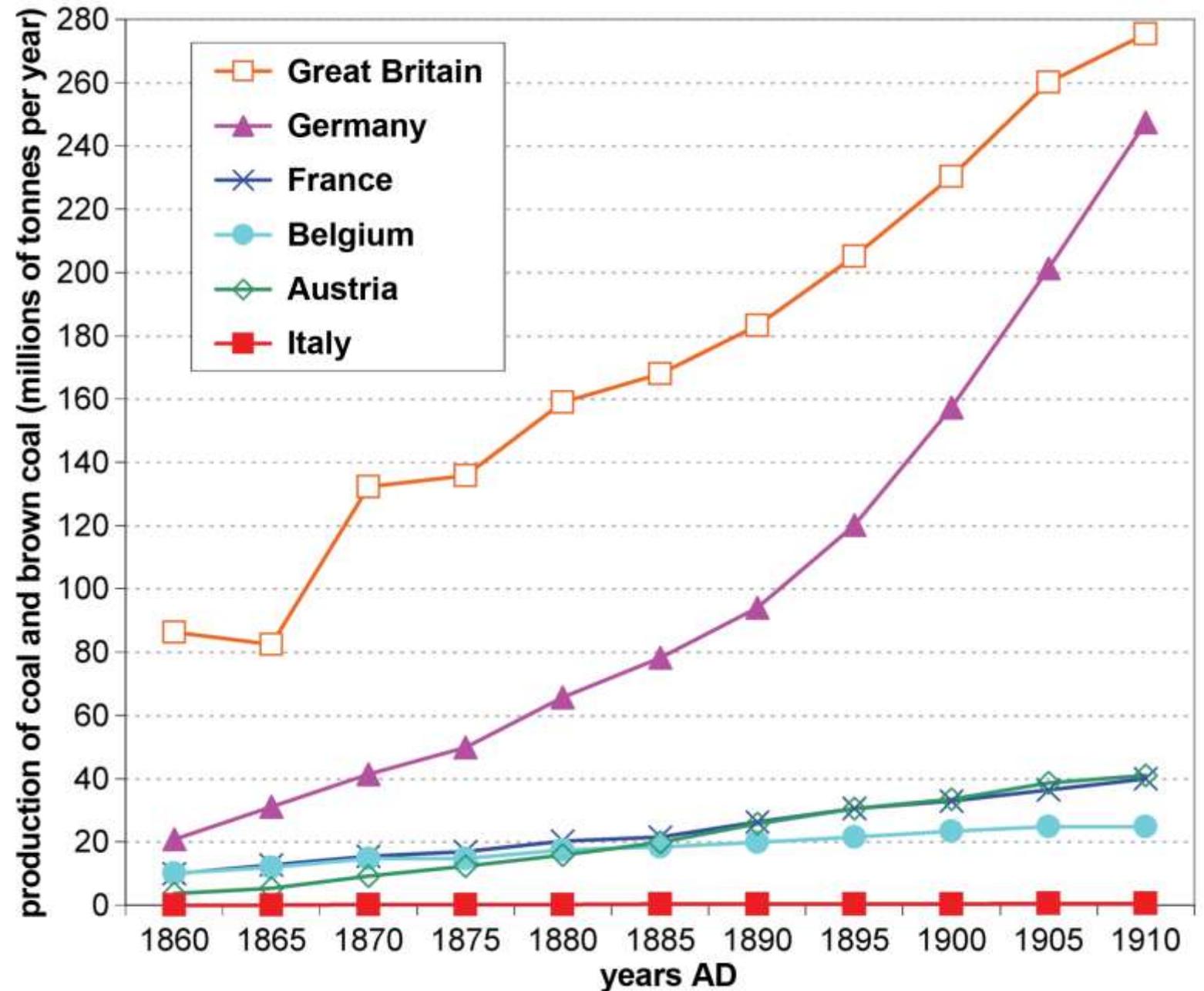
Stagnation in terms of indigenous energy resources:

- 1) Depletion and exhaustion of forest resources in Lombardy
- 2) Lack of deposits of fossil fuels (coal, brown coal, lignite)
- 3) Increase in price of charcoal on the market of Milan, but less than the increase in price of firewood and imported coal

after 1750: expansion to the North of the charcoal production sites

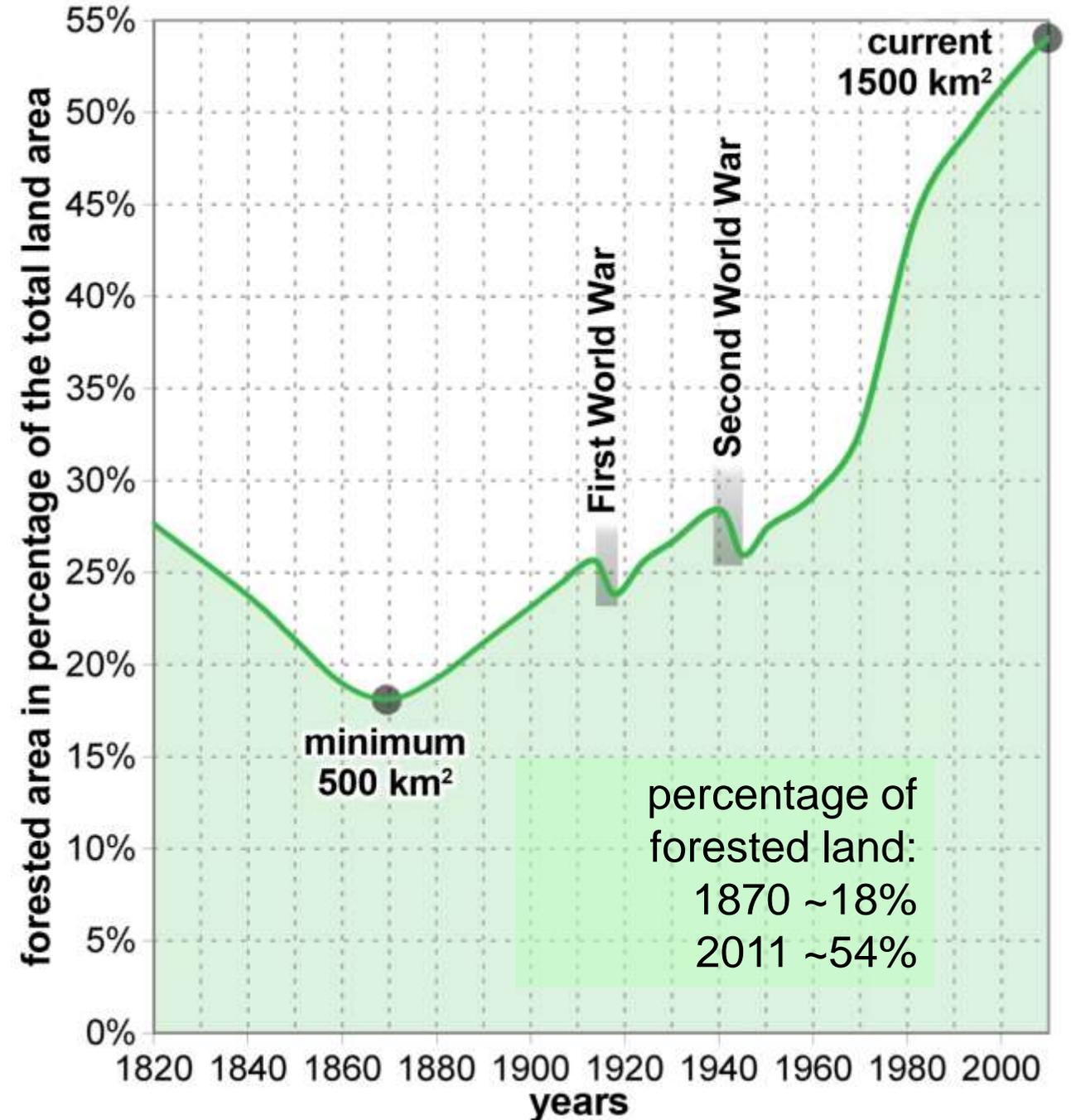
Importation of coke and coal in thousand of tonnes per year

period	France	Italy
1861-1864	6'000	408
1865-1874	7'025	749
1875-1884	9'007	1'764
1885-1894	10'256	3'791
1895-1904	12'681	4'858
1905-1913	18'392	8'892



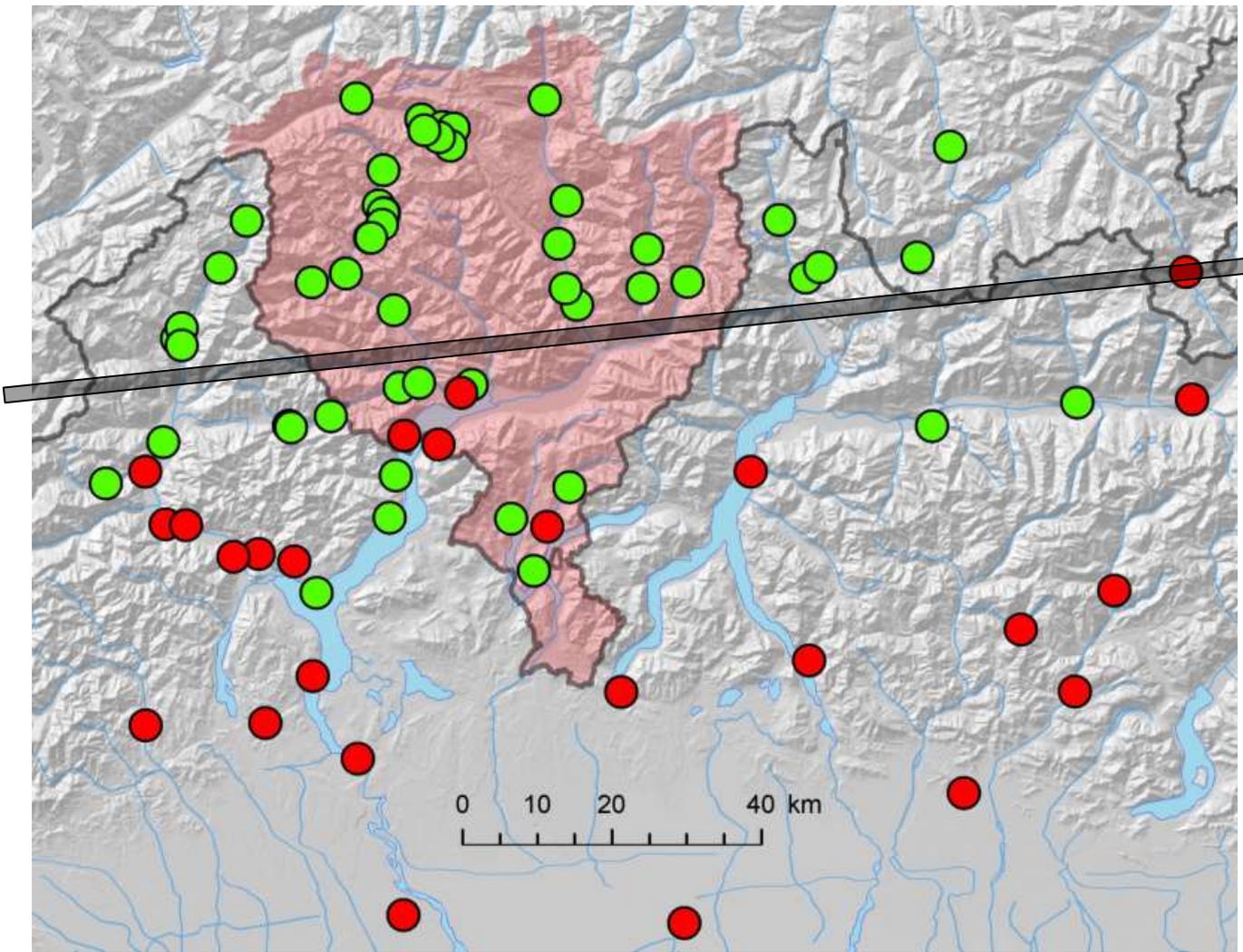
The 19th century is the final peak of the wood charcoal industry

