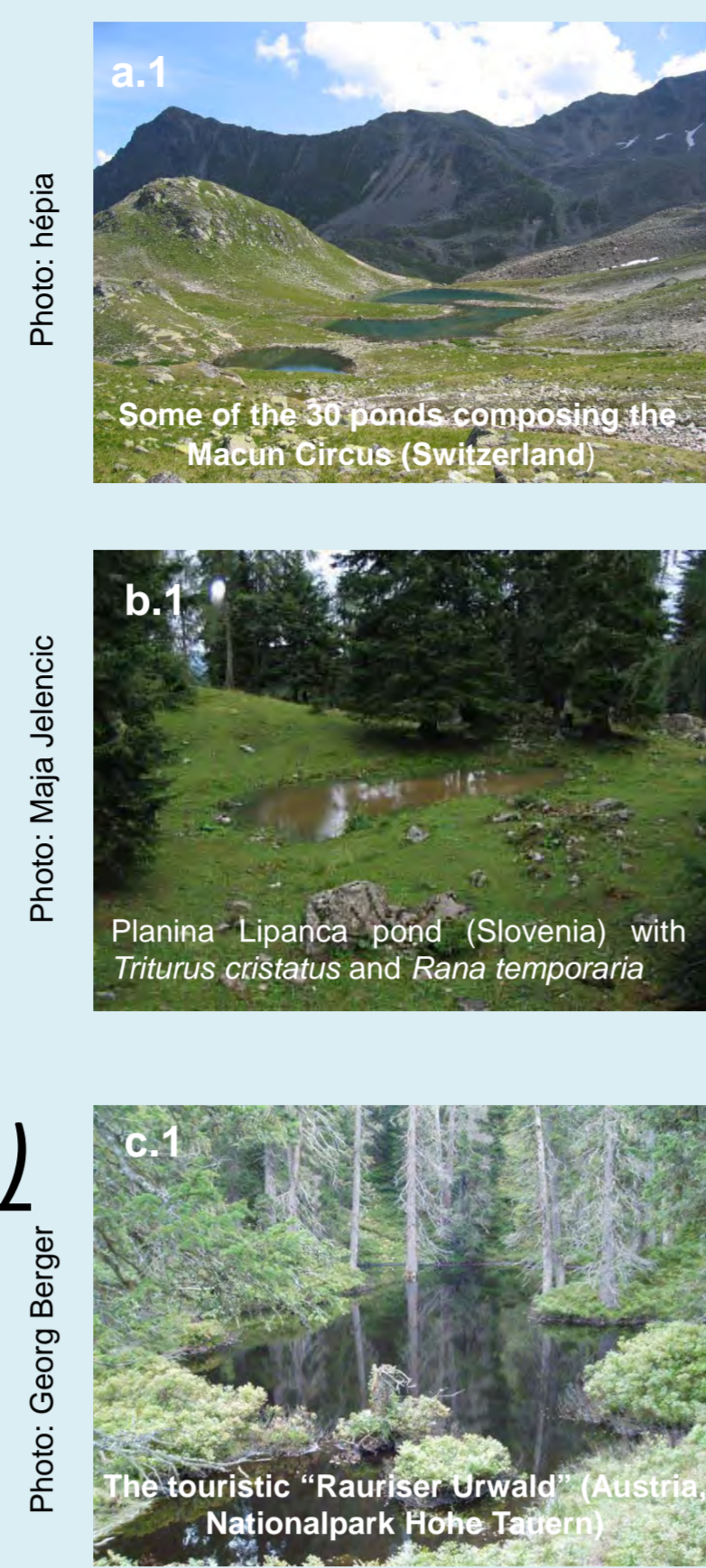


Introduction

The European Pond Conservation Network (EPCN) has developed a project for the identification of Important Areas for Ponds (IAPs) as part of a larger program for pond conservation in Europe and the Mediterranean region (the « pro pond » project supported by the MAVA foundation)

Defining Important Areas for Ponds (IAPs)

An IAP is a geographical area presenting a special biological, ecological or social conservation interest (figure 1.)



An IAP can be either:

(a) a region with a high **density** of ponds interconnected at the landscape level (pond network)

(b) one or several High Quality Pond(s). An **HQP** is a pond with a high **biological** value given to the rarity of **habitats** (for the Alps e.g. *natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation*) and **species** (for the Alps e.g. *Salamandra lanzai* or *Aeshna subartica*) they support (Nicolet et al., 2007, Reymond, 2009)

(c) places recognized for their special present or historical **social interest** (e.g. touristic places, swimming ponds, fish farming ponds, recreational angling ponds, ponds recognized for their scenic beauty, etc.)



Figure 1: potential candidates for an IAP presenting a remarkable pond network (a) or ponds with high biological (b) or social interest (c)

Methods

We developed a methodology for the identification of IAPs which is **independent of national boundaries** to minimise differences between regions and ensure homogeneous results. The final choice of IAPs is realised by the **local stakeholders**.

