



Neophytes in the forests in Grisons



Ascona, 03.11.2016

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Kudzu, *Pueraria lobata*, San Vittore



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1. Most abundant species in Grisons

de fr **Carnet néophytes** V2016-05-11 lore.schmid Logout

Formulaire Observations Bilan **Filtre**

Switzerland:
database «Infoflora» (online GIS-server)
→ all observations recorded

<input type="checkbox"/>	Néophytes	Nom latin
<input type="checkbox"/>	Abutilon de Théophraste	Abutilon theophrasti Desf.
<input type="checkbox"/>	Mimosa blanchâtre	Acacia dealbata Link.
<input type="checkbox"/>	Ailante	Ailanthus altissima (Mill.) Swingle
<input type="checkbox"/>	Ambrosie à feuilles d'armoise	Ambrosia artemisiifolia L.
<input type="checkbox"/>	Amorphe buissonnante	Amorpha fruticosa L.
<input type="checkbox"/>	Armoise des frères Verlot	Artemisia verlotii (M. B.) M. B.
<input type="checkbox"/>	Asclépiade de Syrie	Asclepias syriaca L.
<input type="checkbox"/>	Aster de la Nouvelle-Belgique	Aster novi-belgii aggr.
<input type="checkbox"/>	Bassie à balais	Bassia scorpiaria L.
<input type="checkbox"/>	Buddleia de David	Buddleja davidii Franch.
<input type="checkbox"/>	Bunias d'Orient	Bunias orientalis L.
<input type="checkbox"/>	Cabomba de Caroline	Cabomba caroliniana A. Gray
<input type="checkbox"/>	Cornouiller soyeux	Cornus sericea L.
<input type="checkbox"/>	Crassule de Helms	Crassula helmsii (Kirk) Cockayne
<input type="checkbox"/>	Souchet comestible	Cyperus esculentus L.
<input type="checkbox"/>	Échinocyste lobé	Echinocystis lobata (Michx.) Torr. & A. Gray
<input type="checkbox"/>	Elodée du Canada	Elodea canadensis Michx.
<input type="checkbox"/>	Elodée de Nuttall	Elodea nuttallii (Planch.) H. St. John
<input type="checkbox"/>	Vergerette annuelle	Erigeron annuus (L.) Desf. s.l.
<input type="checkbox"/>	Vergerette annuelle	Erigeron annuus (L.) Desf. s.str.
<input type="checkbox"/>	Vergerette septentrionale	Erigeron annuus subsp. septentrionalis (Fernald & ...)
<input type="checkbox"/>	Vergerette maigre	Erigeron annuus subsp. strigosus (Willd.) Wagenitz
<input type="checkbox"/>	Galéga officinal	Galega officinalis L.
<input type="checkbox"/>	Hélianthe à dix pétales	Helianthus decapetalus L.
<input type="checkbox"/>	Hélianthe géant	Helianthus giganteus L.
<input type="checkbox"/>	Hélianthe multiflore	Helianthus multiflorus L.
<input type="checkbox"/>	Topinambour	Helianthus tuberosus L.
<input type="checkbox"/>	Topinambour	Helianthus tuberosus L. [s.str. prov.]
<input type="checkbox"/>	Berce du Caucase	Heracleum mantegazzianum Sommier & Levier
<input type="checkbox"/>	Hydrocotyle à feuilles de renoncule	Hydrocotyle ranunculoides L. f.
<input type="checkbox"/>	Impatiante de Balfour	Impatiens balfourii Hook. f.
<input type="checkbox"/>	Impatiante glanduleuse	Impatiens glandulifera Royle
<input type="checkbox"/>	Chèvrefeuille de Henry	Lonicera henryi Hemsl.

Carte

Obs Pas d'observation à cette échelle Recherche d'un lieu: saisir un nom de lieu ou de commune Fond de carte

50 km
20 m

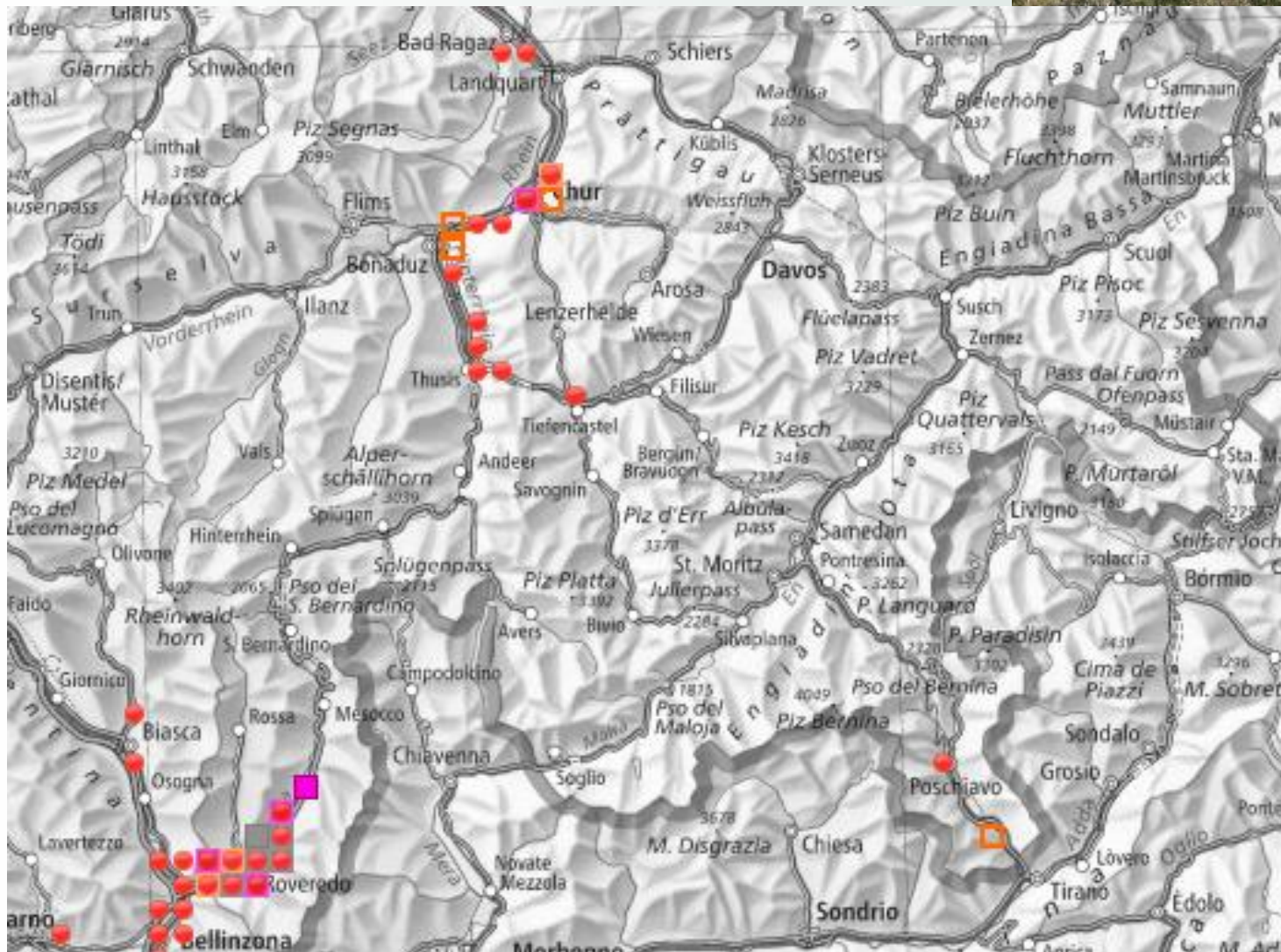
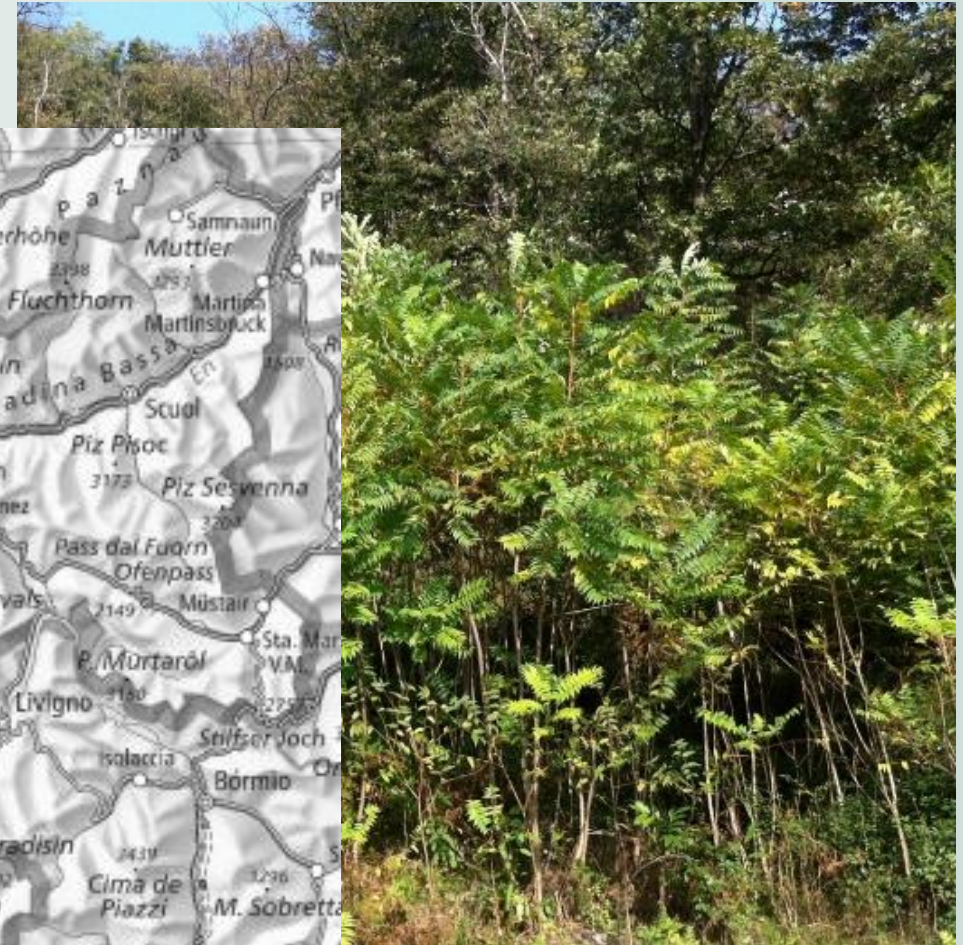
X: 634250 Y: -7750