Nineteenth century assault on the forest resources in Canton Ticino





Stefano Franscini 1837:
In the past, it was convenient to produce charcoal only in the vicinity of Lake Maggiore, but now, with the growing needs of Lombardy, it has become lucrative and advantageous to cut the forests even in the upper parts of Maggia and Leventina valleys



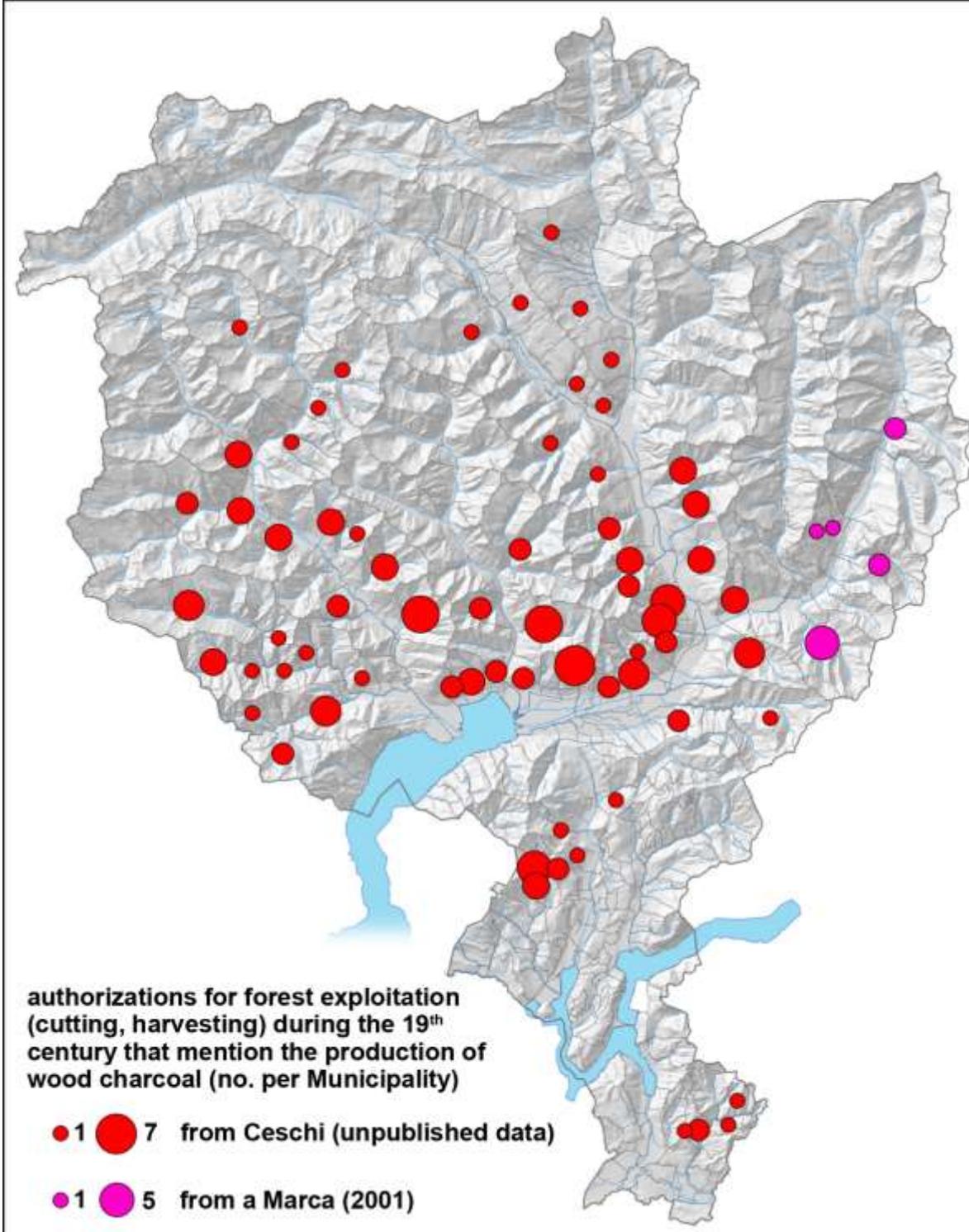
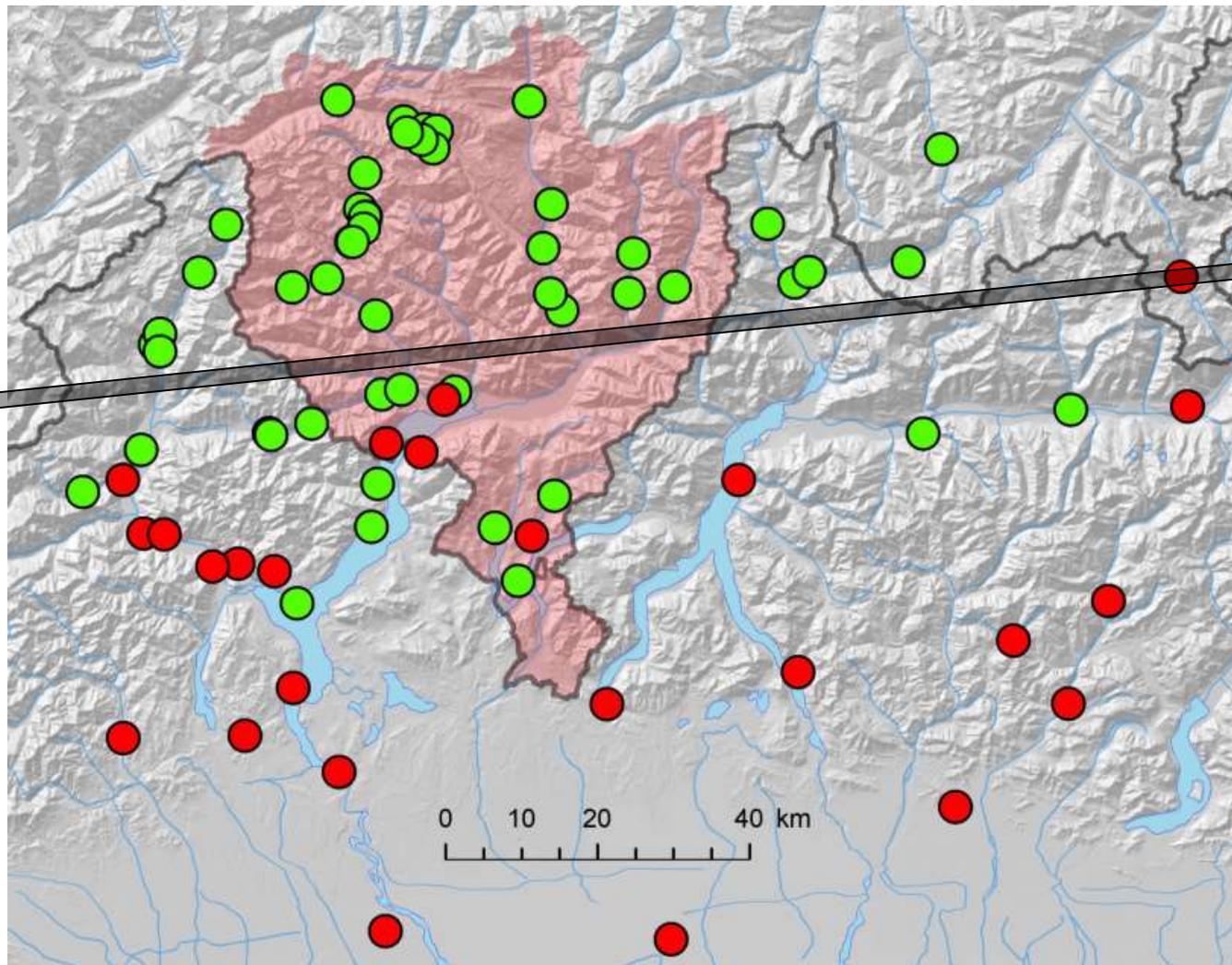
References to wood charcoal in the old municipal bylaws

- bylaws without any reference to wood charcoal
- bylaws mentioning wood charcoal



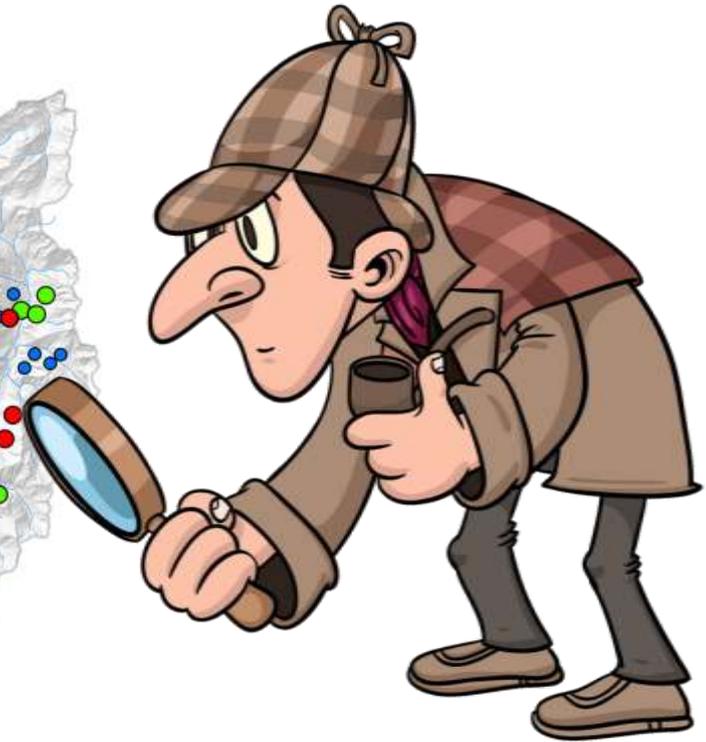
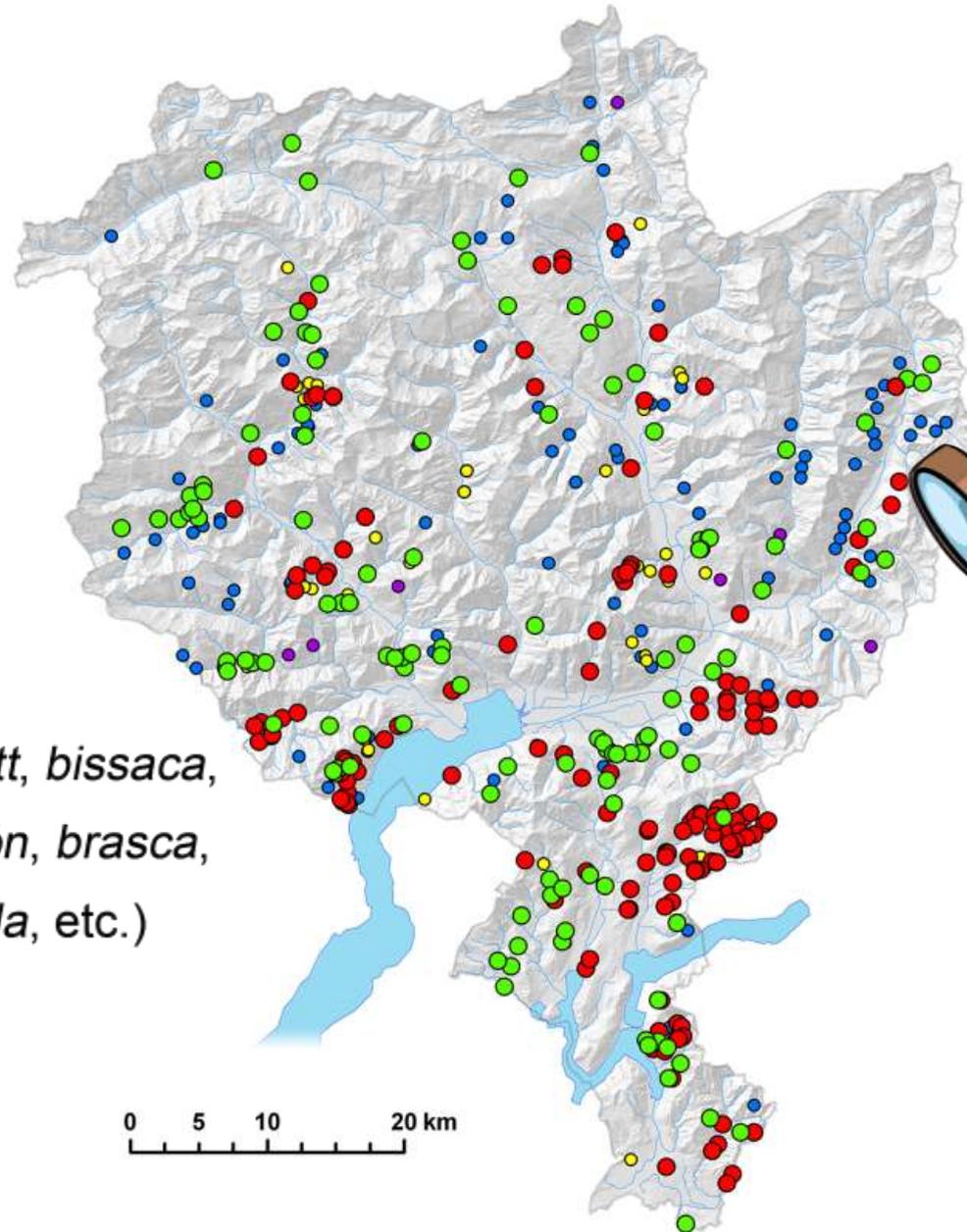
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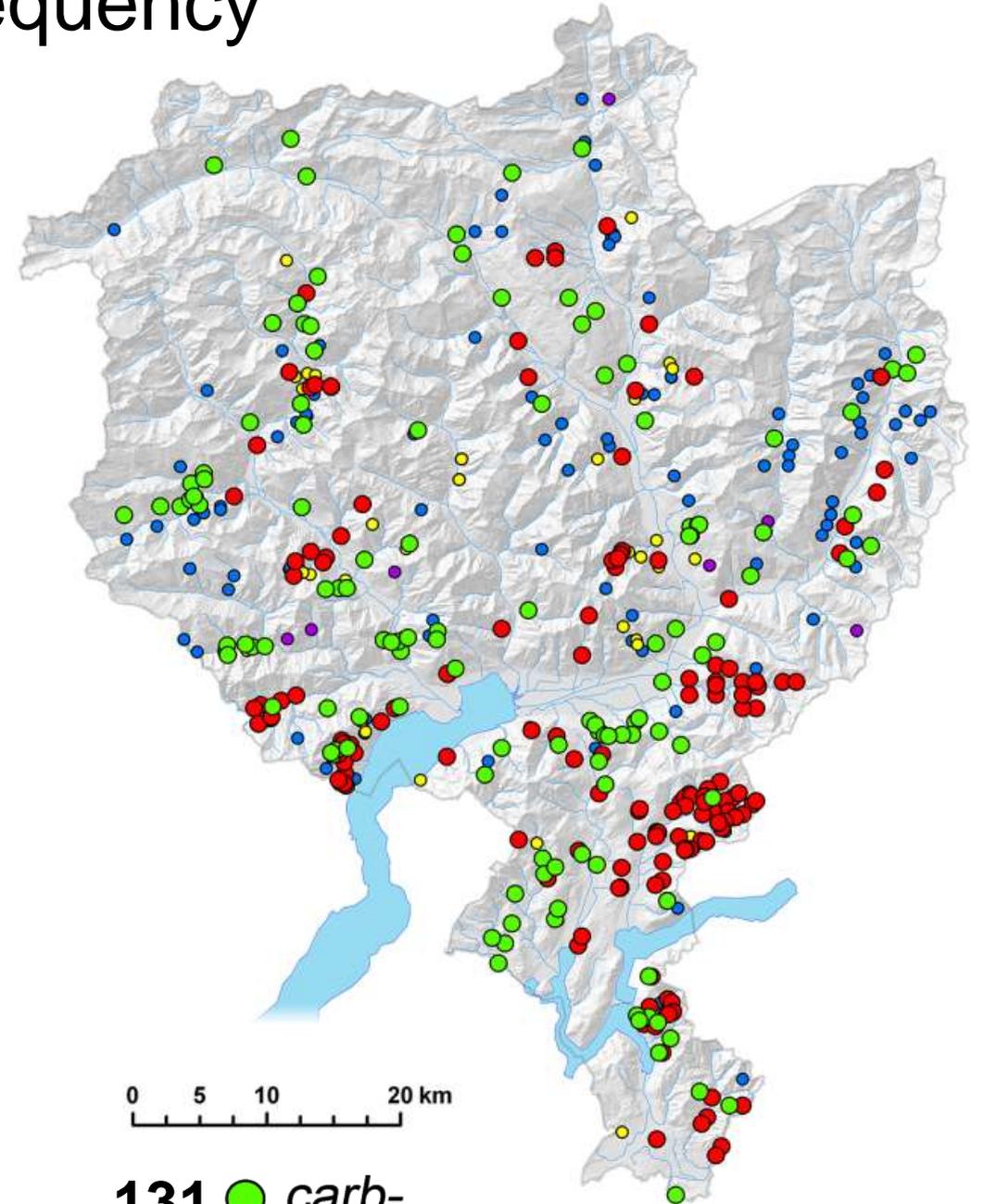
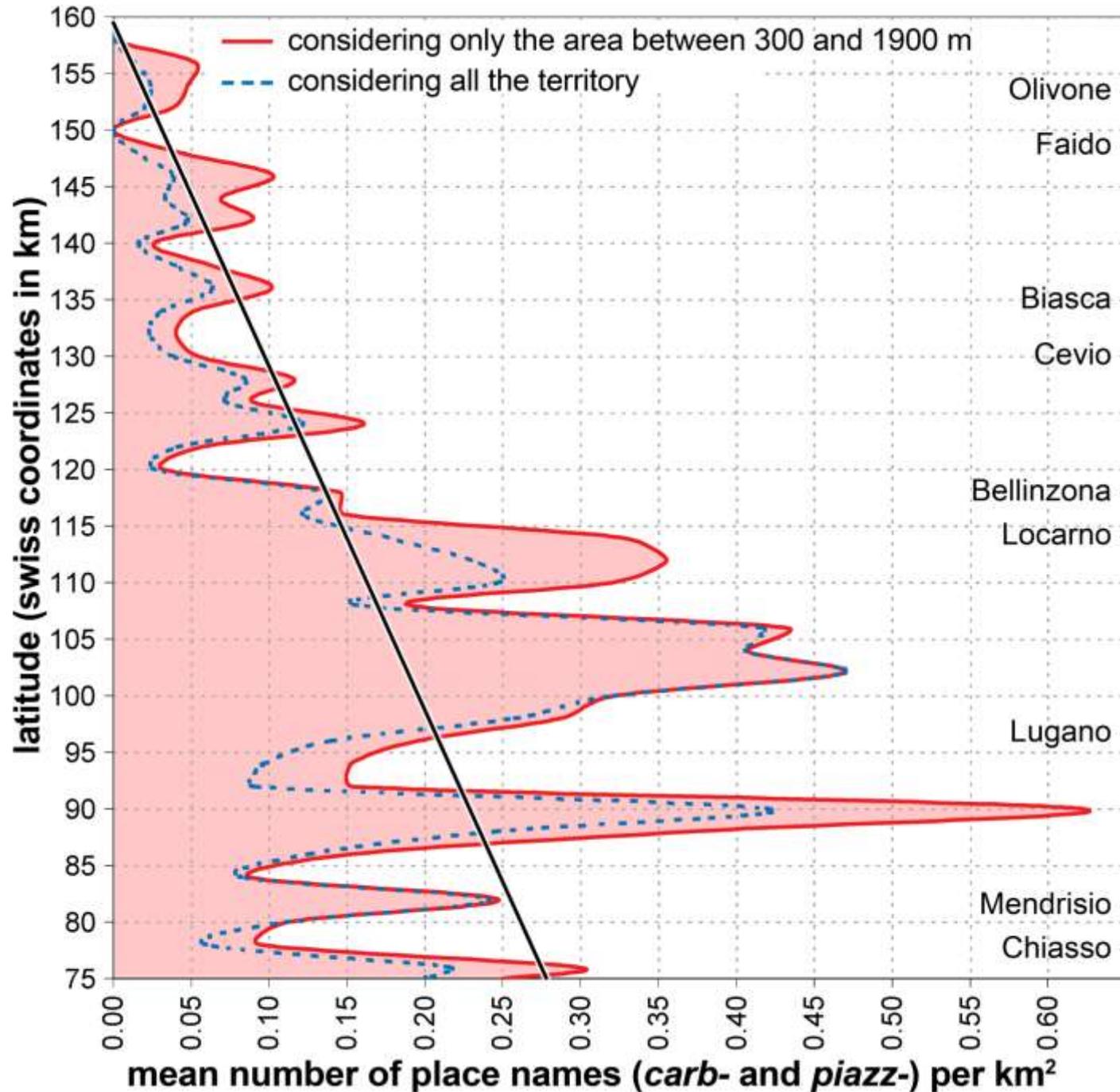


The analysis of the distribution of toponyms is another way to obtain valuable data on the past evolution of the charcoal industry

- 131 ● *carb-*
- 158 ● *piazz-*
- 103 ● *báit-*
- 8 ● *éira* and similar
- 45 ● others (*pianèll, poiatt, bissaca, bastina, portín, tizzón, brasca, sciücch, cagnòlo, pila, etc.*)