● Observation négative ● Observation positive ● Traitement ● Monitoring

<https://obs.infoflora.ch/app/neophytes/de/index.html>



Ailanthus altissima



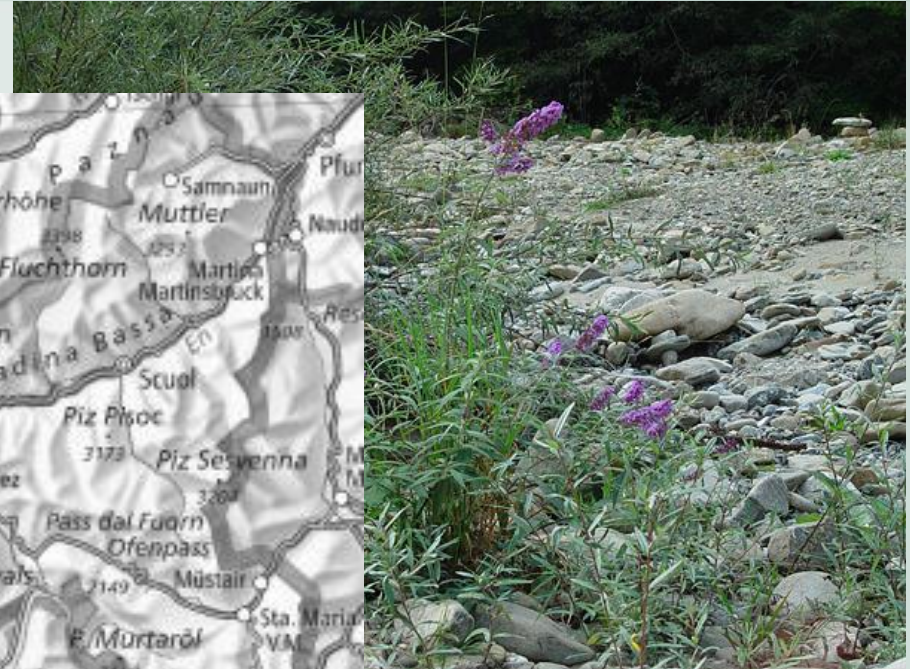
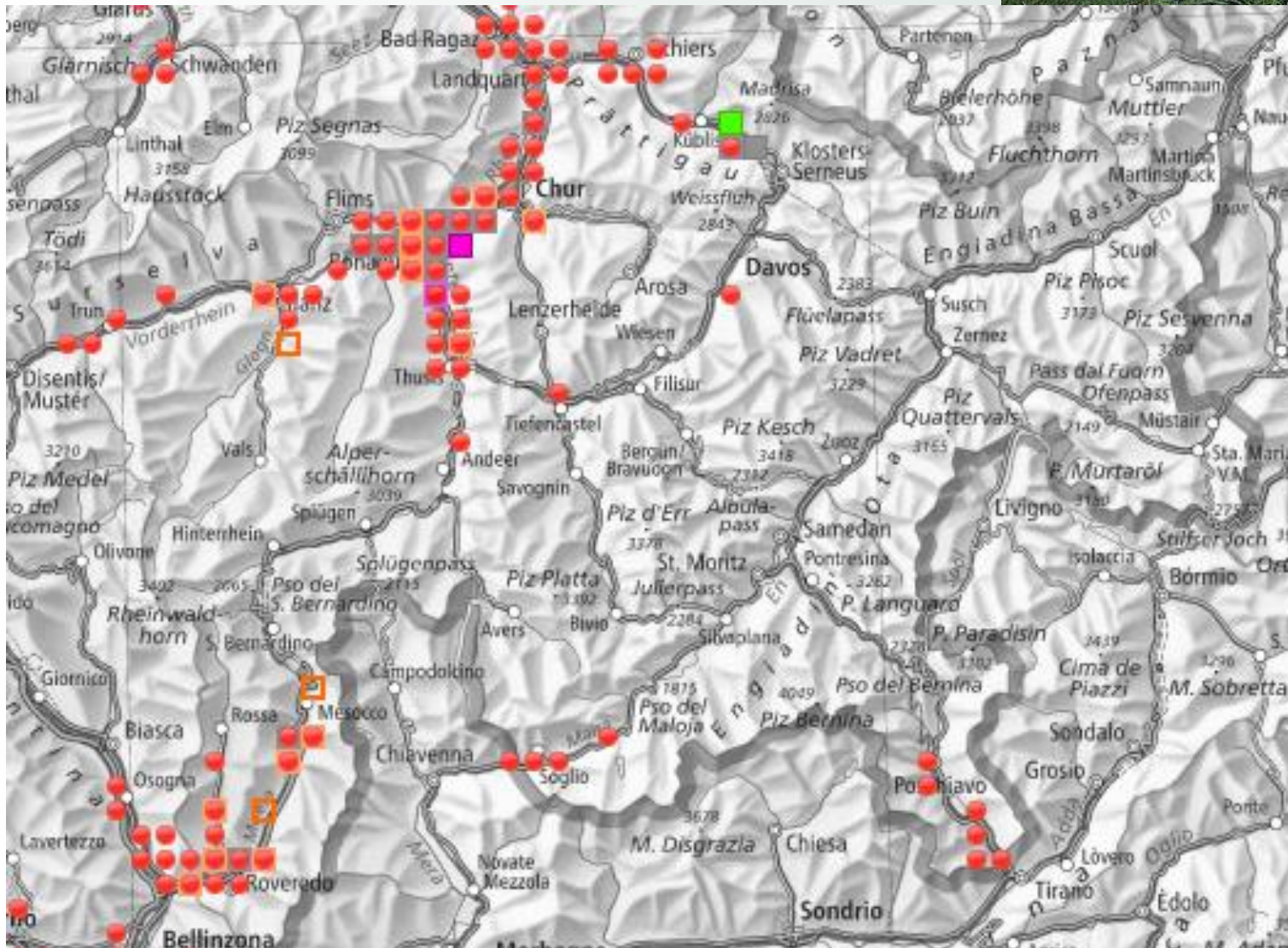
- Large populations in the south of the Alps
- Present in cut areas

Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Buddleja davidii



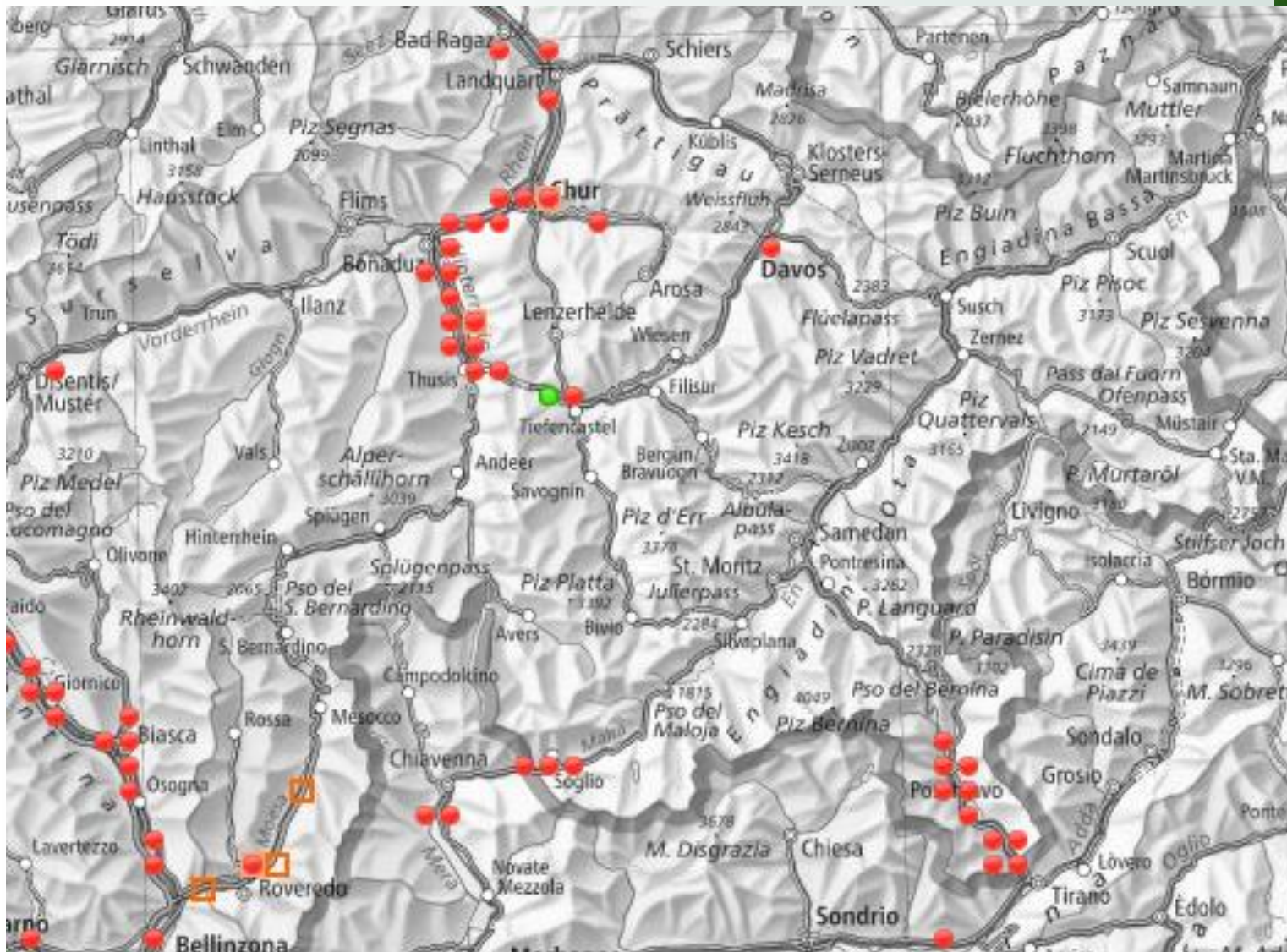
- Large populations in the south of the Alps, Val Poschiavo, Rhine valley
- Present in cut areas

Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Robinia pseudoacacia



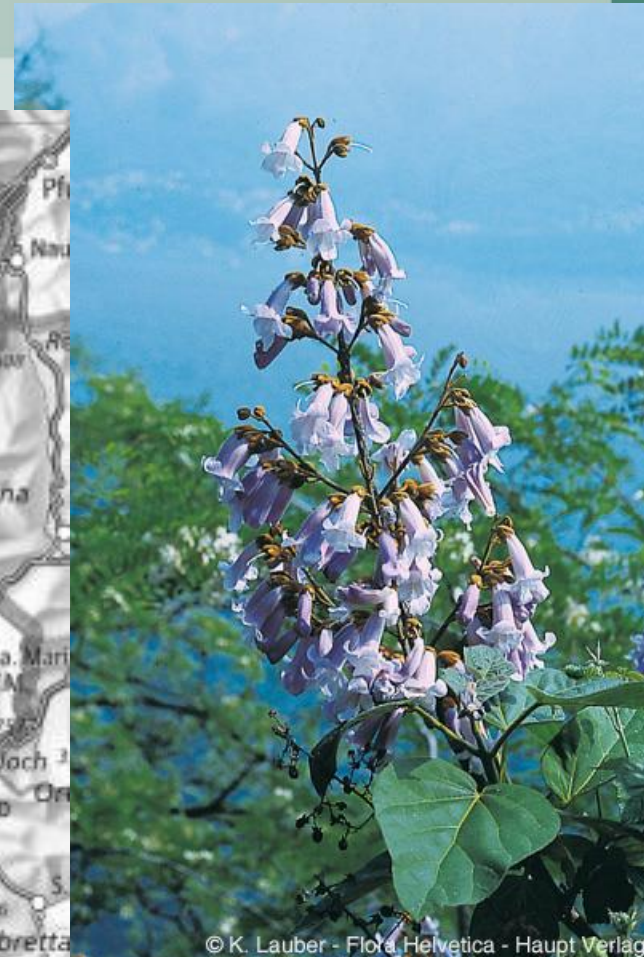
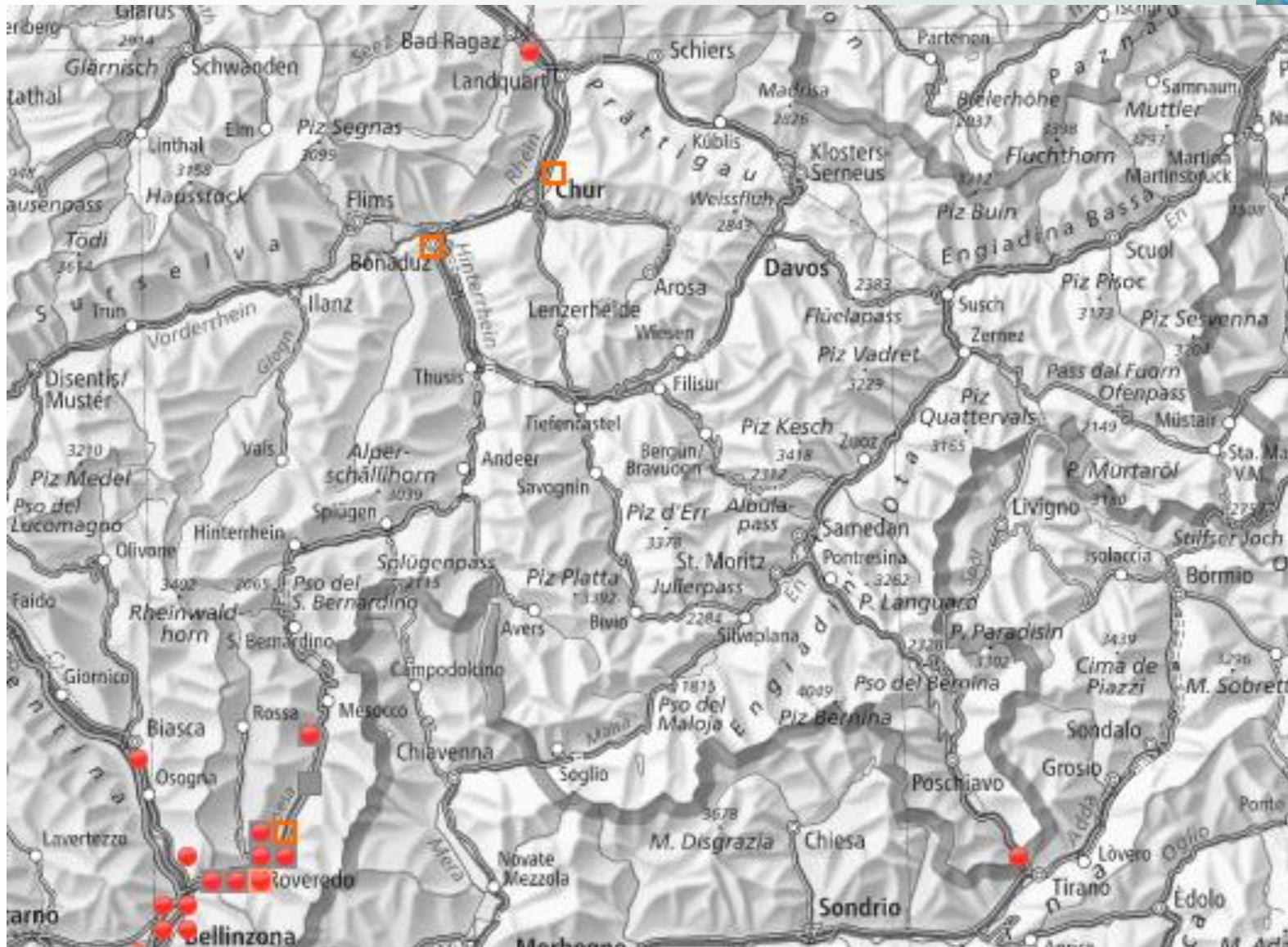
- Often present in forests of the colline level
- «Naturalized»?
- Data not complete

Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Paulownia tomentosa



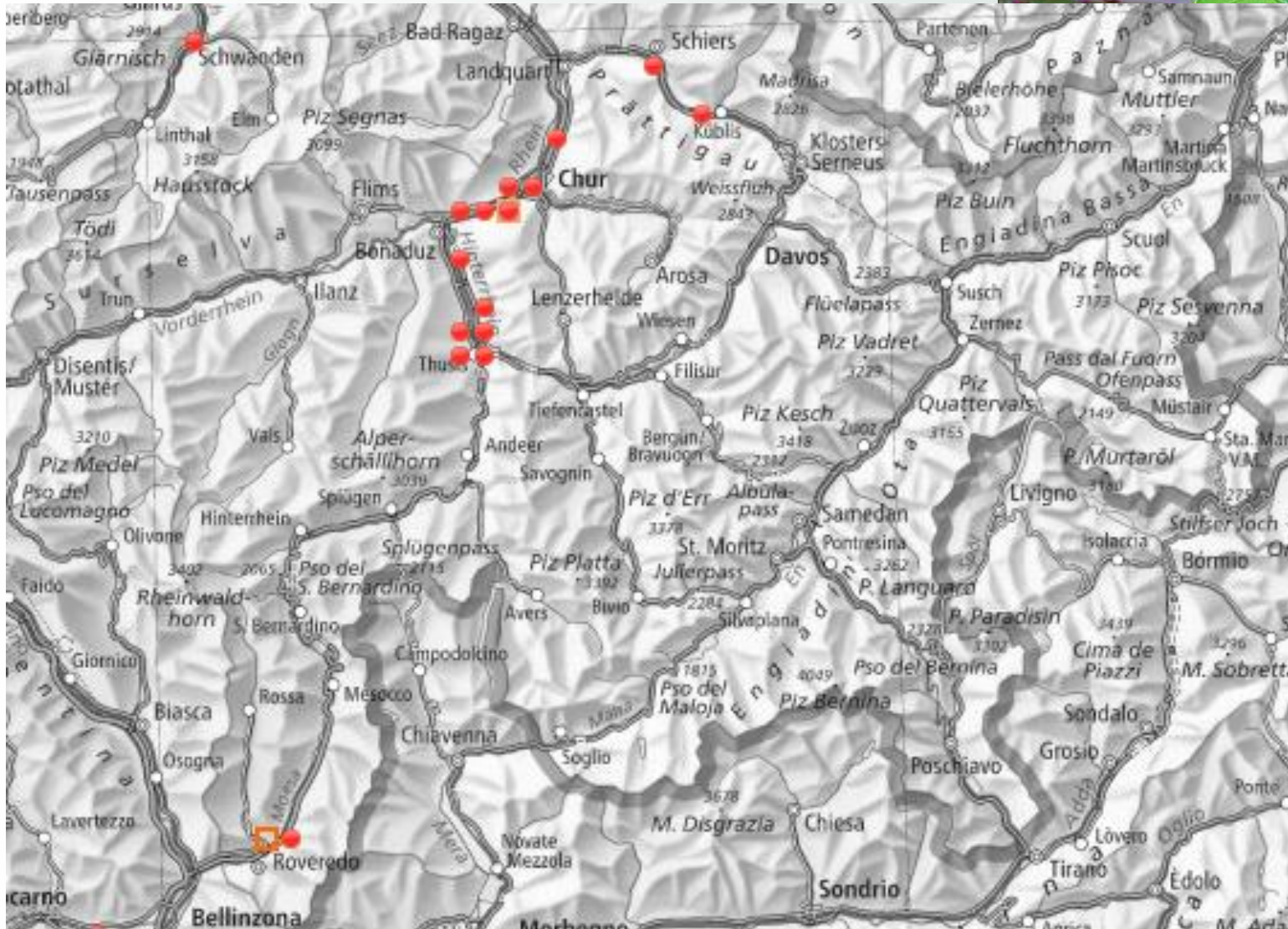
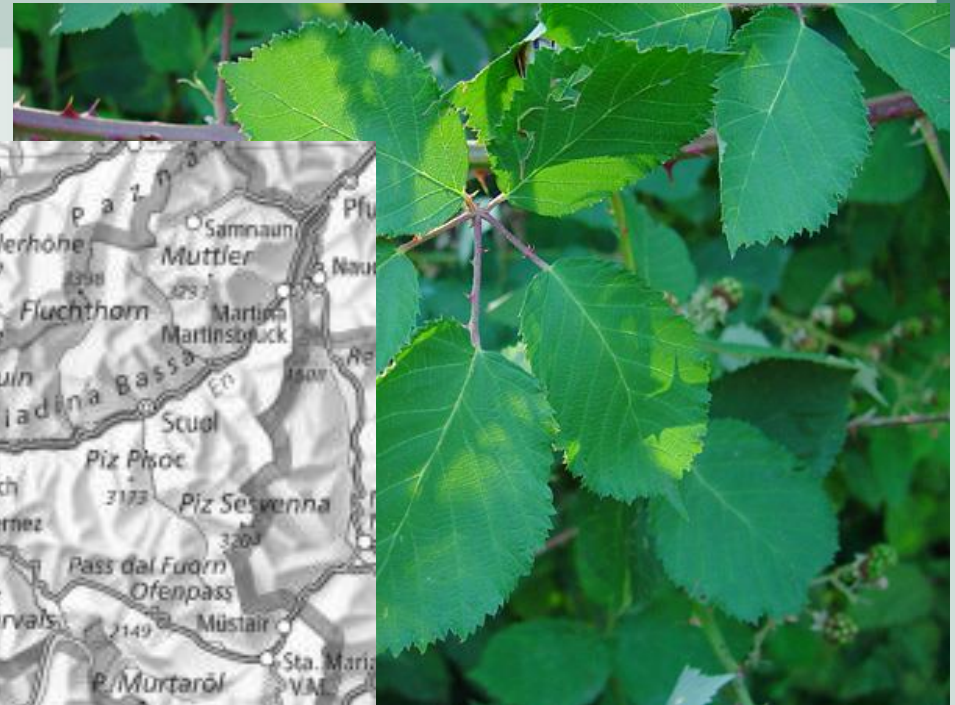
- **South of the Alps: widespread with single individuals (up to 900-1'000 m a.s.l.)**
- **Data not complete**

Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Rubus armeniacus



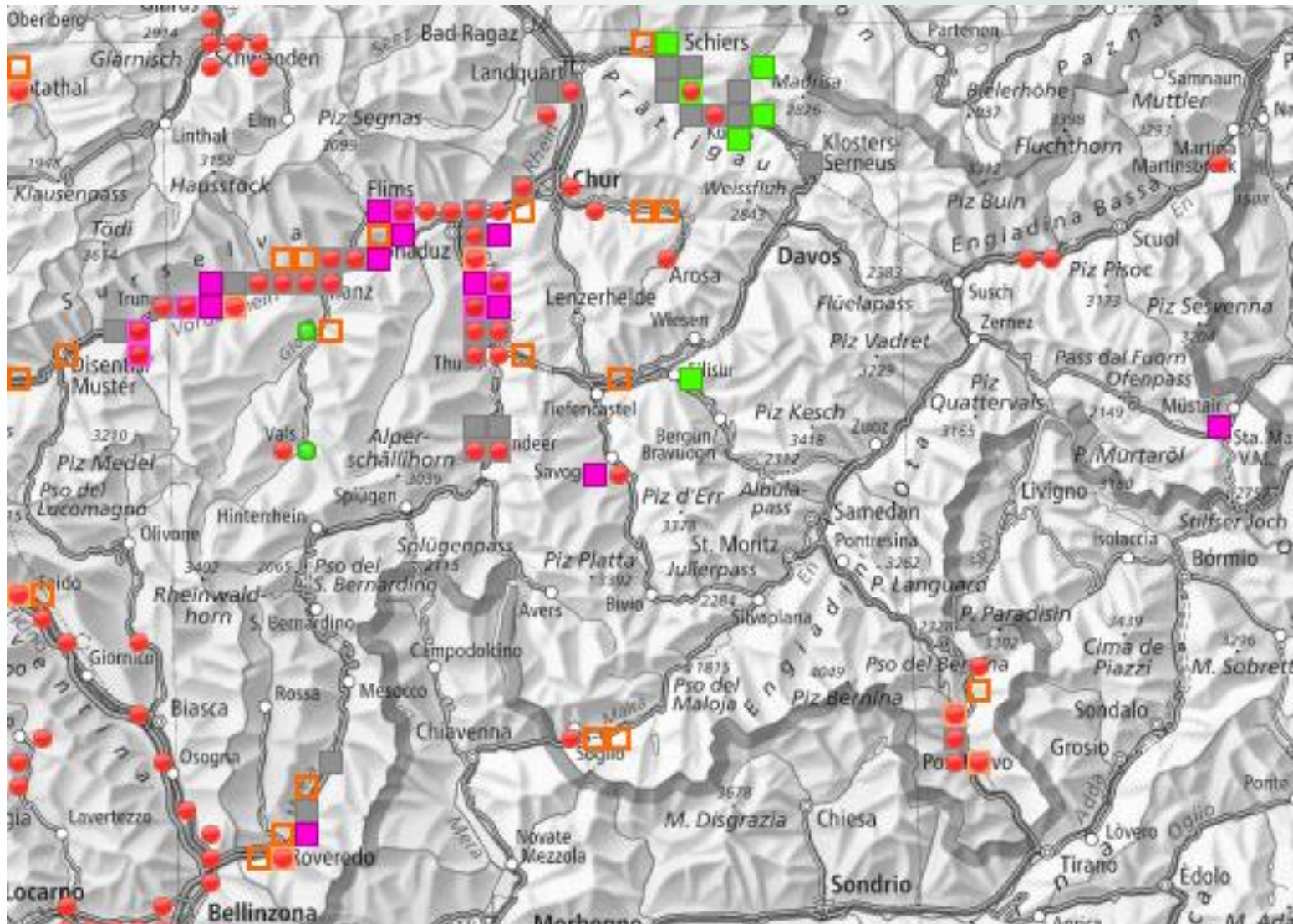
- Widespread after overhead release felling and in cut areas
- Data not complete
- Combated after regeneration fellings

□ Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Impatiens glandulifera



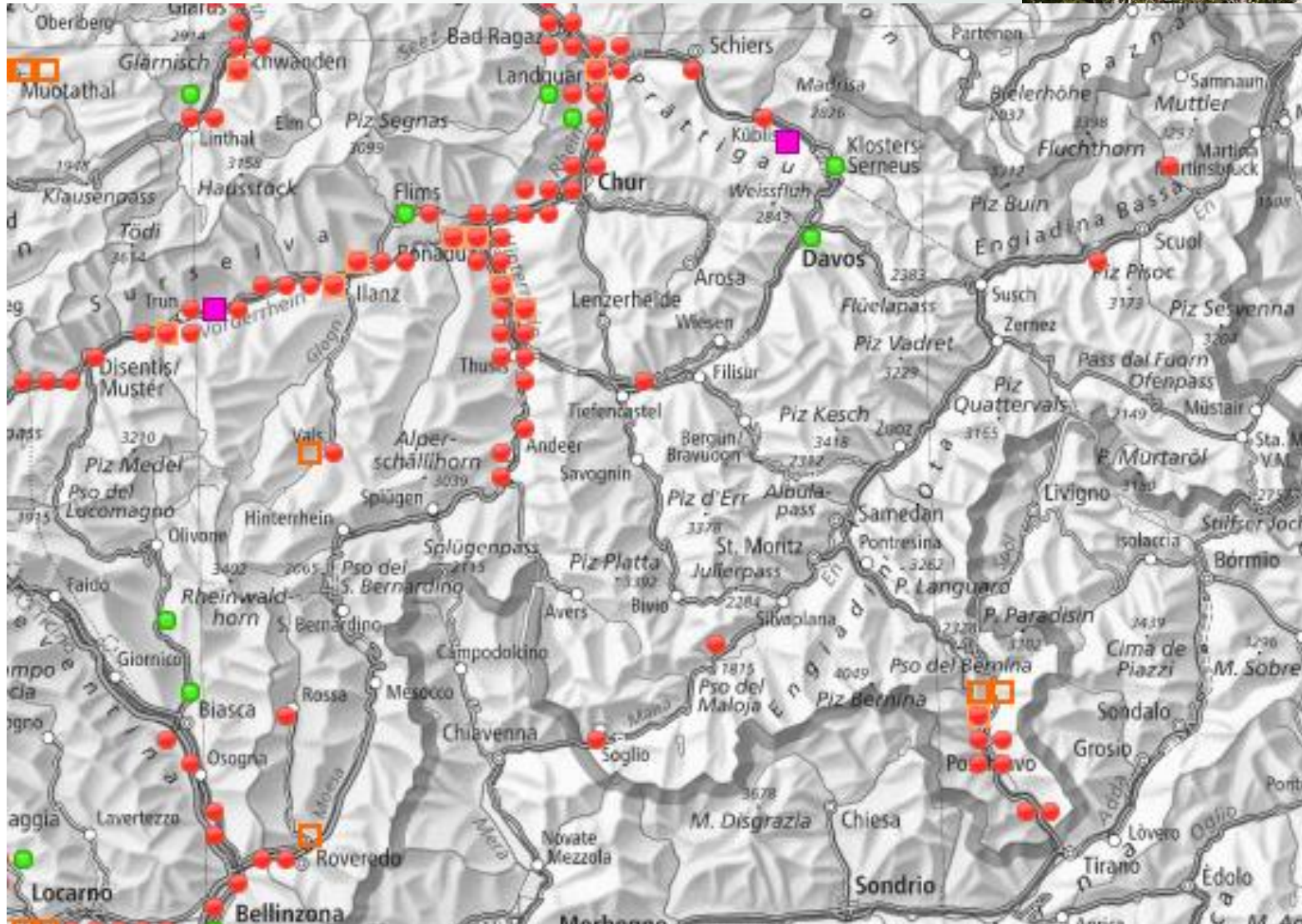
- **Widespread in forests and overhead release felling areas**

□ Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung □ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Solidago spp.



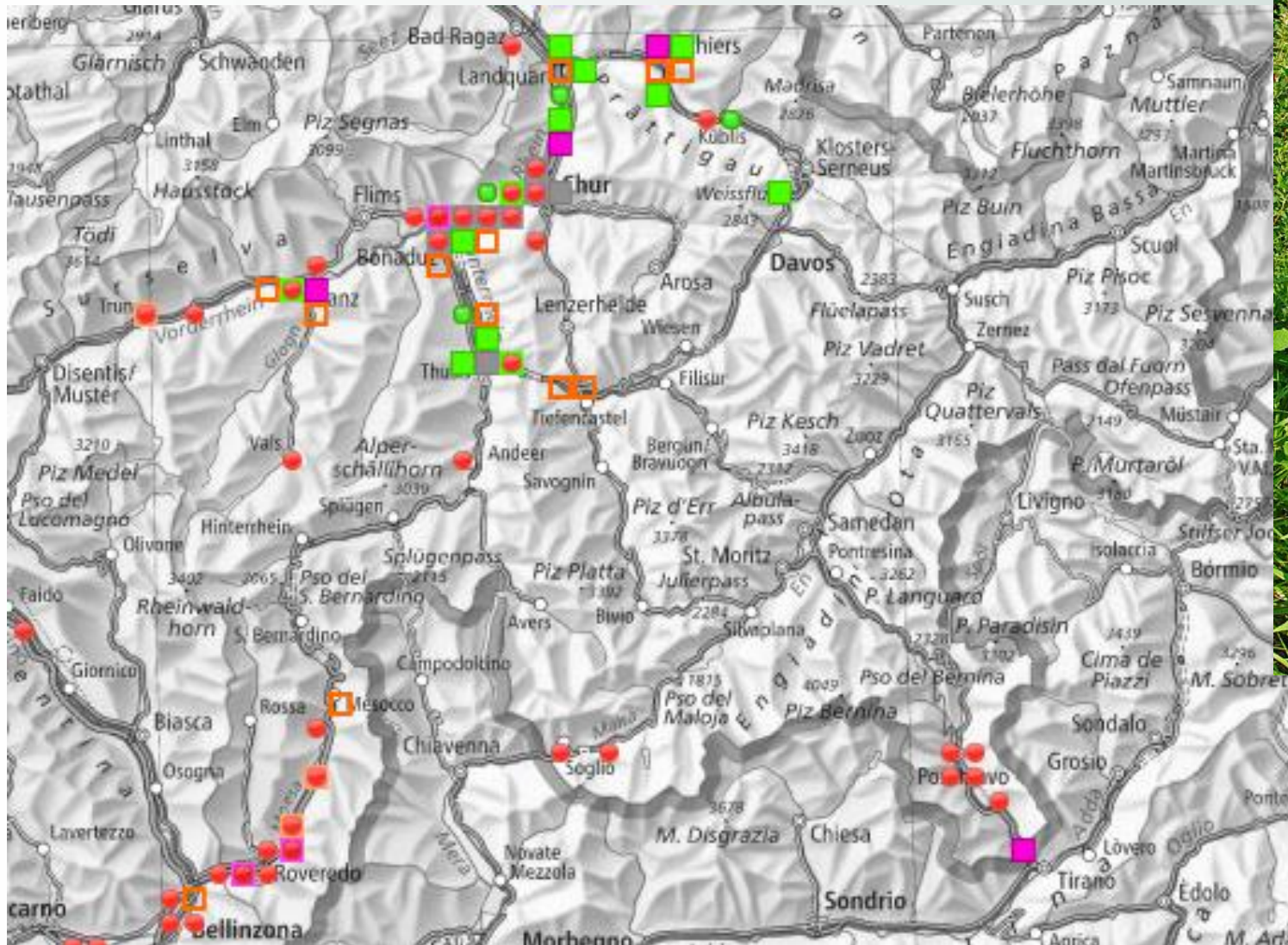
- **Widespread**
- **Present in cut areas**

□ Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung □ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Rhus typhina



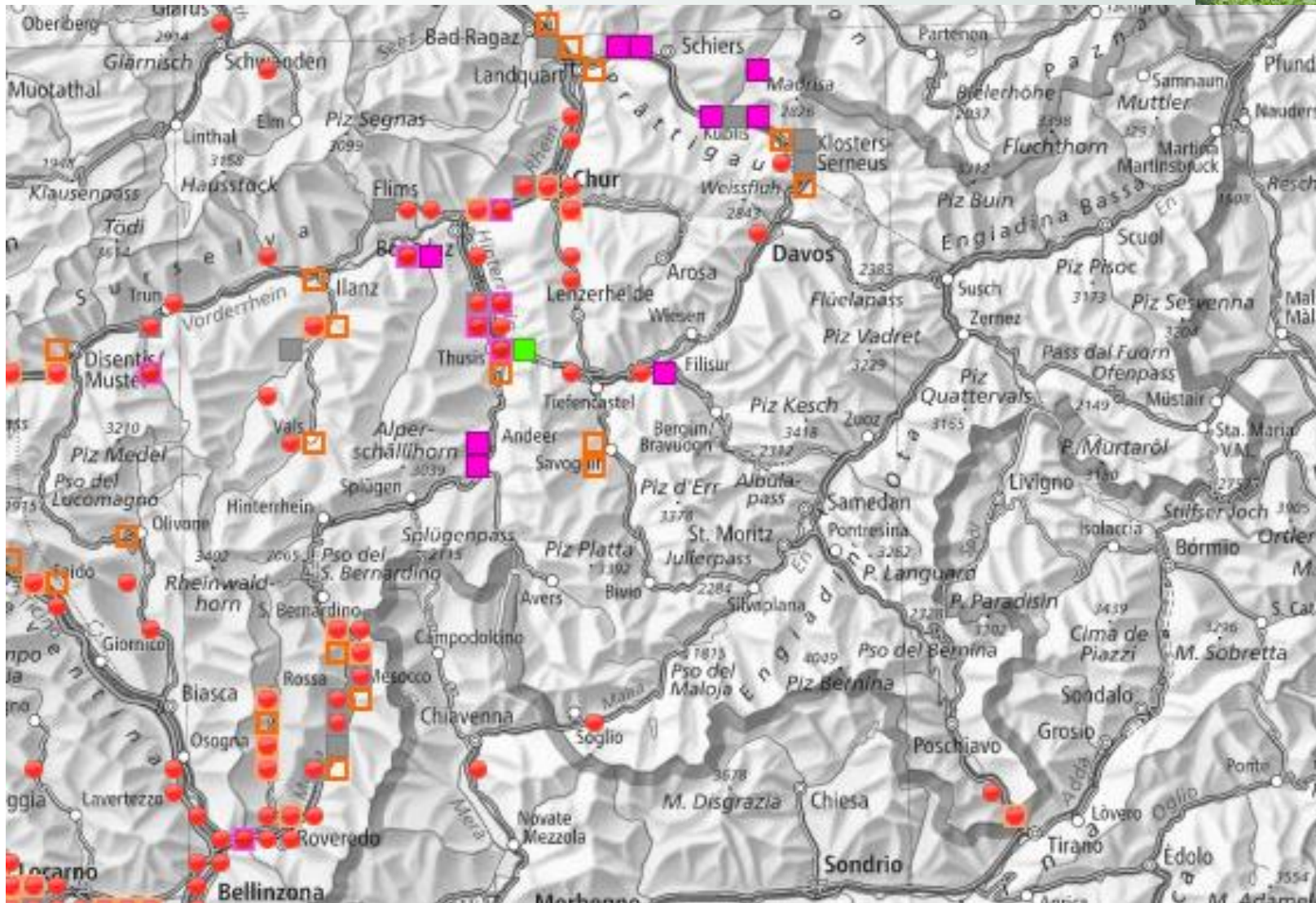
- Widespread, e.g. in disturbed areas
- Partly combatted

Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Reynoutria spp.