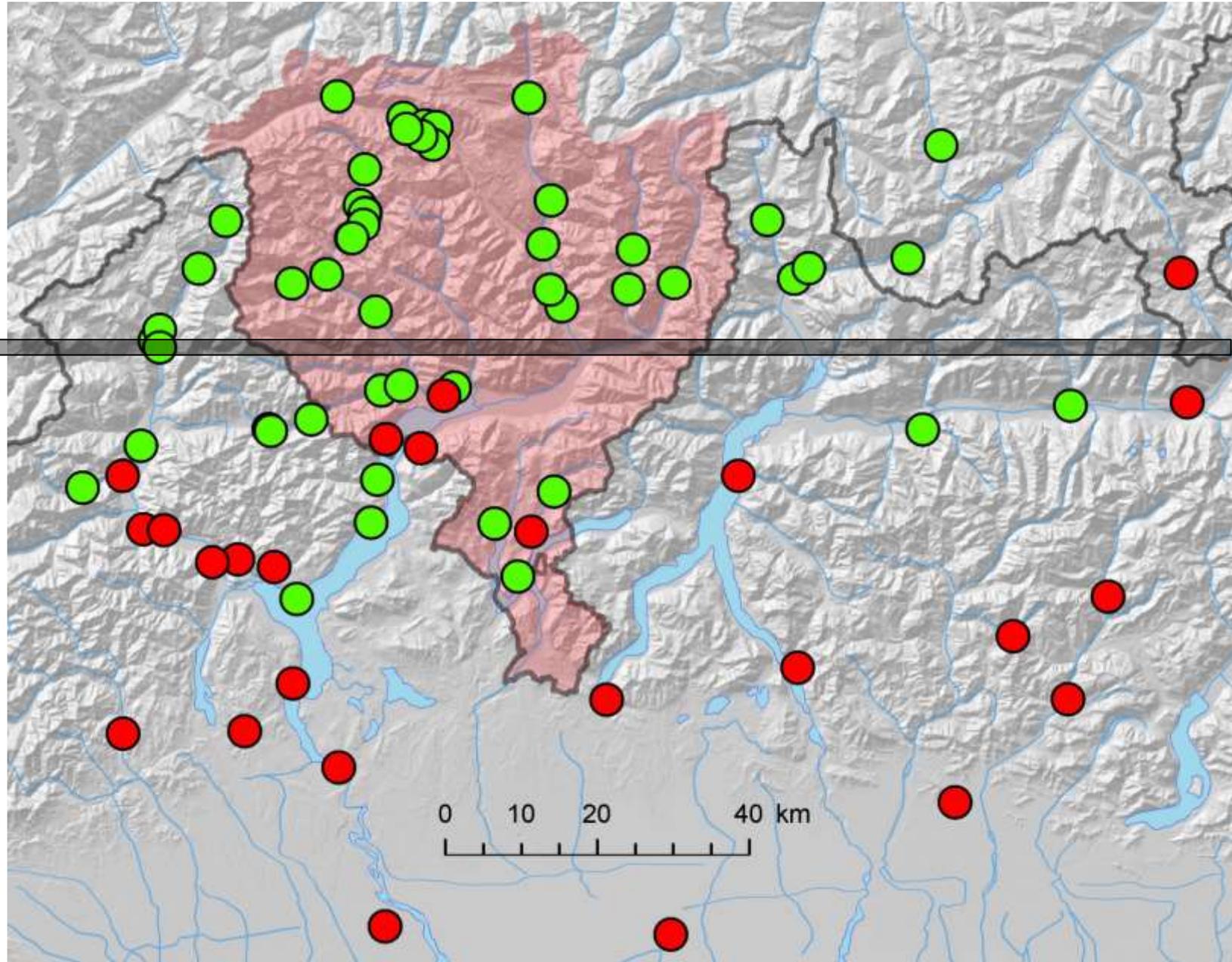
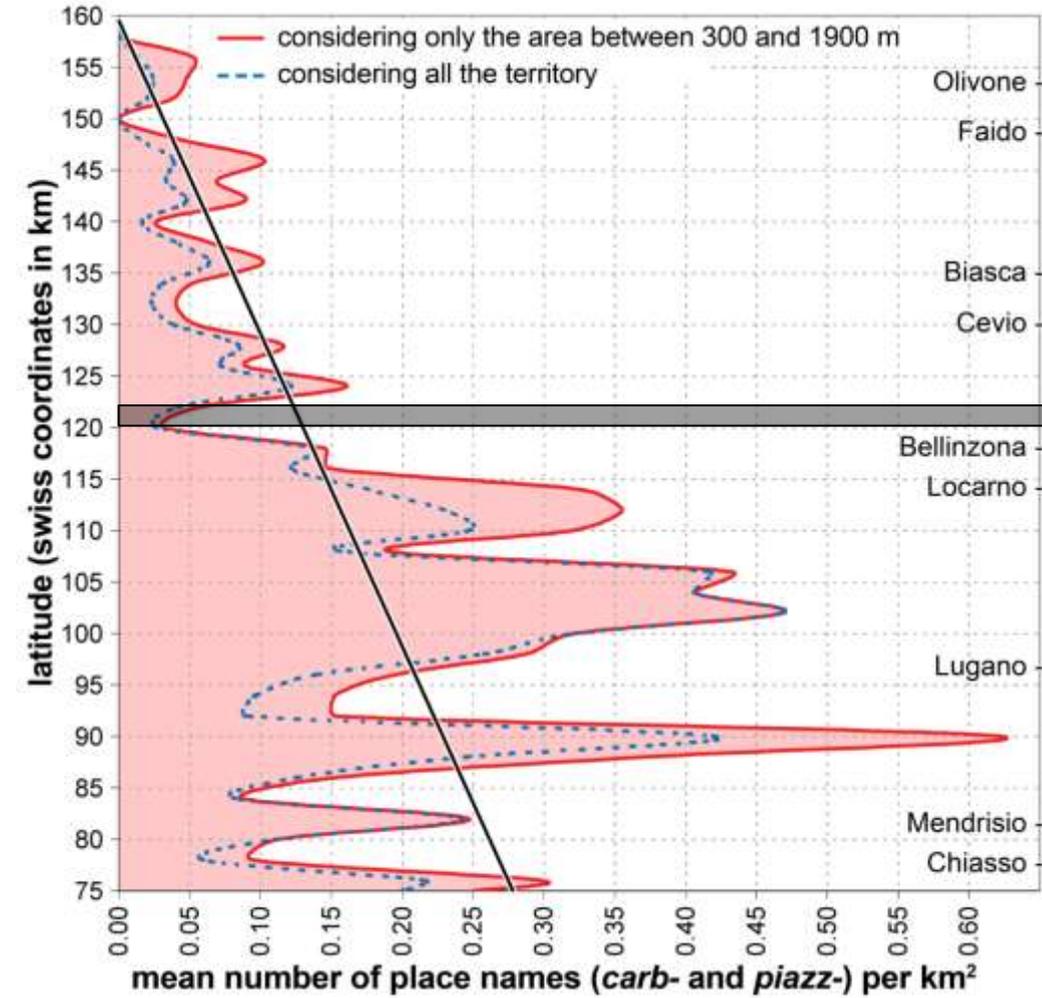


Latitudinal distribution: overall frequency



131 ● *carb-*
158 ● *piazz-*

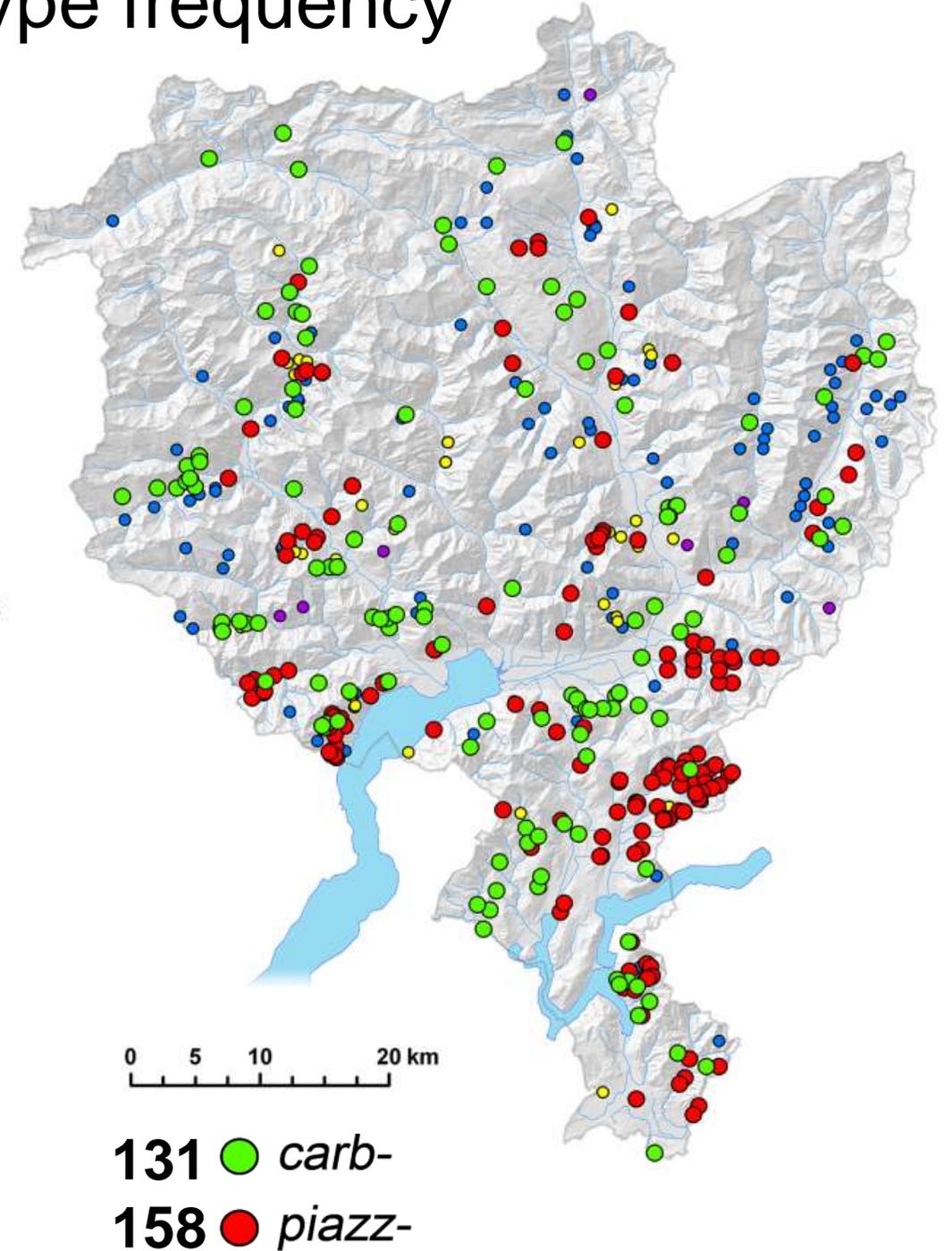
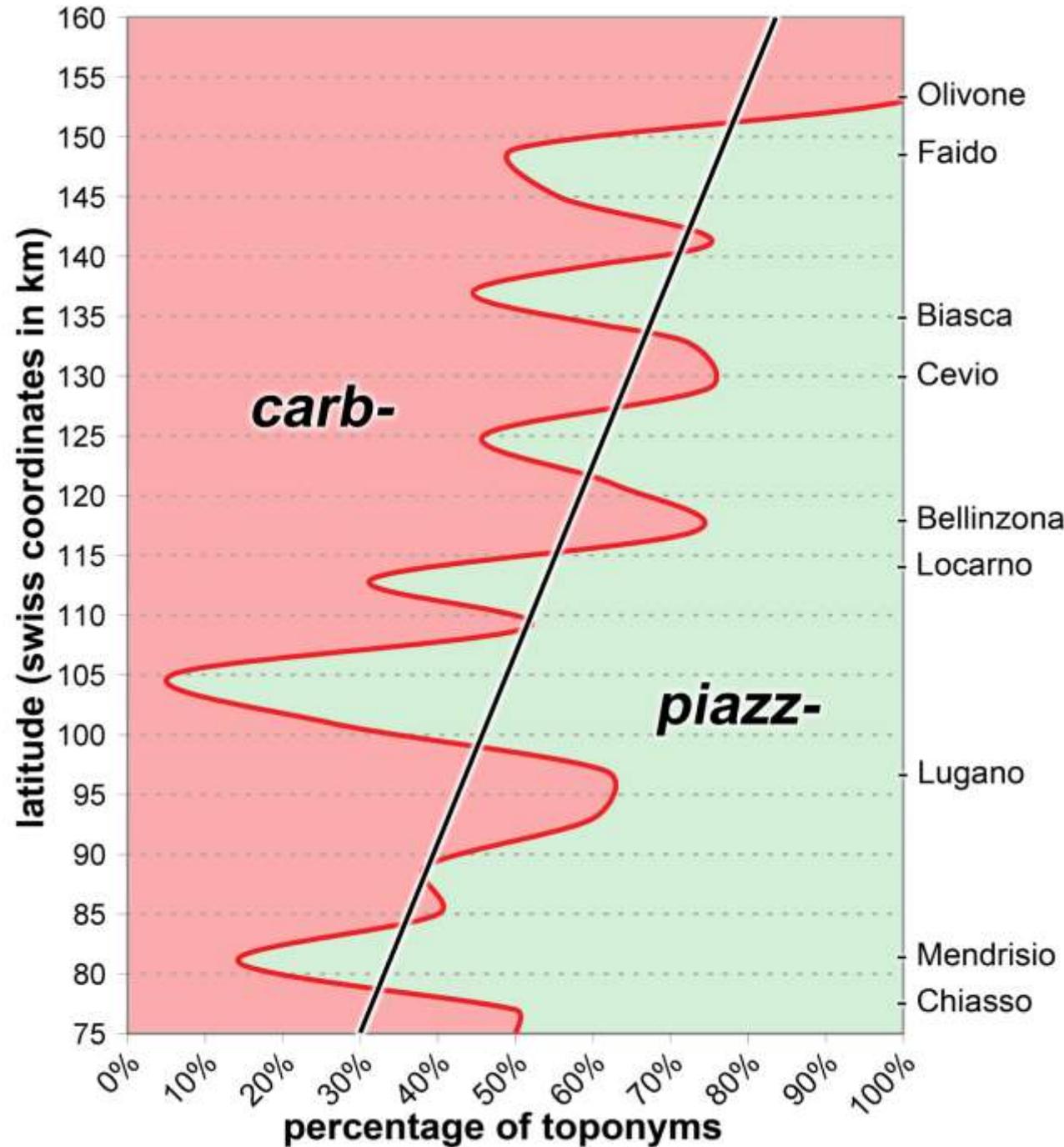
Latitudinal distribution of place names



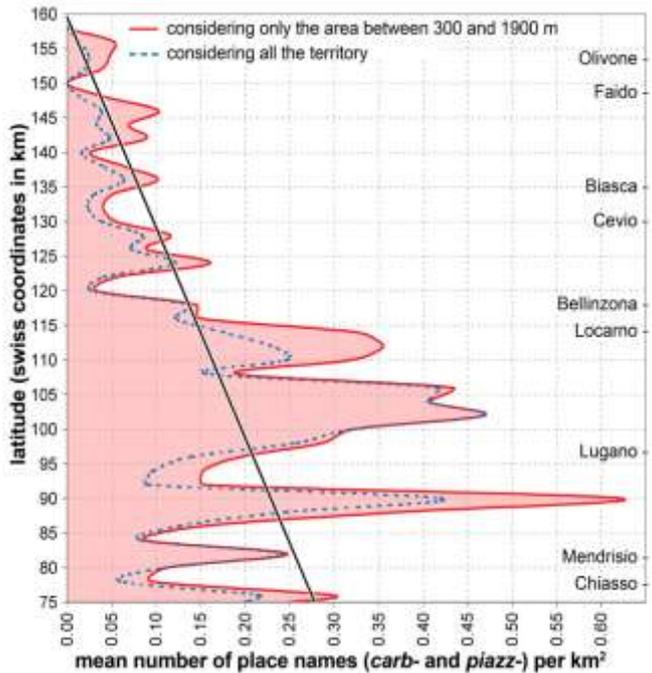
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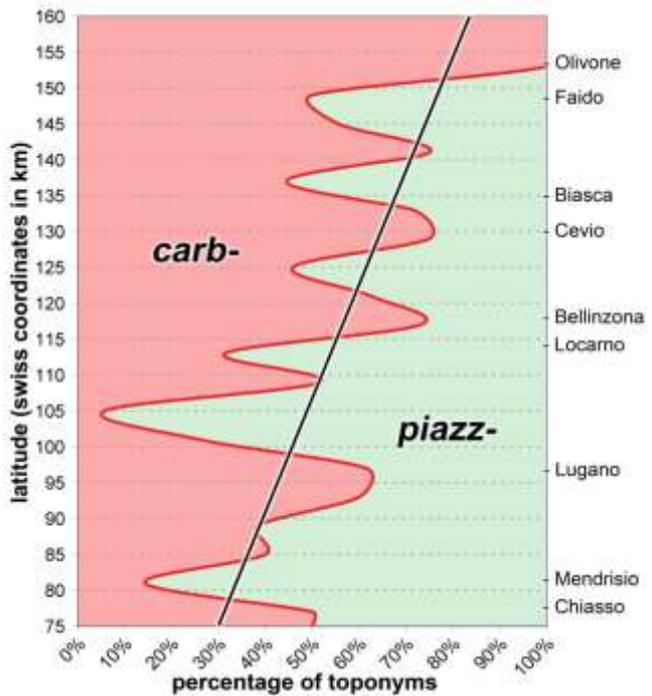
Latitudinal distribution: dominant type frequency



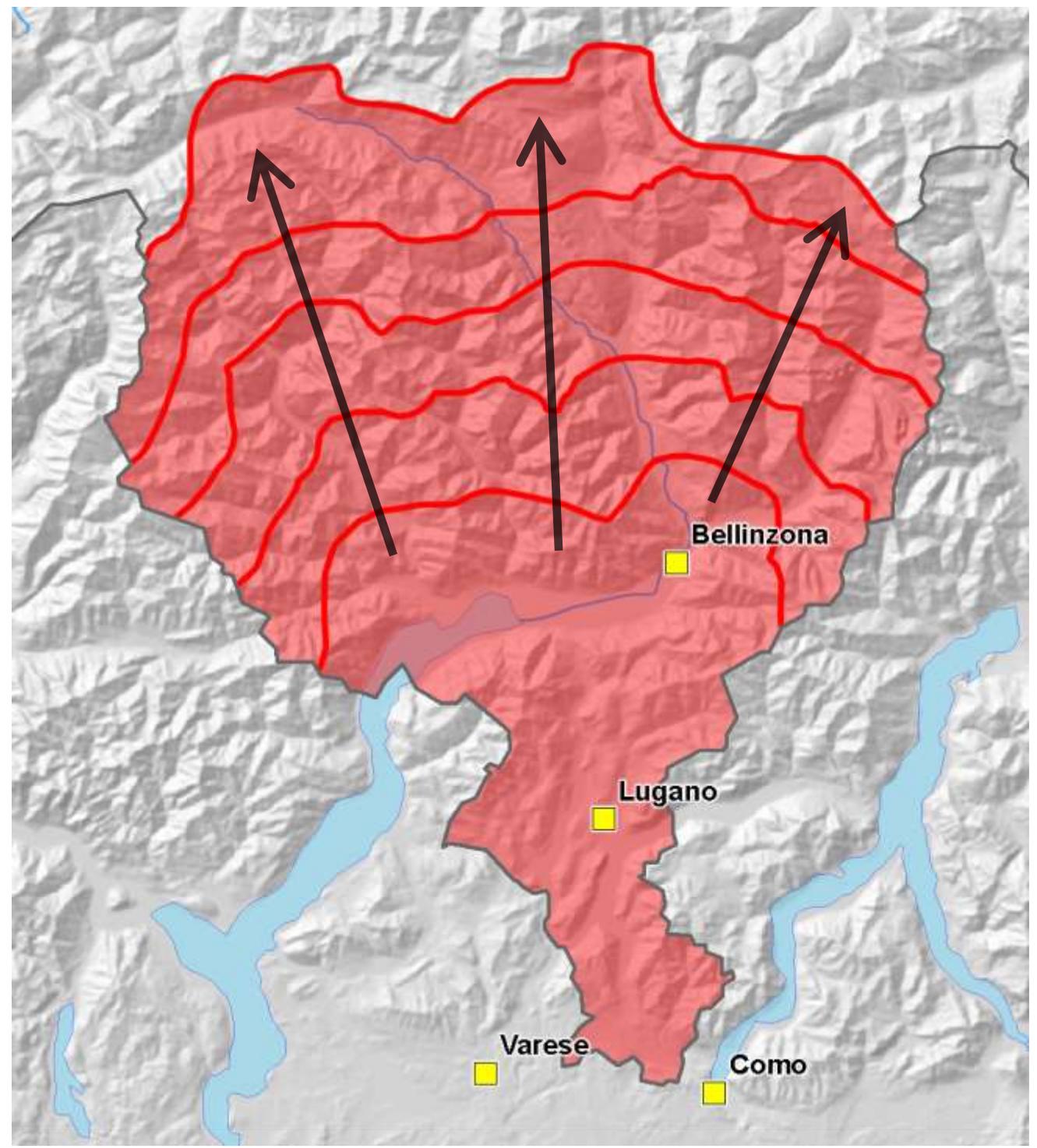
latitudinal distribution by number



latitudinal distribution by type



confirmation

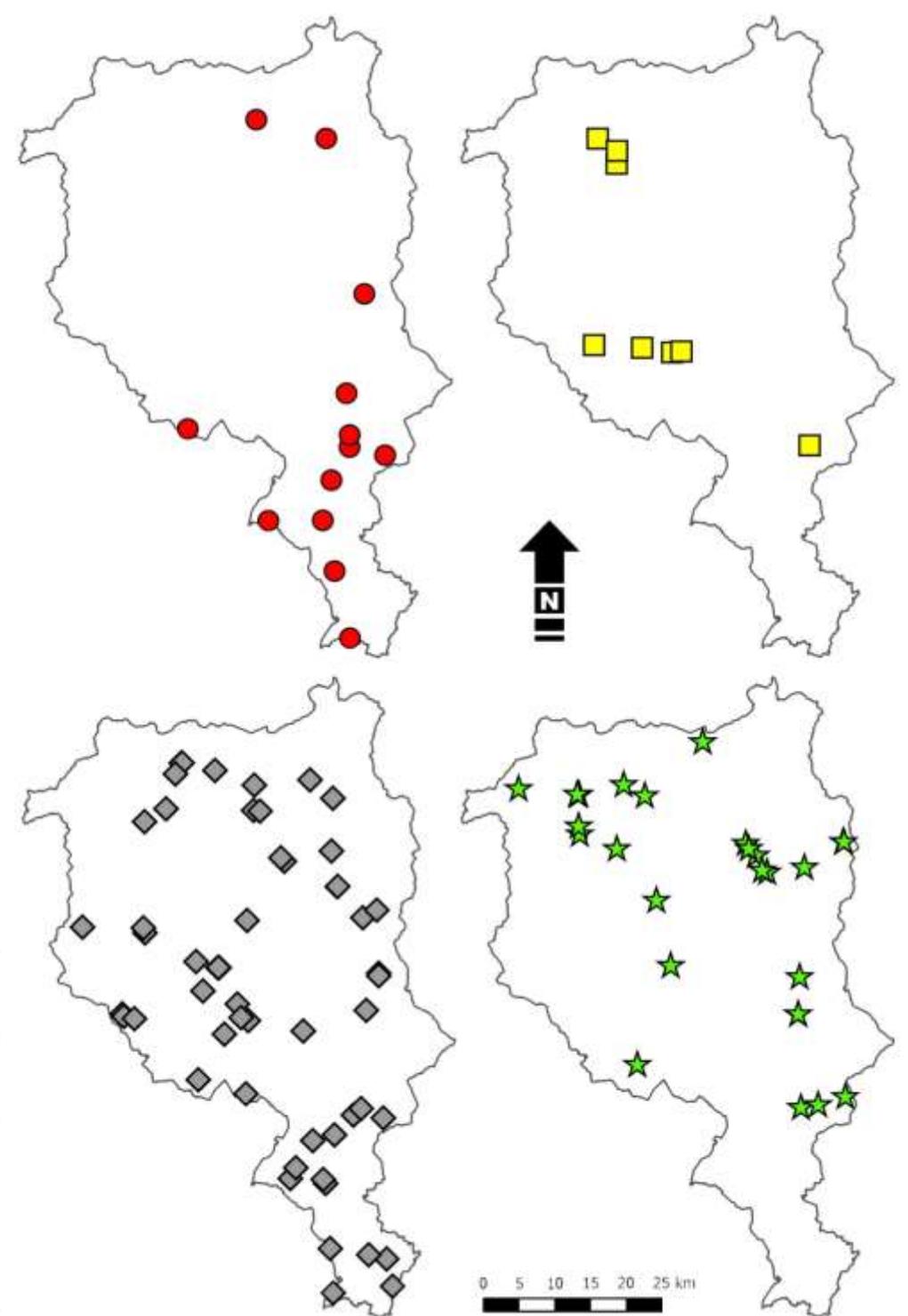
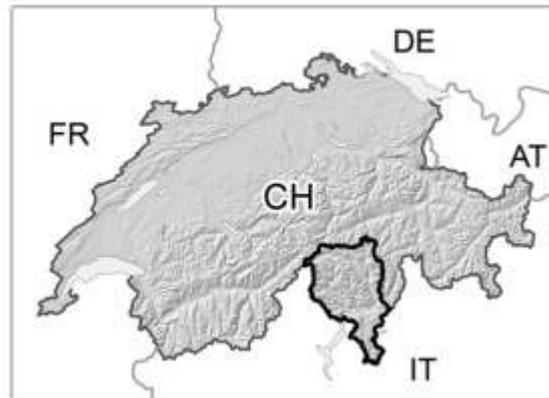