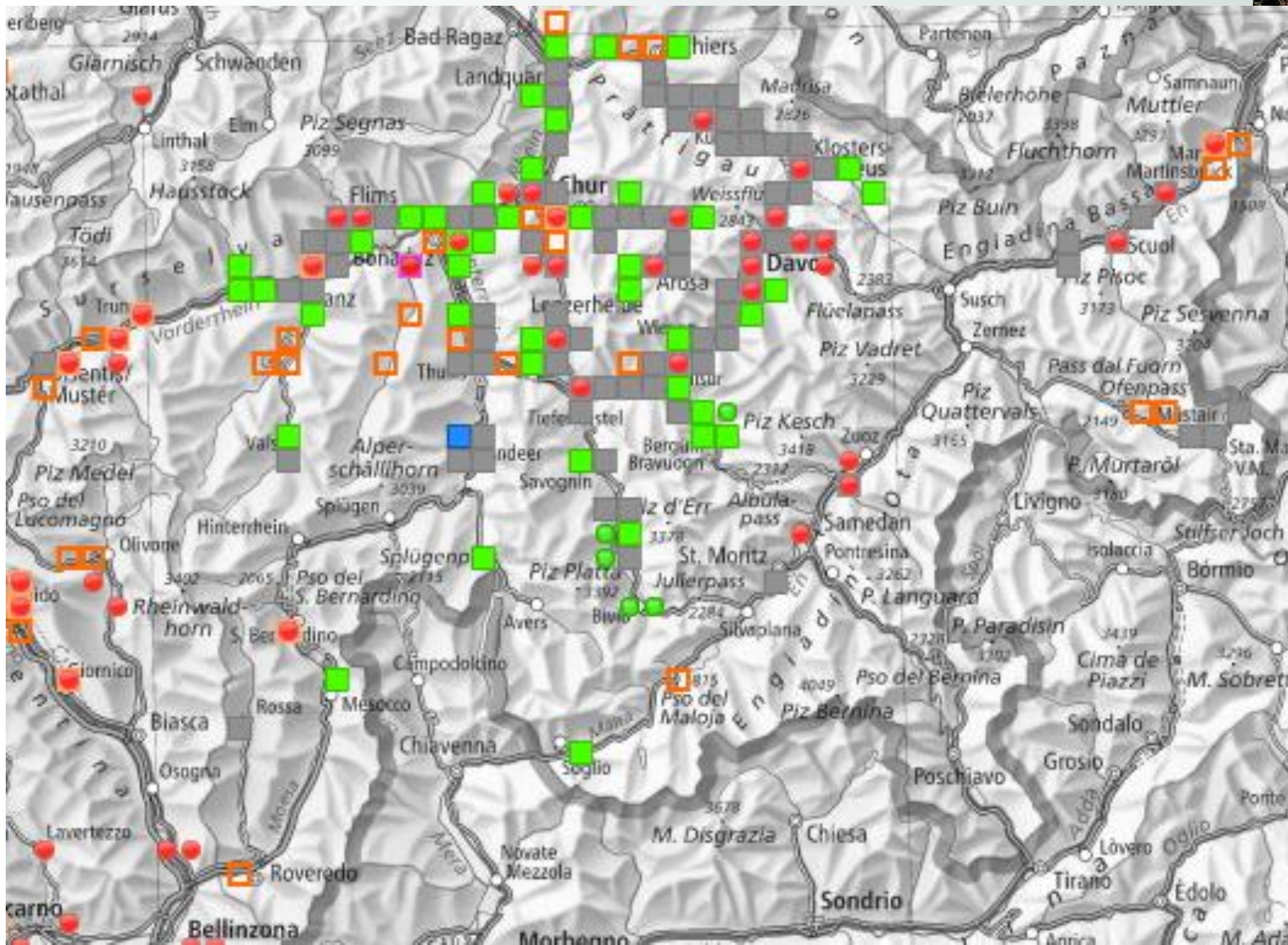
- **Widespread, e.g. in alluvial forests**
- **Partly combatted**

Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Heracleum mantegazzianum



- Widespread some years ago (2008)
- Combated → good results: many eliminated populations (green and gray points)

□ Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe

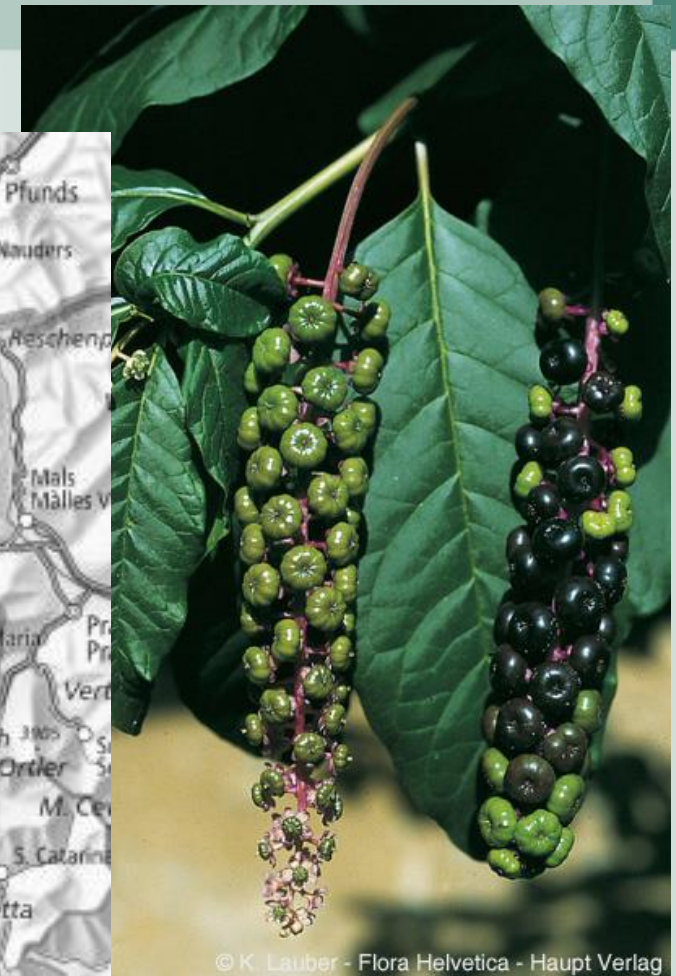


Phytolacca americana



Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe

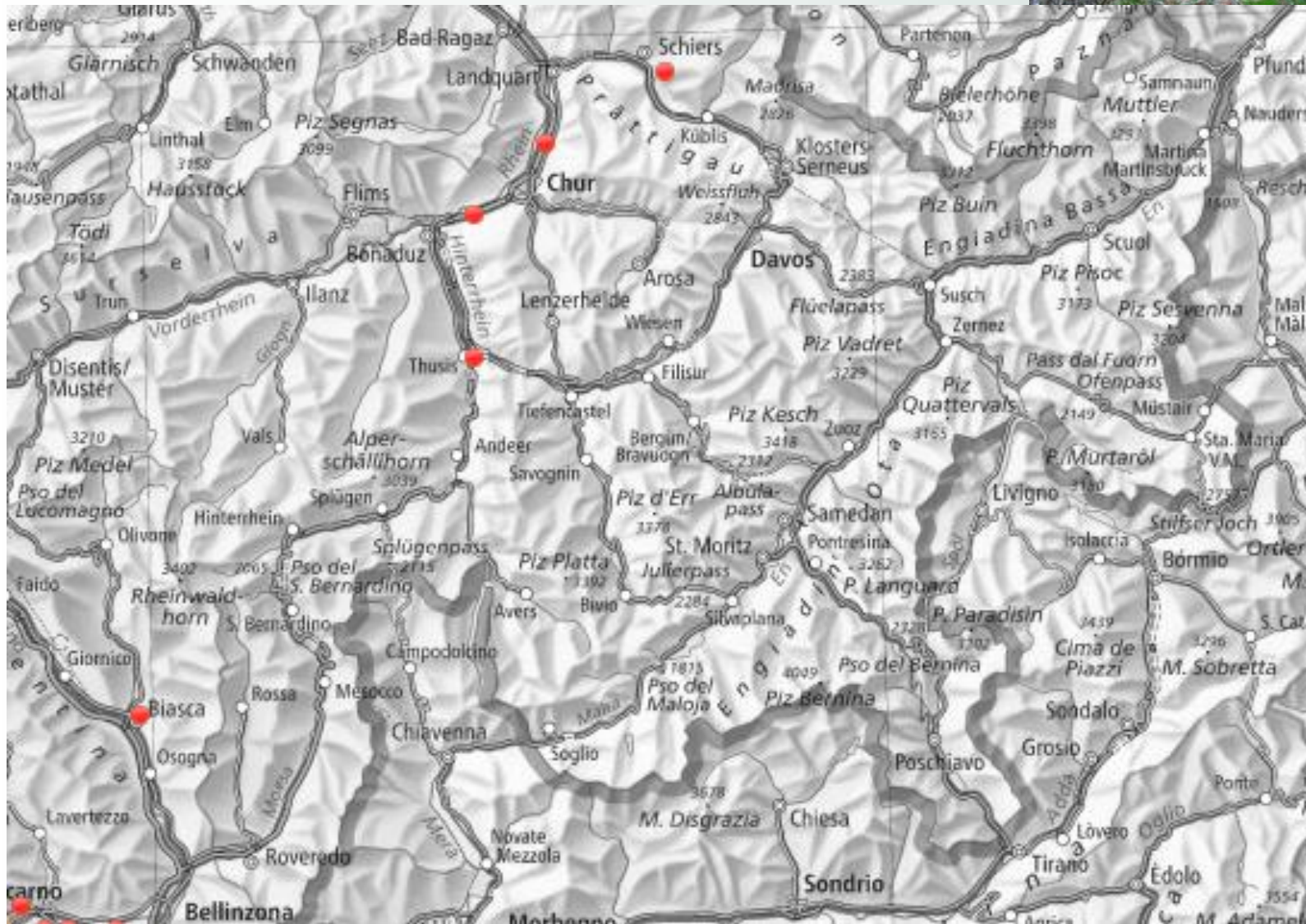


© K. Lauber - Flora Helvetica - Haupt Verlag

- South of the Alps
- Widespread after overhead release fellings and in cut areas
- Data not complete



Prunus laurocerasus



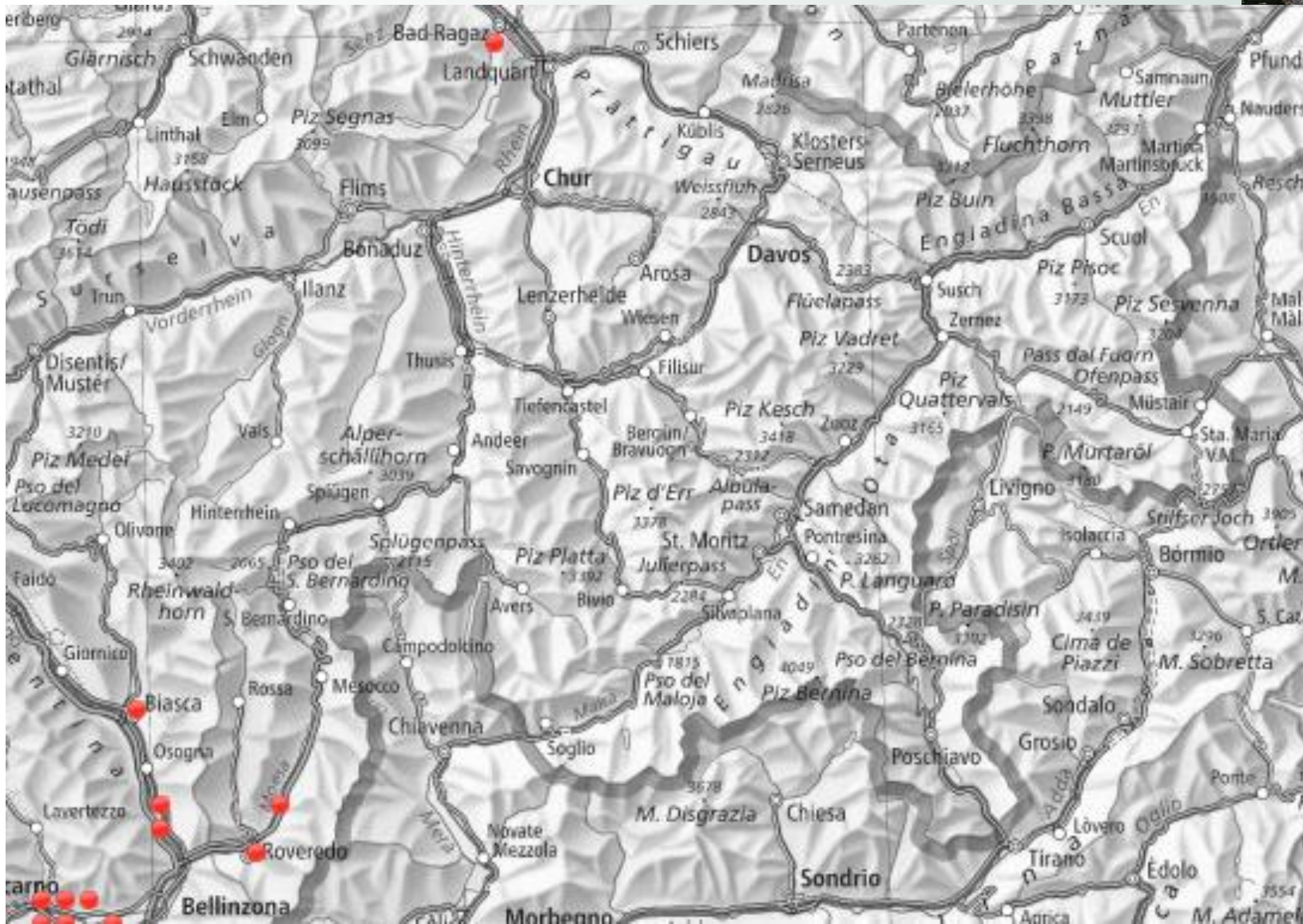
- Present in understory growth (evergreen → benefits over native species)
- Data not complete

□ Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Trachycarpus fortunei



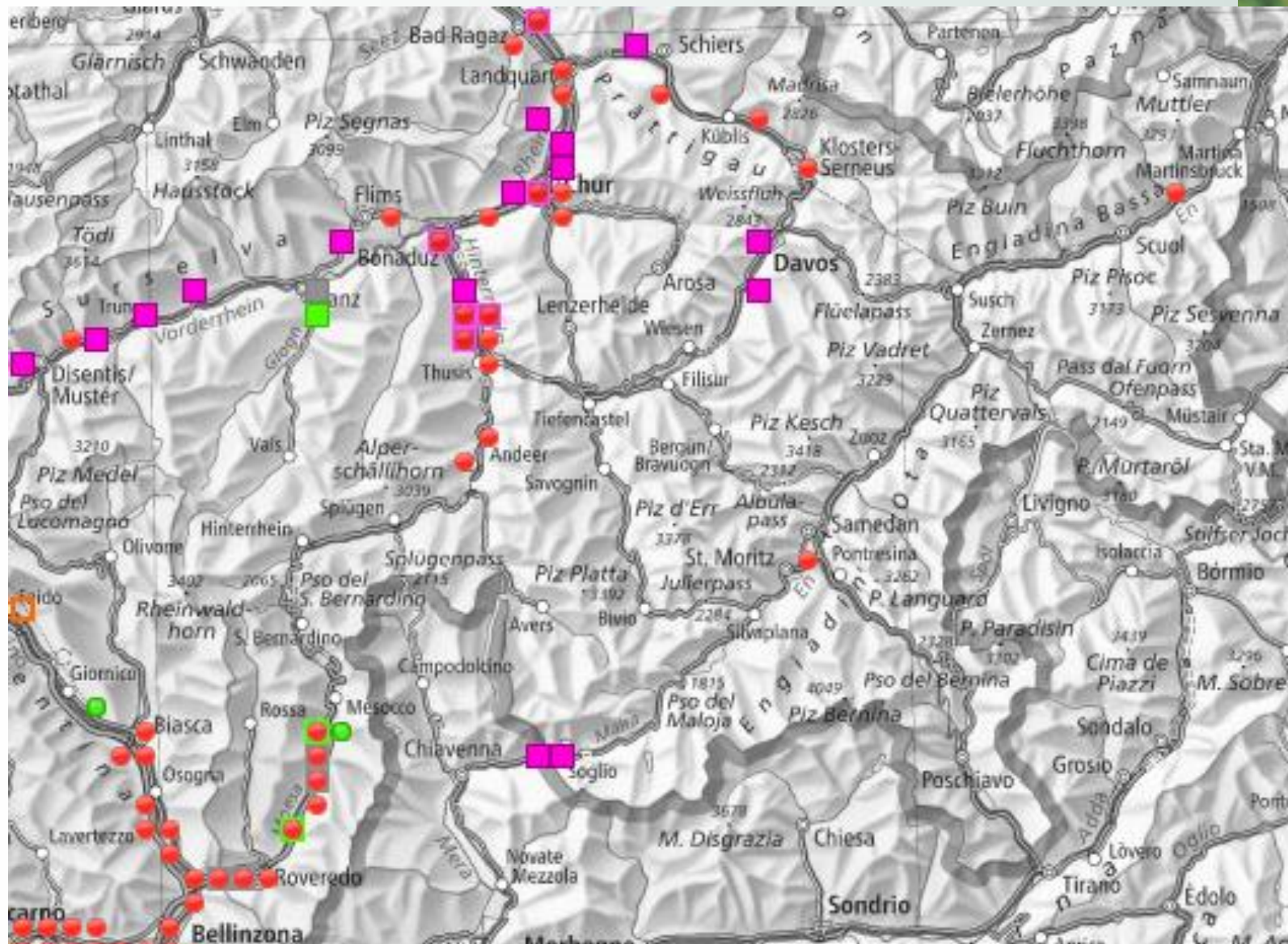
- «Escaped» in the south of the Alps
- Near gardens (seed sources)
- Present in understorey growth
- Data not complete

Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



Ambrosia artemisiifolia



- Scattered in the forests
- Successfully combatted in Val Mesolcina

Ein Quadrat = 2500 m X: 670'845 Y: 247'917

● Negativmeldung ● Positive Beobachtung ■ Bekämpfung ■ Zunehmend / Stabil ■ Eindeutiger Rückgang ■ Ausrottung ■ Mischangabe



2. Impacts in the forest

- Disturbance of the succession
 - Slowdown of natural regeneration
 - Promotion of shade-tolerant tree species
- Disturbance of ecosystems
 - Ailanthus altissima*
- Reduction of biodiversity
 - permanent
 - partly temporary
- Danger of debris clammings, large quantities along streams



Impacts on forest functions

Protection

Reduction of protection function (short- or long-term)

Risk enlargement: Limitation of available tree species

Larger costs of forest tending

erosion/danger of debris jamming

Biodiversity

Project goals can be endangered by the abundance of neophytes (alluvial forest restorations)

Larger costs due to neophytes combat (chestnut forests)

Recreation

Health of forest visitors (*Ambrosia*, *Heracleum*)



3. Ailanthus in Moesano

3.1 Situation 2008/2009

3.2 Impacts in the forest

3.3 Combat strategy

3.4 Combat 2009 - 2016

3.5 Results

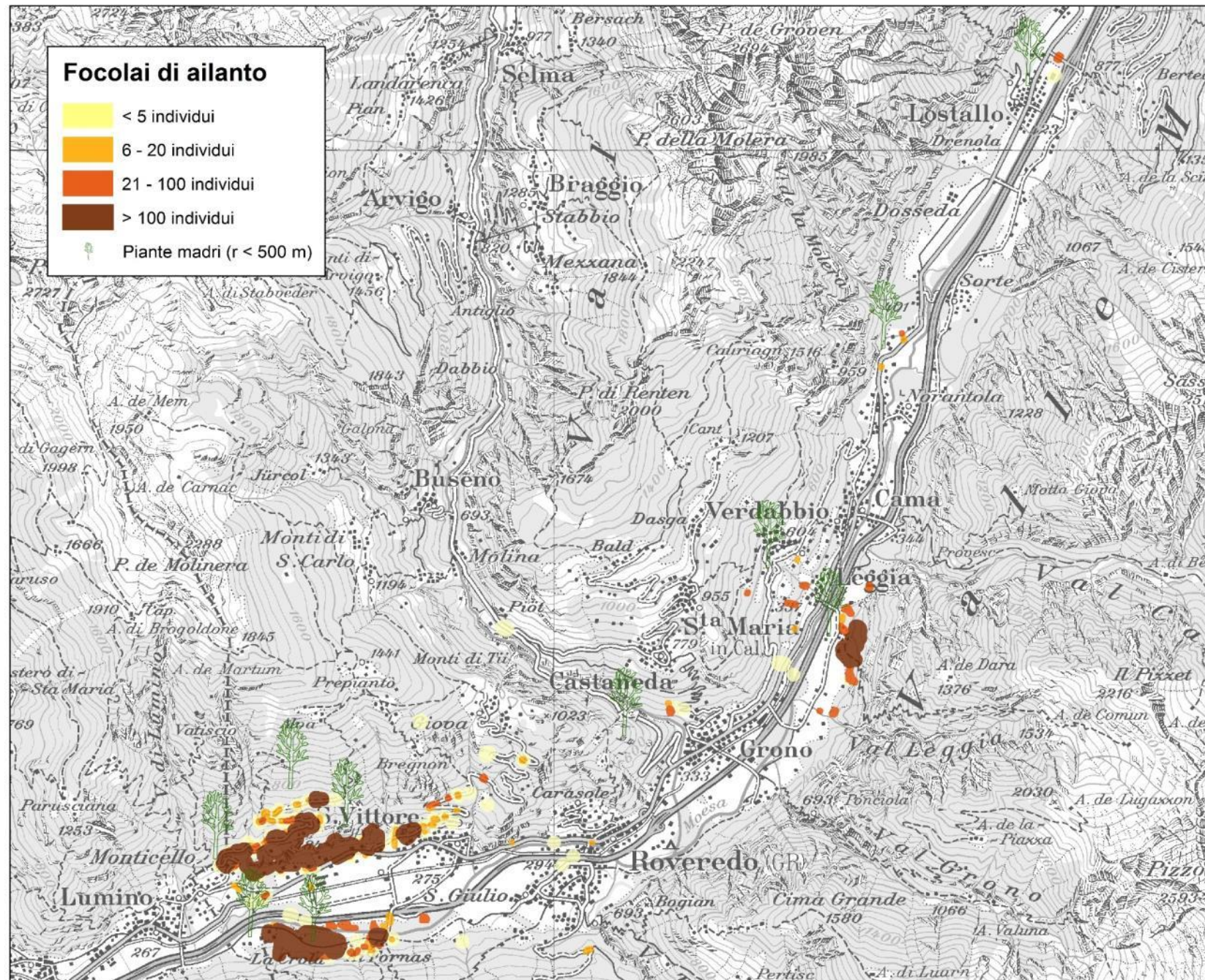


3.1 Situation 2008/2009

Mapping San Vittore (2008) – Val Mesolcina (2009/2010)

- San Vittore: area of ca. 35 ha, partly pure stands
> 1'000 seed trees
older individuals > 60 years old
- Leggia: widespread, ca. 10 populations
partly pure stands (Tec)
> 100 seed trees
older individuals > 45 years old
- Roveredo, Grono, Castaneda, Cama, Lostallo:
individual seed trees, some populations







3.2 Impacts on protection forests













Impacts on biodiversity

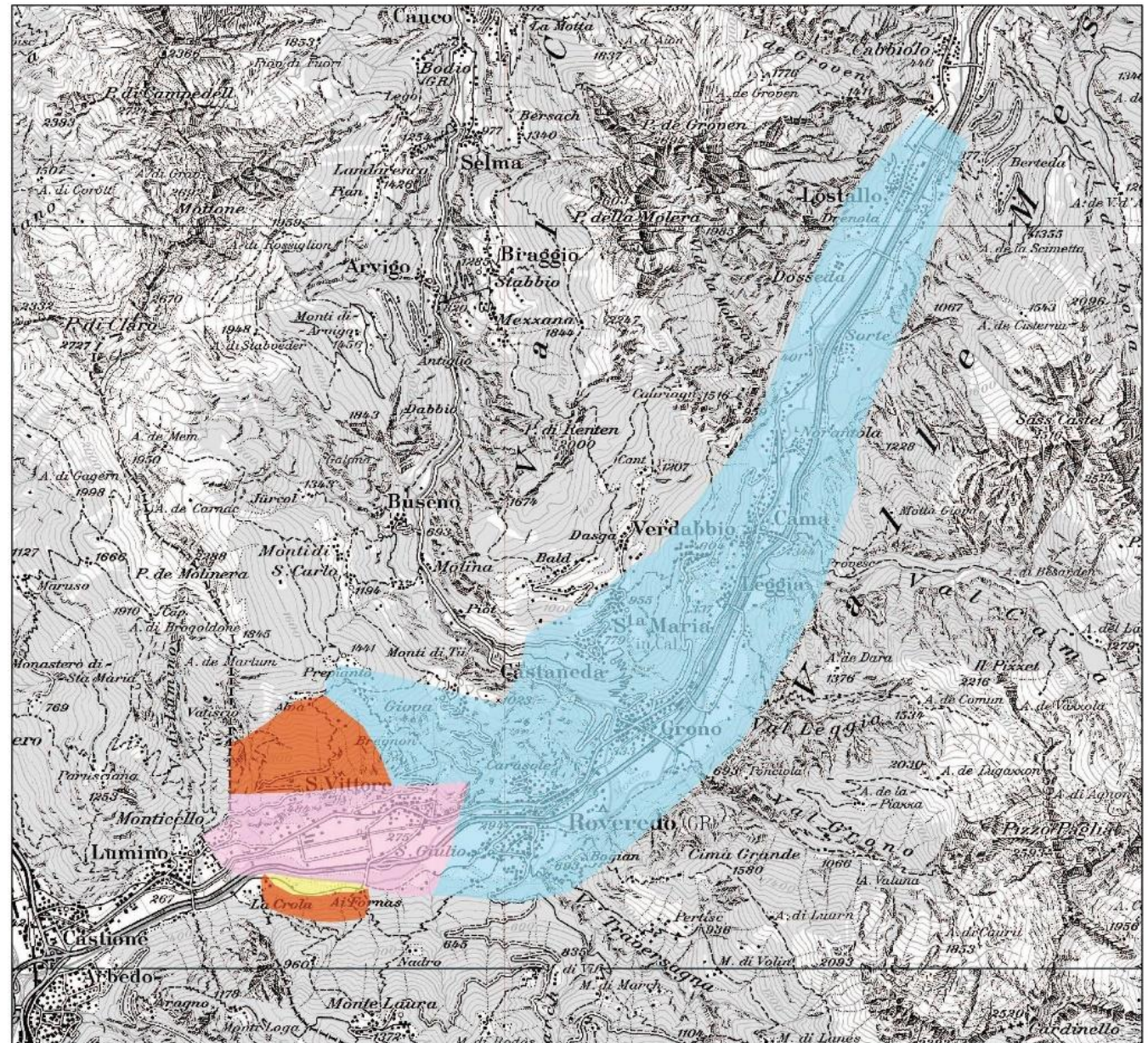






3.3 Combat strategy AWN 2009

- 1) Elimination of all *Ailanthus* north of San Vittore (blue);
- 2) Inhibit vertical propagation in San Vittore (red);
- 3) Remove *Ailanthus* from alluvials of national importance (yellow).