Place names containing “*brüsáda*”

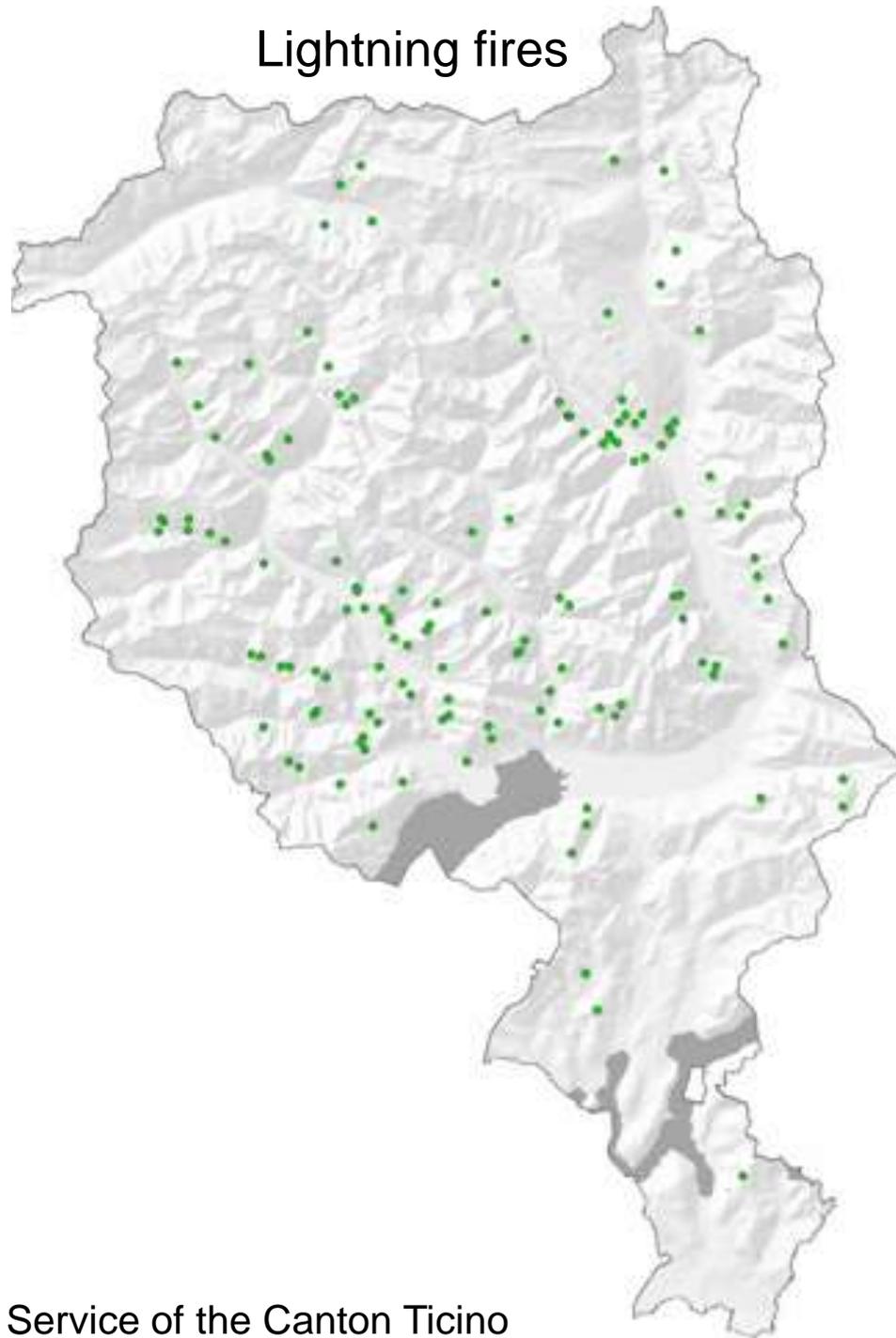
i.e. the burn, the place where fire or heat has hurt or damaged something

Legend

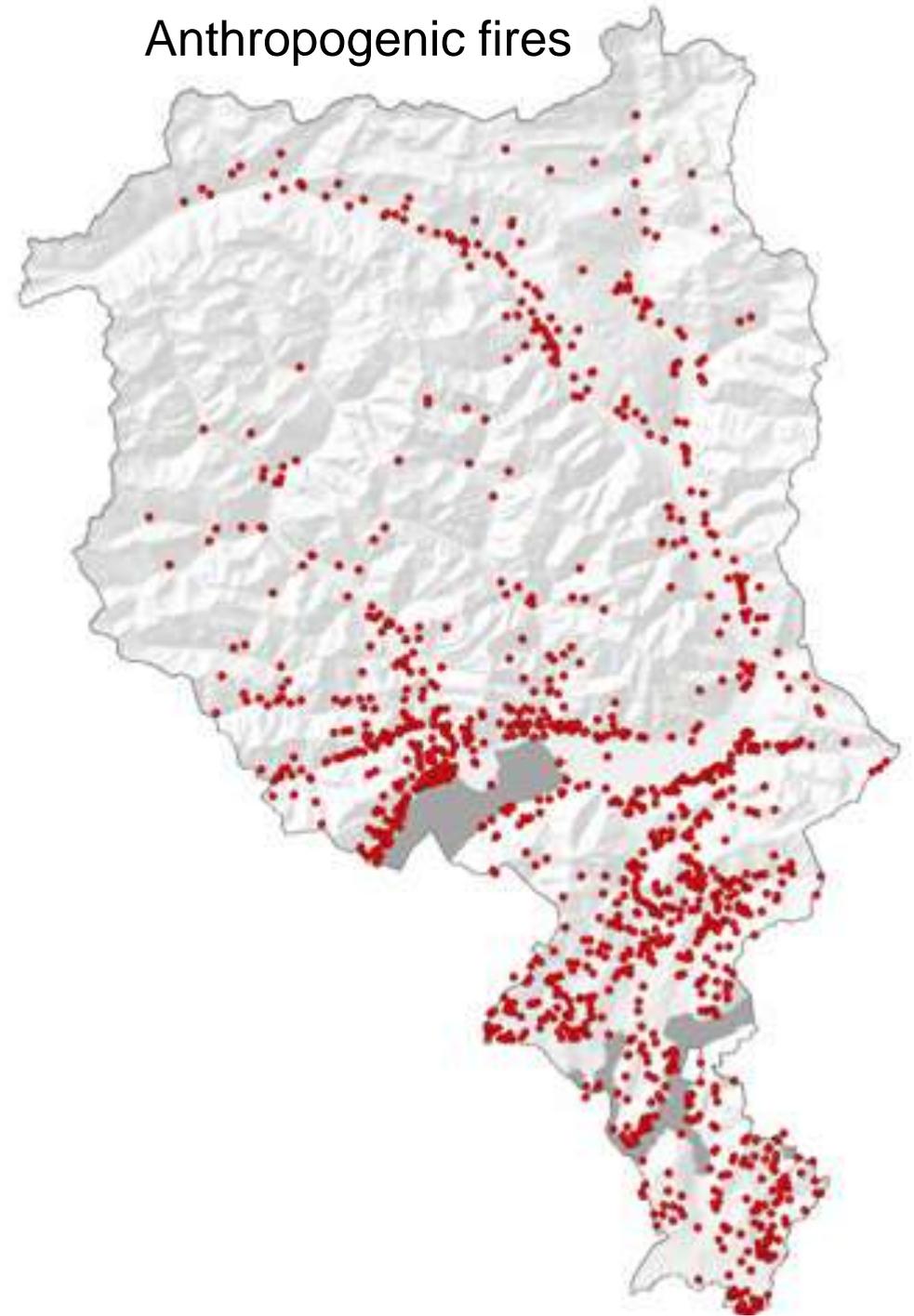
- building
- exposed
- ◆ generic
- ★ pasture



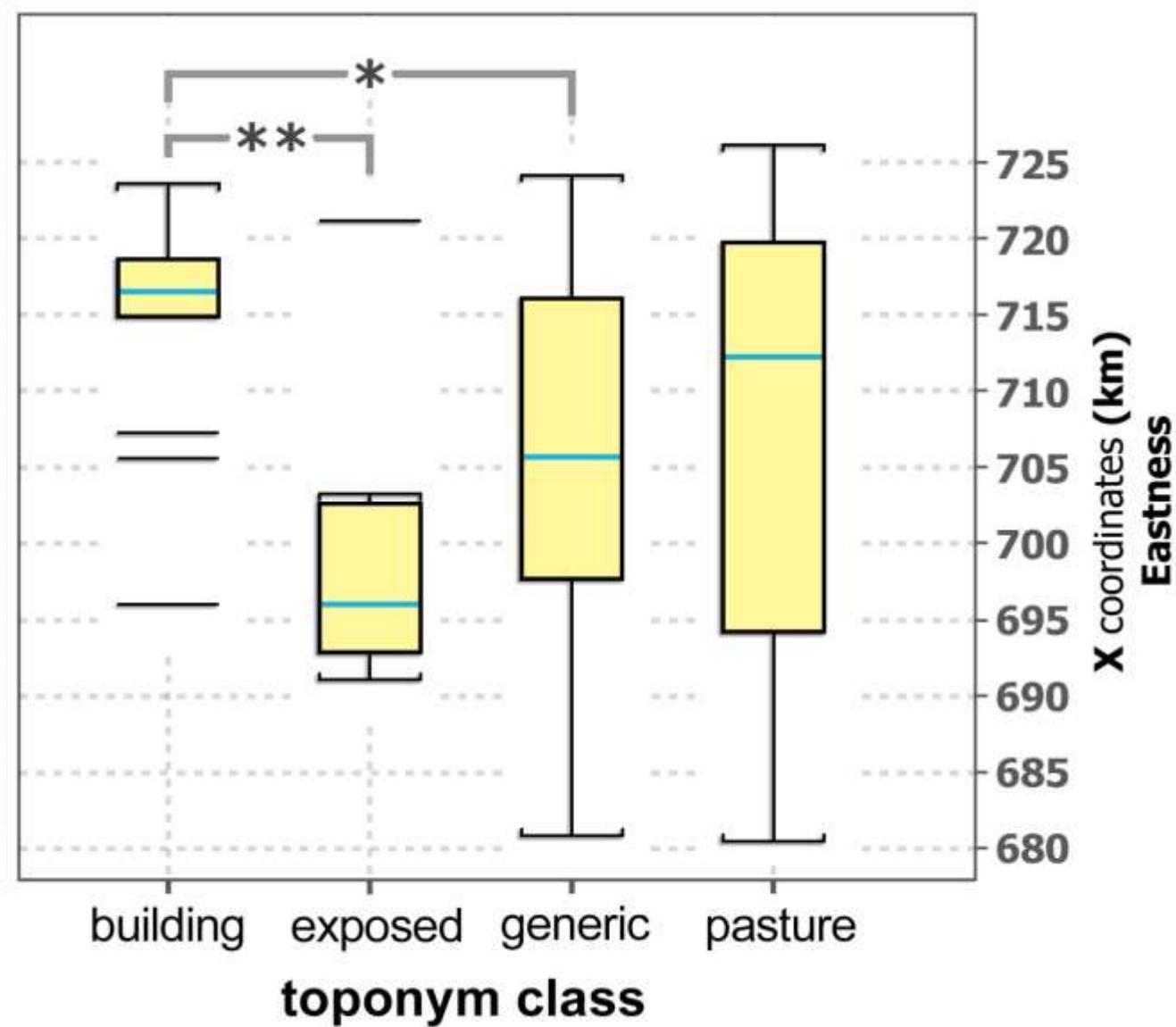
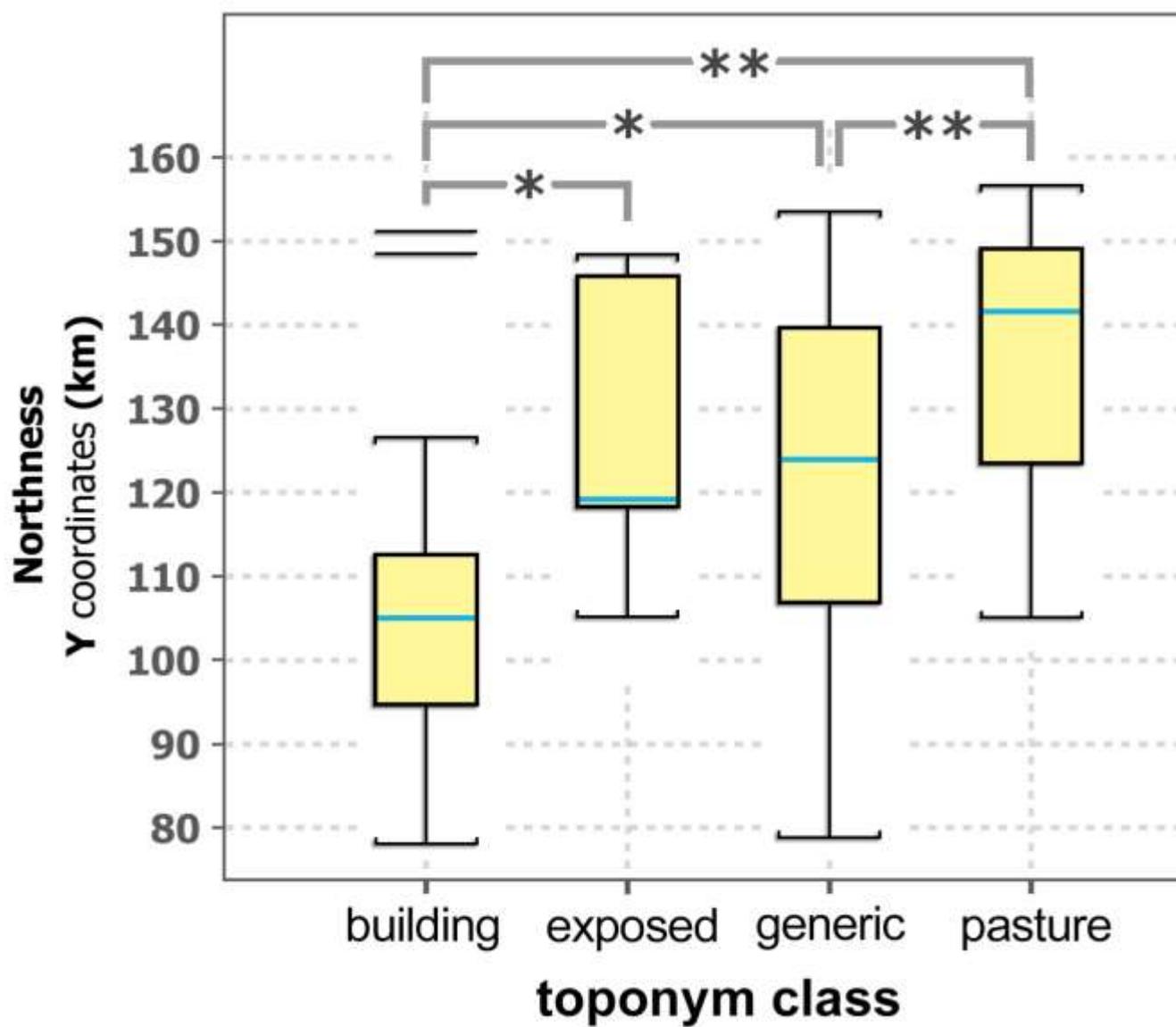
Lightning fires