3.4 Combat 2010 - 2016

1) Elimination of all *Ailanthus* north of San Vittore (blue): done

- 2009 Leggia: Stands in Tec
- 2010-2011 Grono - Lostallo: all seed trees (forest – settlements) eliminated
- 2011-2016: consistent combat of root suckers and new populations
- 2014: re-mapping of *Ailanthus* Moesano

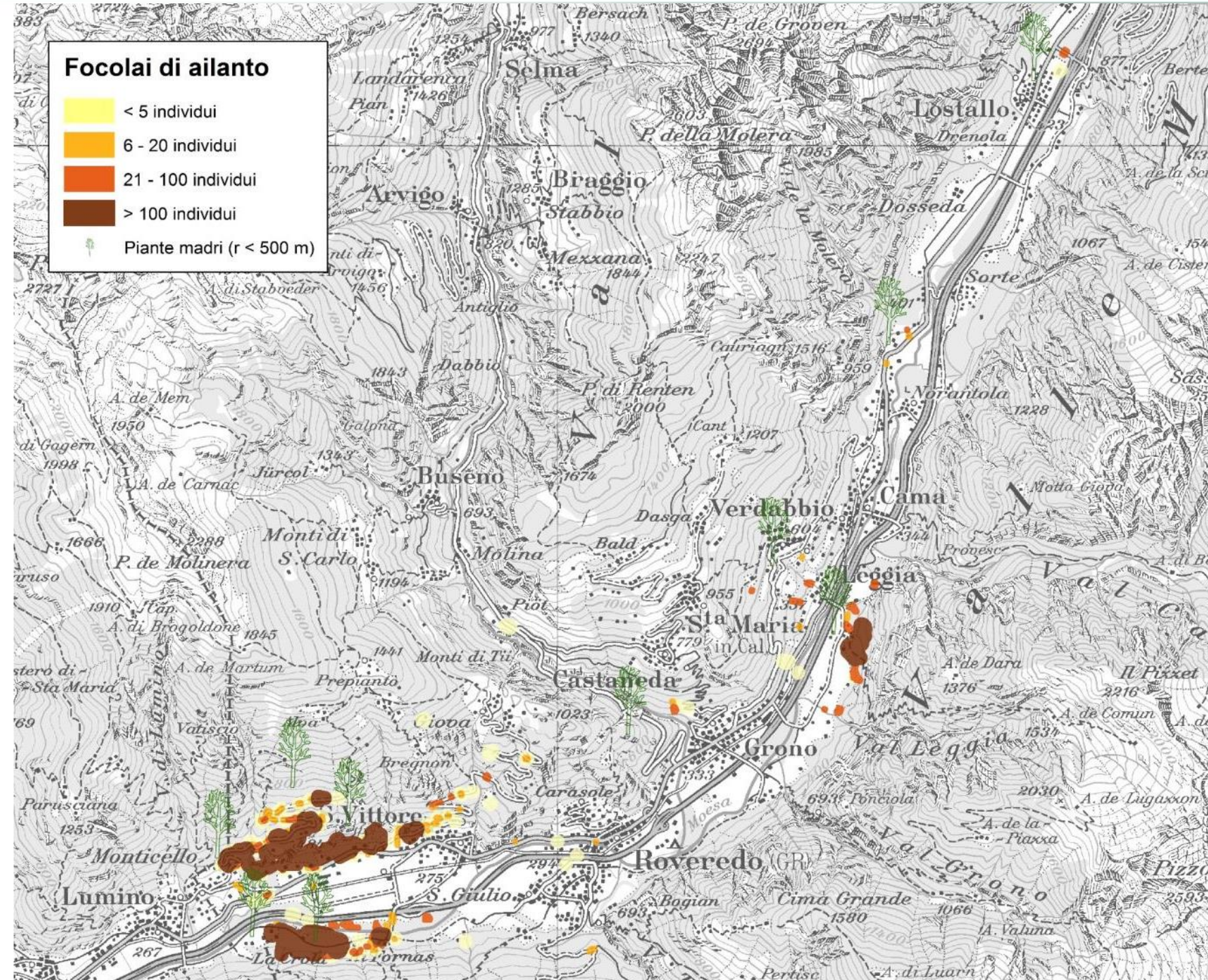
2) Inhibit vertical propagation in San Vittore (red): stopped

3) Remove *Ailanthus* from alluvials of national importance (yellow): partly done

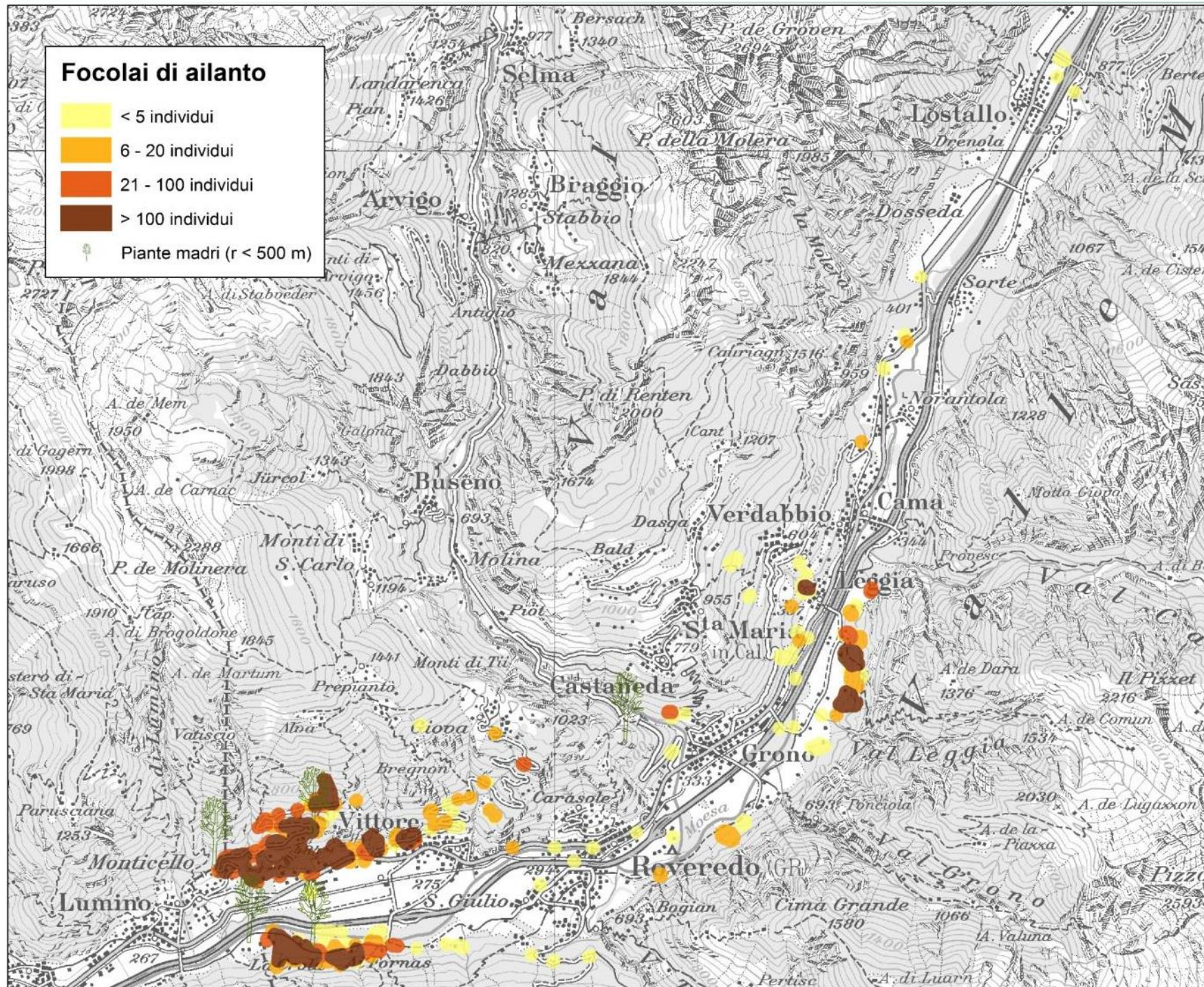


Focolai di ailanto

- < 5 individui
- 6 - 20 individui
- 21 - 100 individui
- > 100 individui
- Piante madri (r < 500 m)



2009

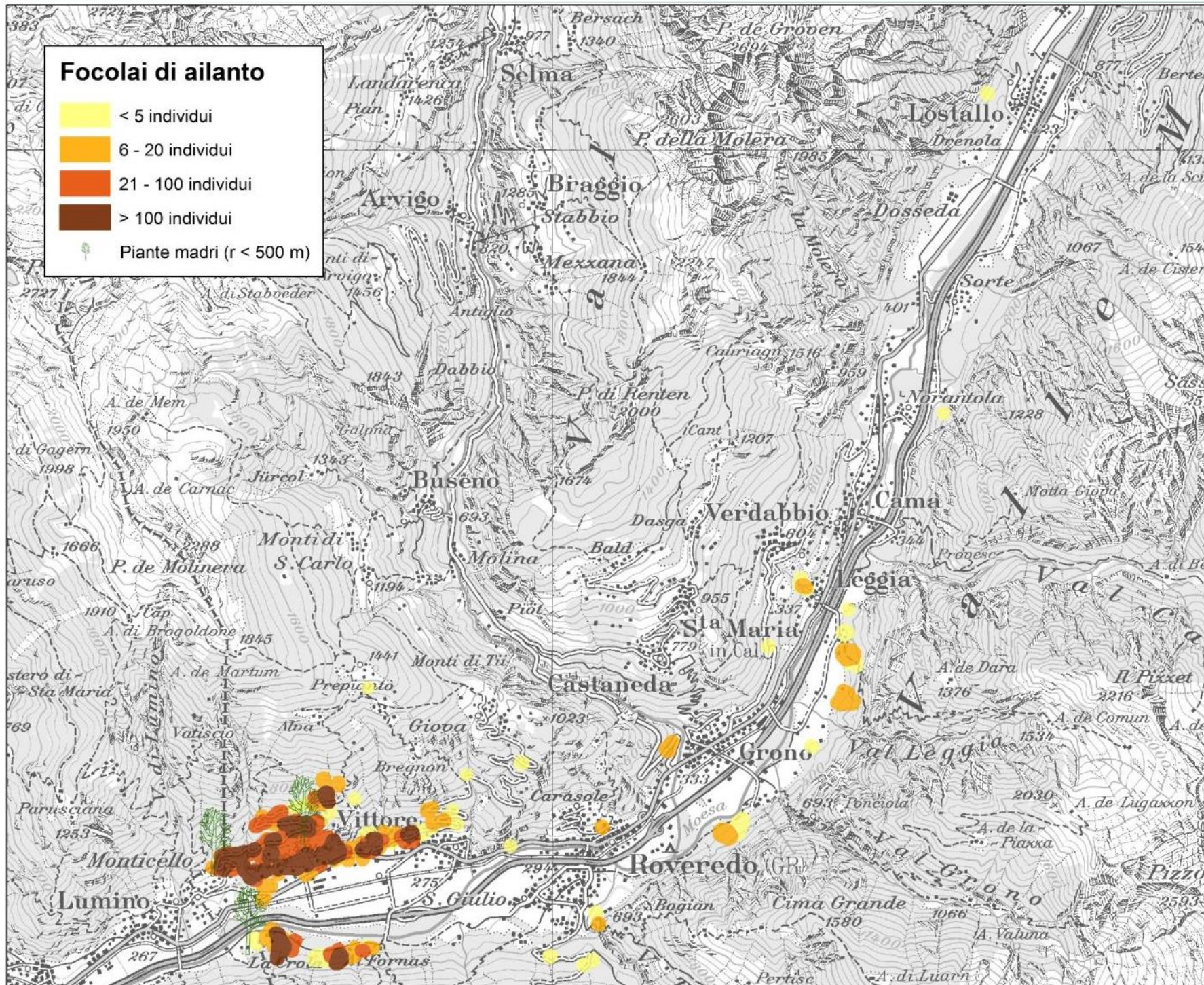


2013
2014



Focolai di ailanto

- < 5 individui
- 6 - 20 individui
- 21 - 100 individui
- > 100 individui
- Piante madri (r < 500 m)