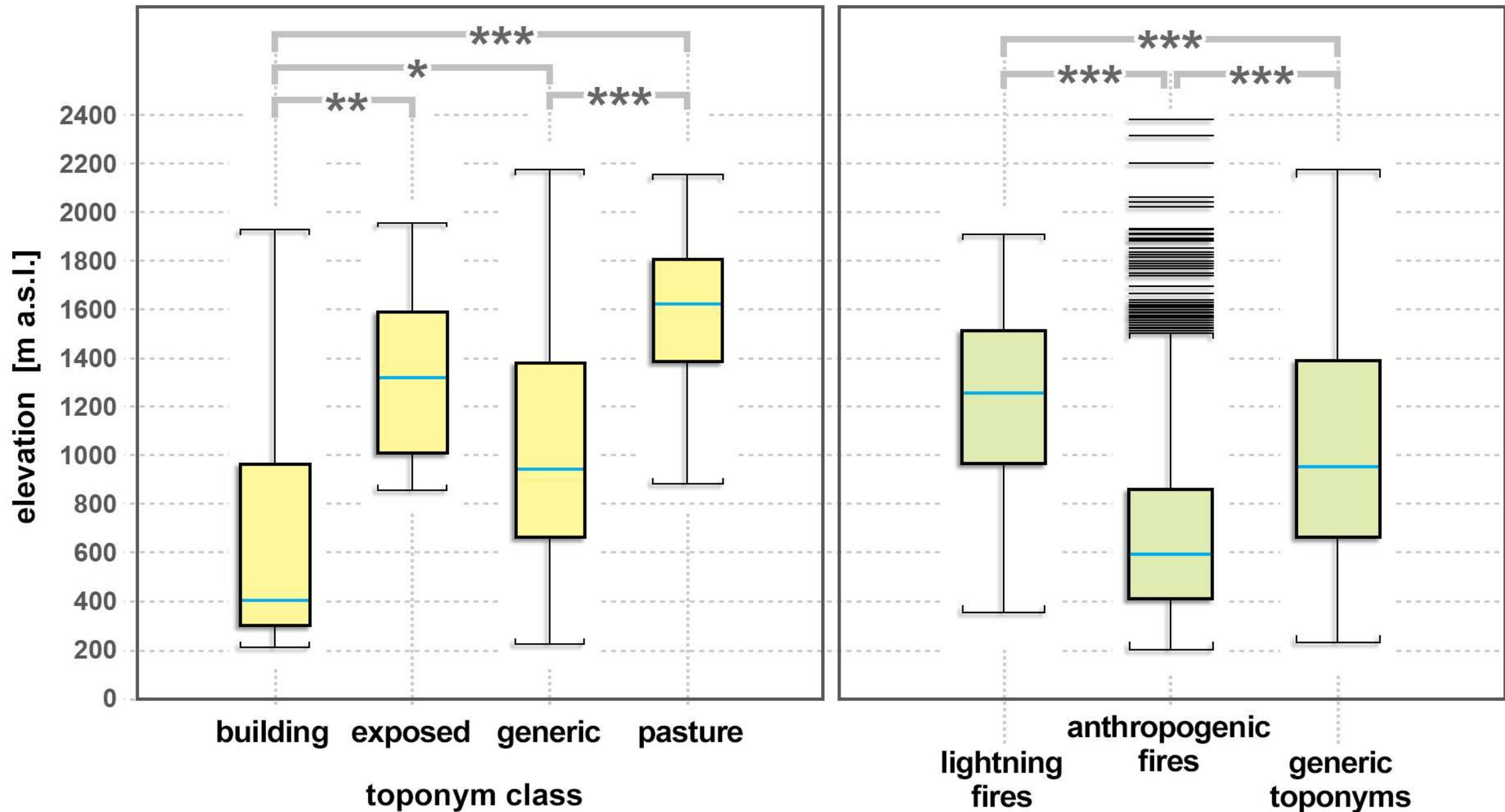


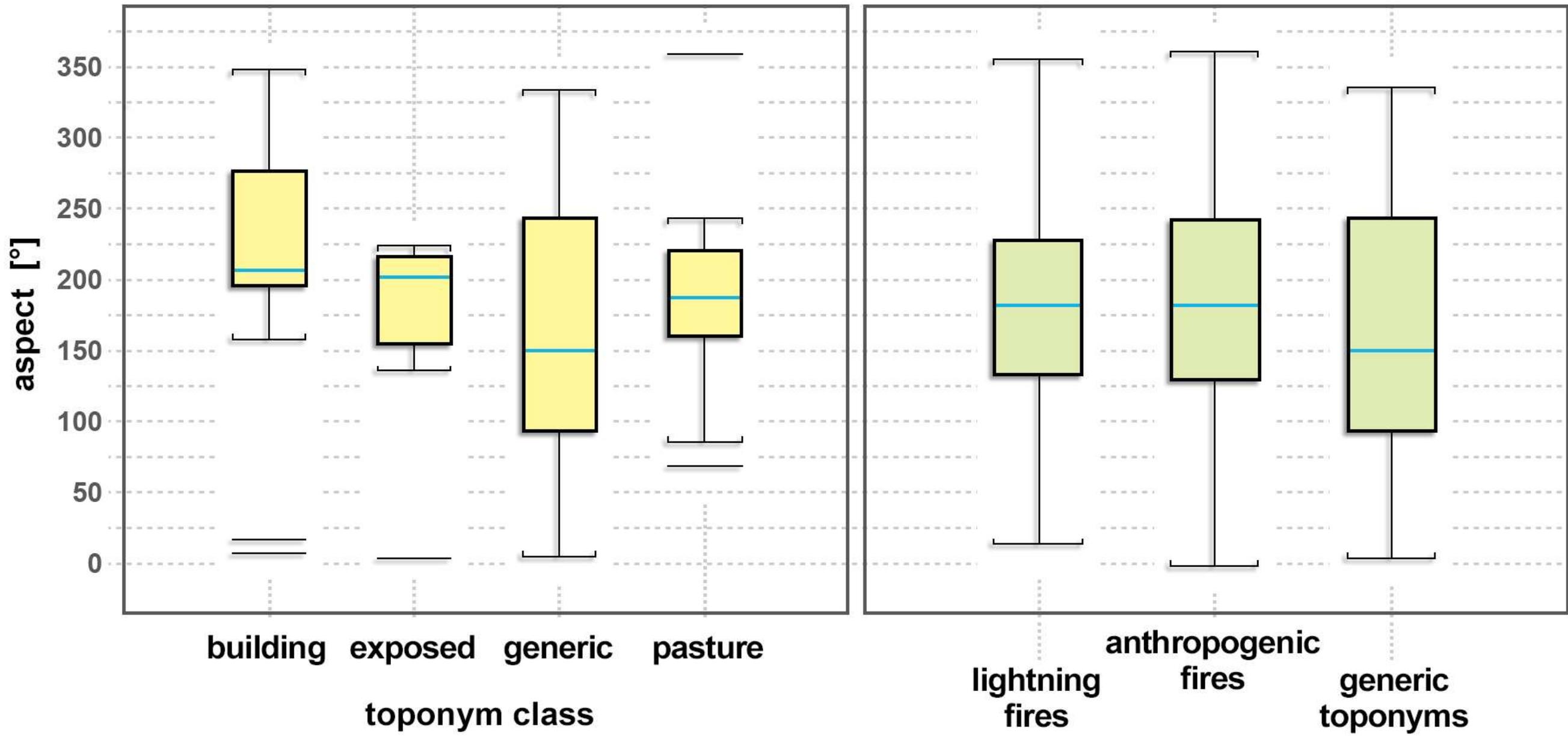
Anthropogenic fires

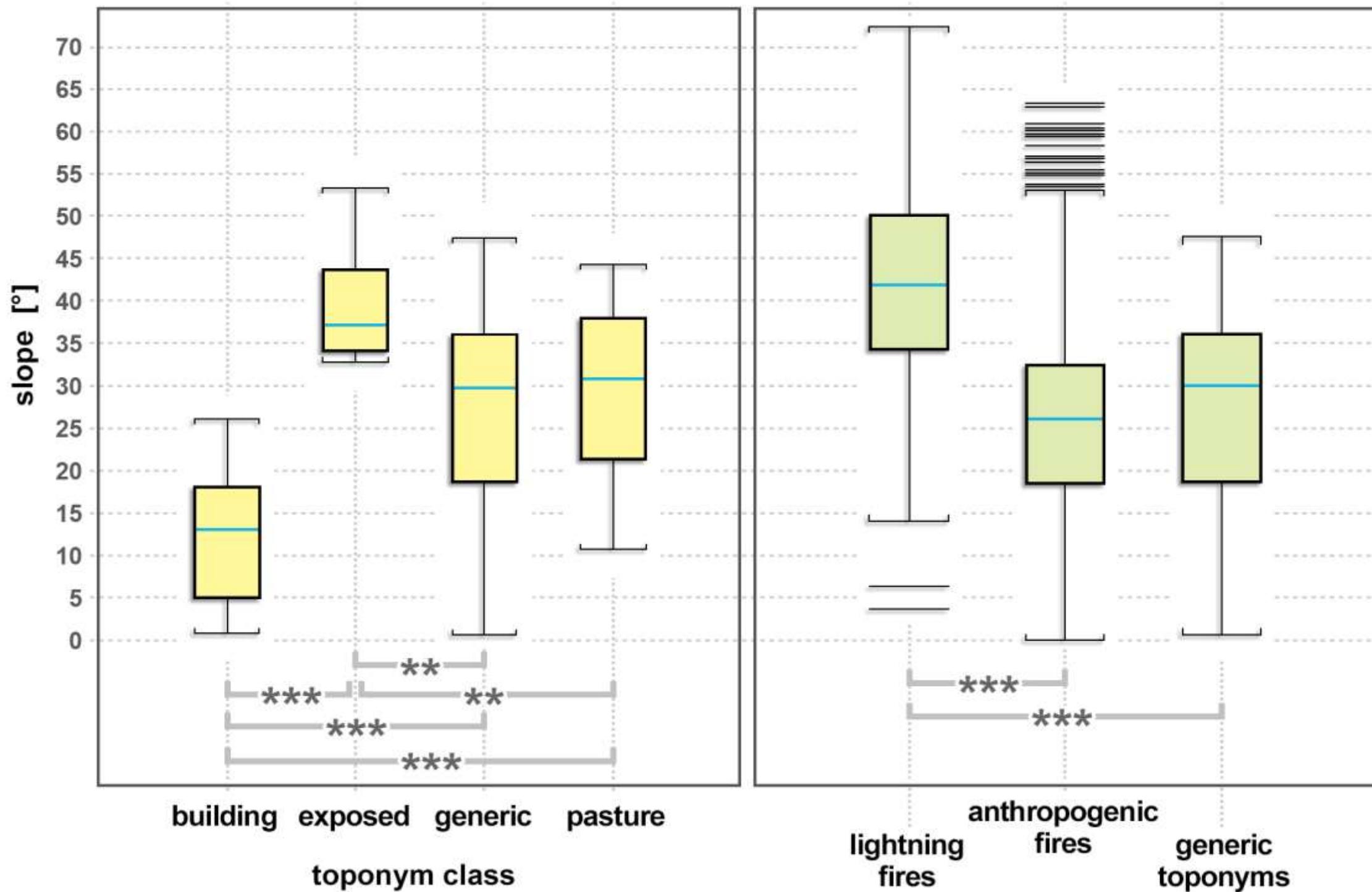


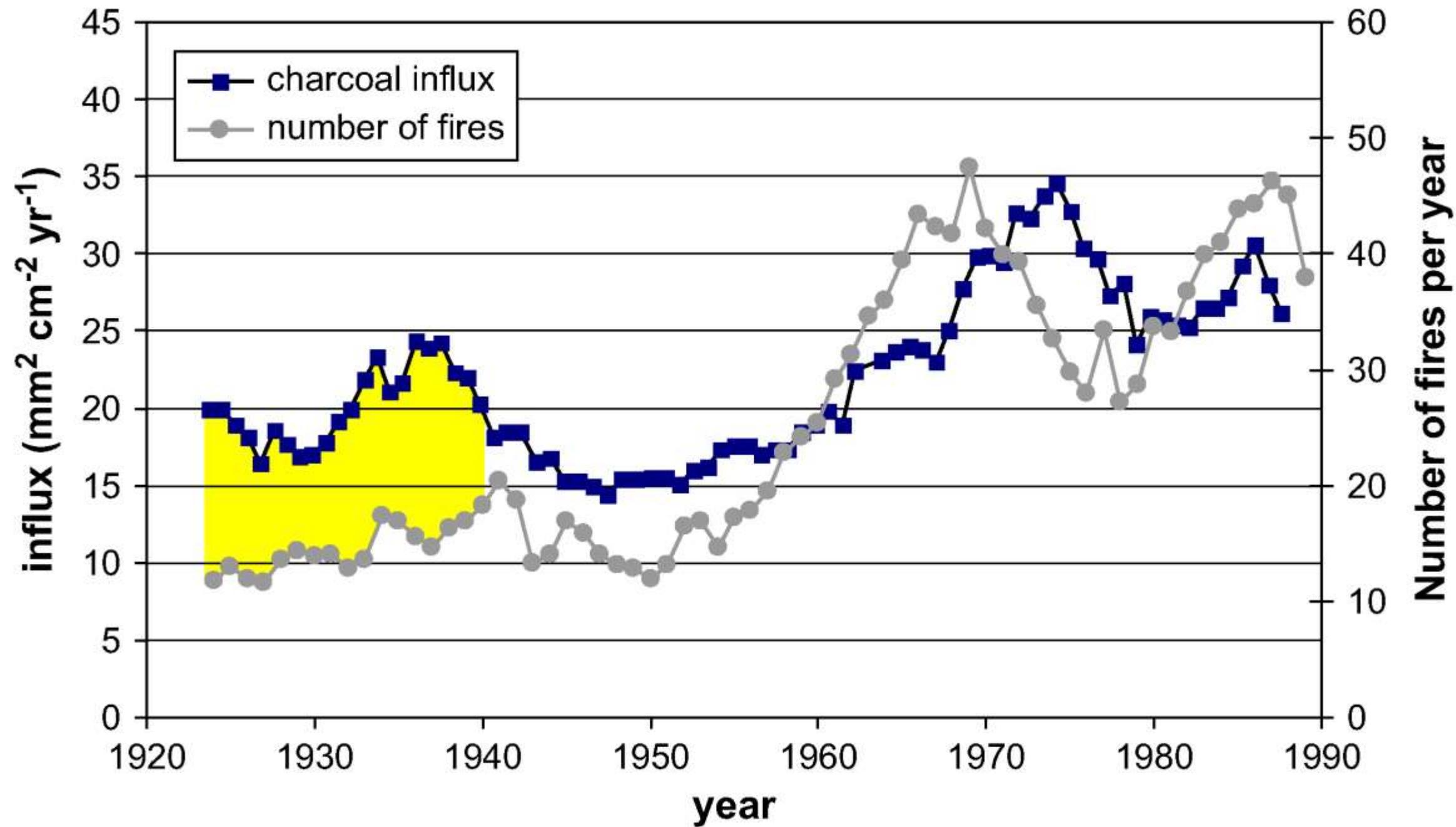
Source: Fire database
WSL bellinzona & Forest Service of the Canton Ticino

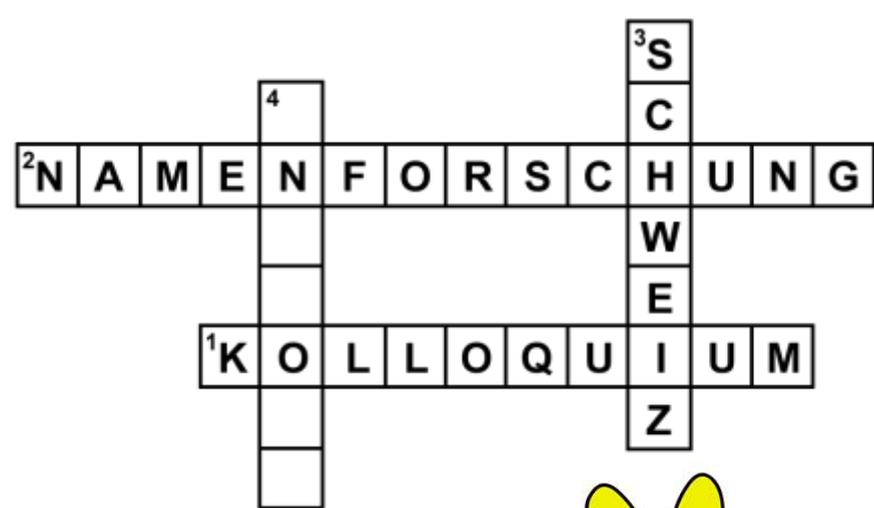












Thanks for your attention !!

e-mail: patrik.krebs@wsl.ch

web page: <http://www.wsl.ch/standorte/bellinzona>