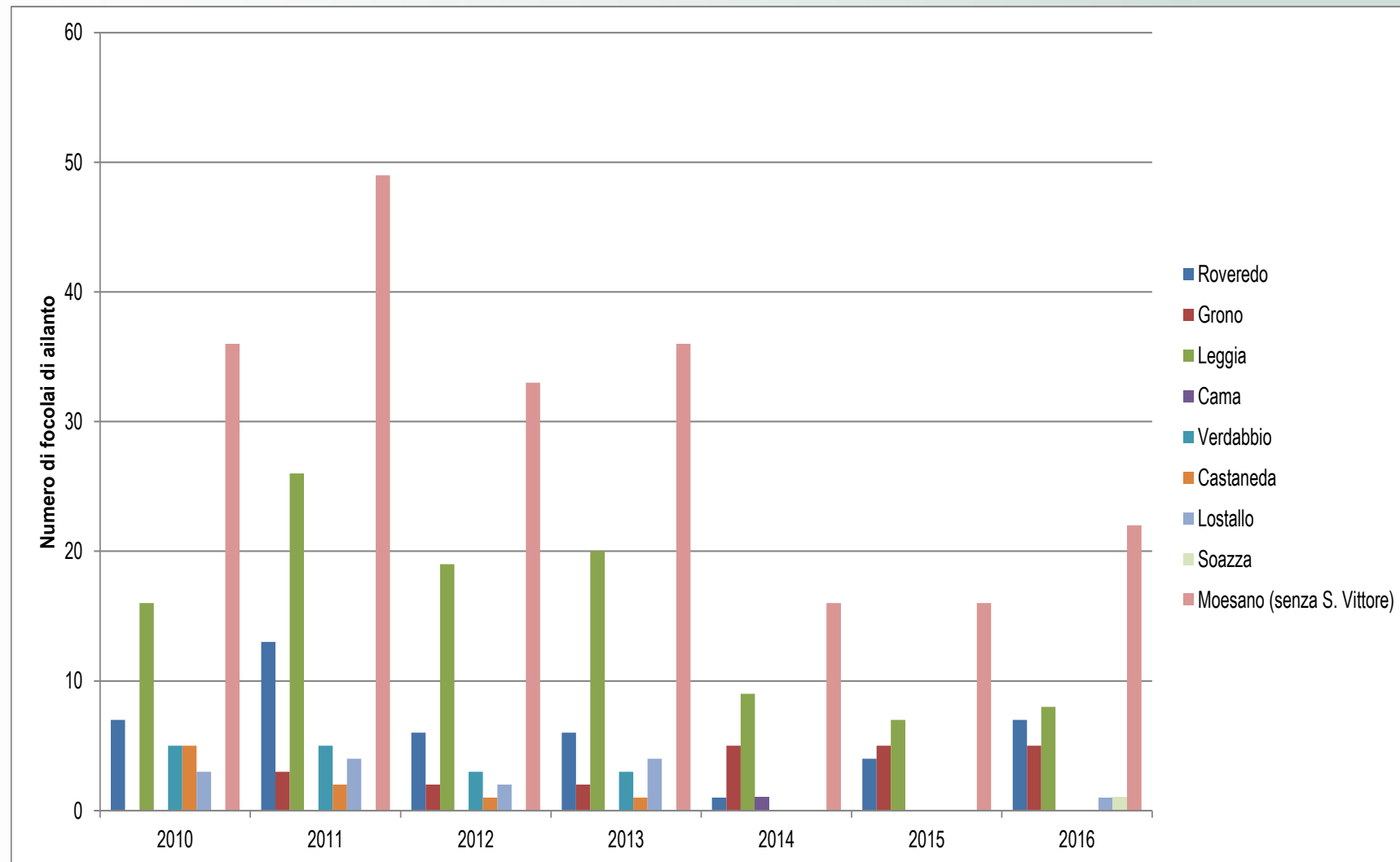


2016



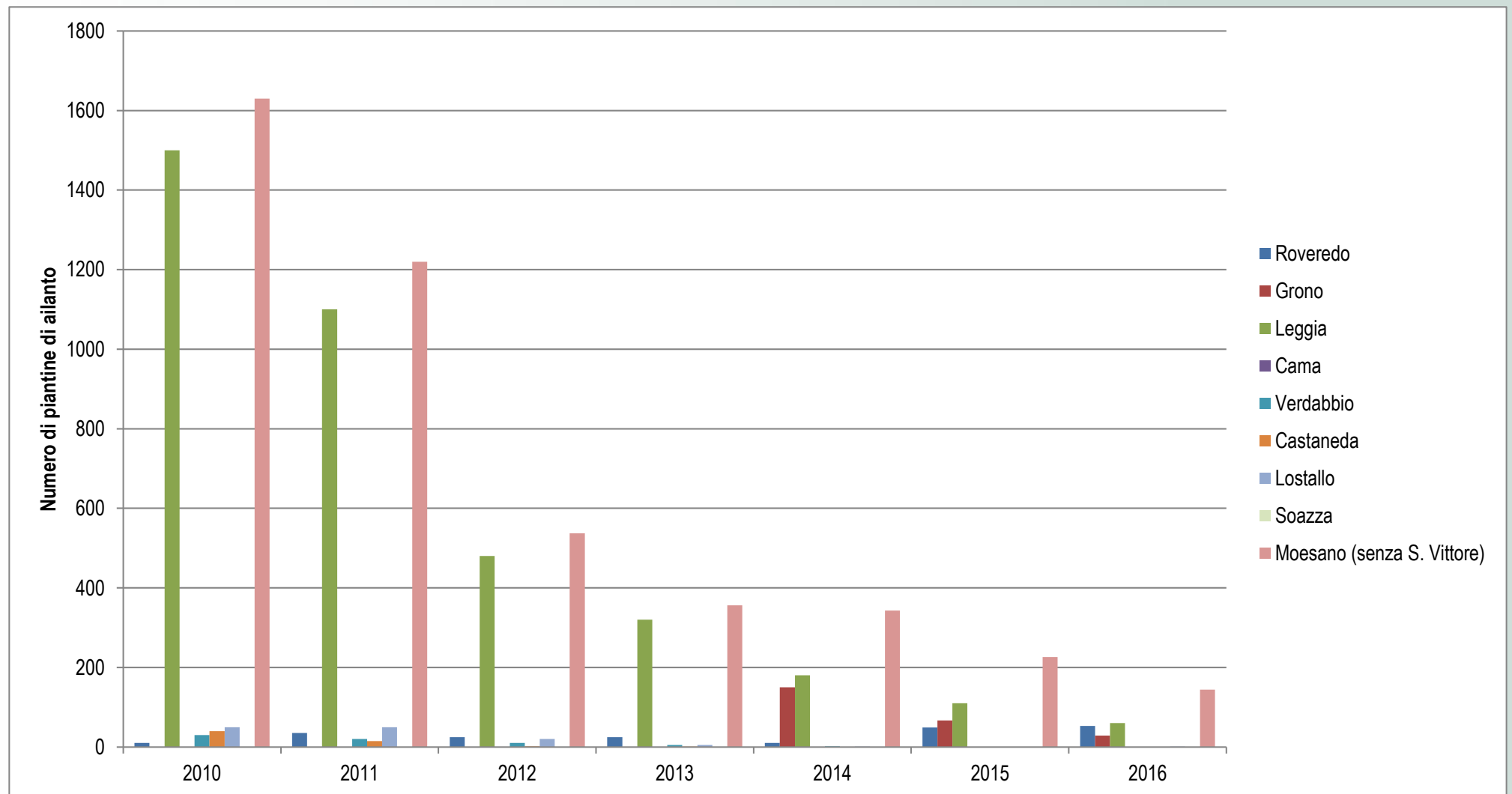
3.4 Results

Development of number of populations in Val Mesolcina (without San Vittore)





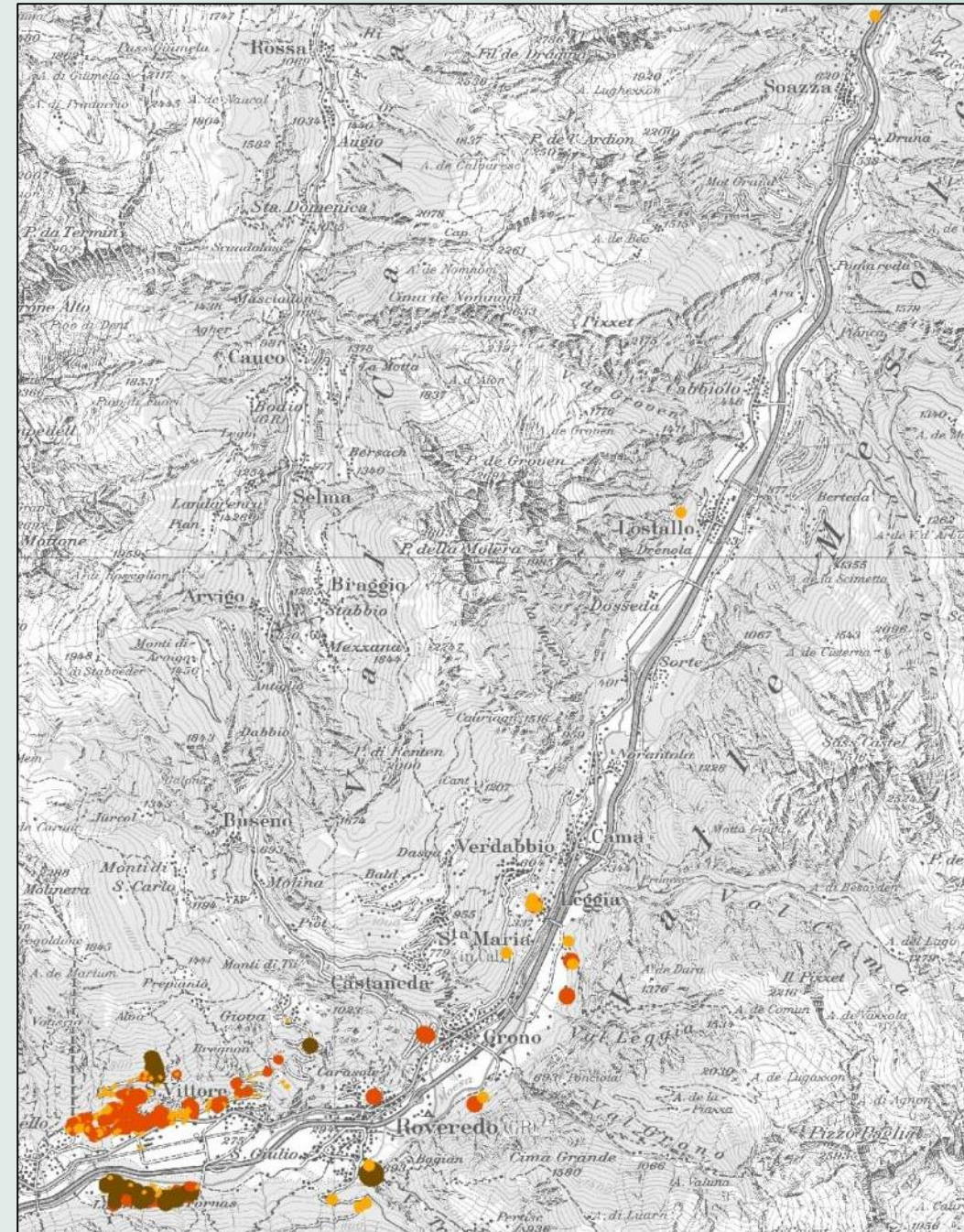
Development of number of *Ailanthus* (estimation) in Val Mesolcina (without San Vittore)





Development 2010-2016 (without S. Vittore)

- Number of populations: from 50 to 22 (2016)
- Massive reduction of number of *Ailanthus* (from >1600 to ca. 150)
- Some populations with lower number of individuals (max. 20)
- 2 populations in a distance up to ca. 2 km from seed trees
- **Very low investment (from Grono to Lostallo 2011 – 2016 only Fr. 5'000.- / year)**





Conclusion:

Neophytes can be combatted, if you:

- Have a good strategy for combat (before neophytes are in the state of exponential growth, setting priorities, ...)
- Combat consistently (every year, inside and outside of the forest, control of cut areas, ...)
- With appropriate methods

**Thank you
for your attention**