Five possibilities for the designation of an IAP

Five independent possibilities can lead to the classification of an area as a potential IAP (pIAP). One selection criterion is associated with each of the five possibilities (figure 2)

1) Existing **pond inventories** are identified and analysed using Geographic Information System to highlight regions with a high pond **density** (pond networks)

Collating data about the ponds to identify HQP supporting, according to international legislation :

2) **species** of high conservation value

3) important **habitats**

4) Pond's **cultural, historical, economical or scientific interests**

5) Final selection by local experts. It includes a critical **screening** of proposed IAPs and eventually the proposition of new ones

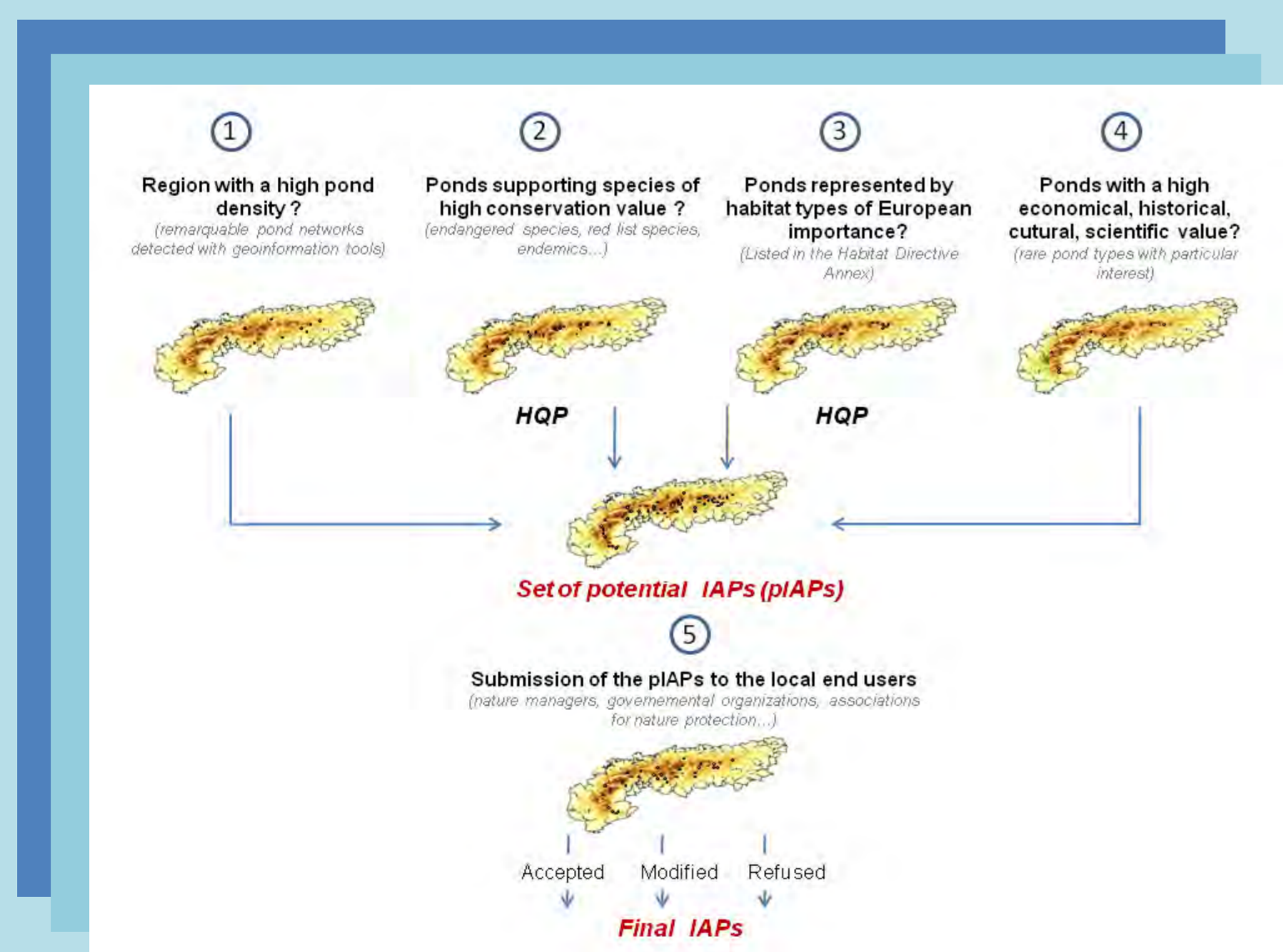


Figure 2: illustration of the EPCN IAP selection process (See Reymond, 2009)

A preliminary test on the Alpine Arc

We focused on the regions higher than 1500m (e.g. subalpine, alpine and nival altitudinal belts) from the main contracting parties of the **Alpine Convention** (Austria, France, Germany, Italy, Slovenia, Switzerland)

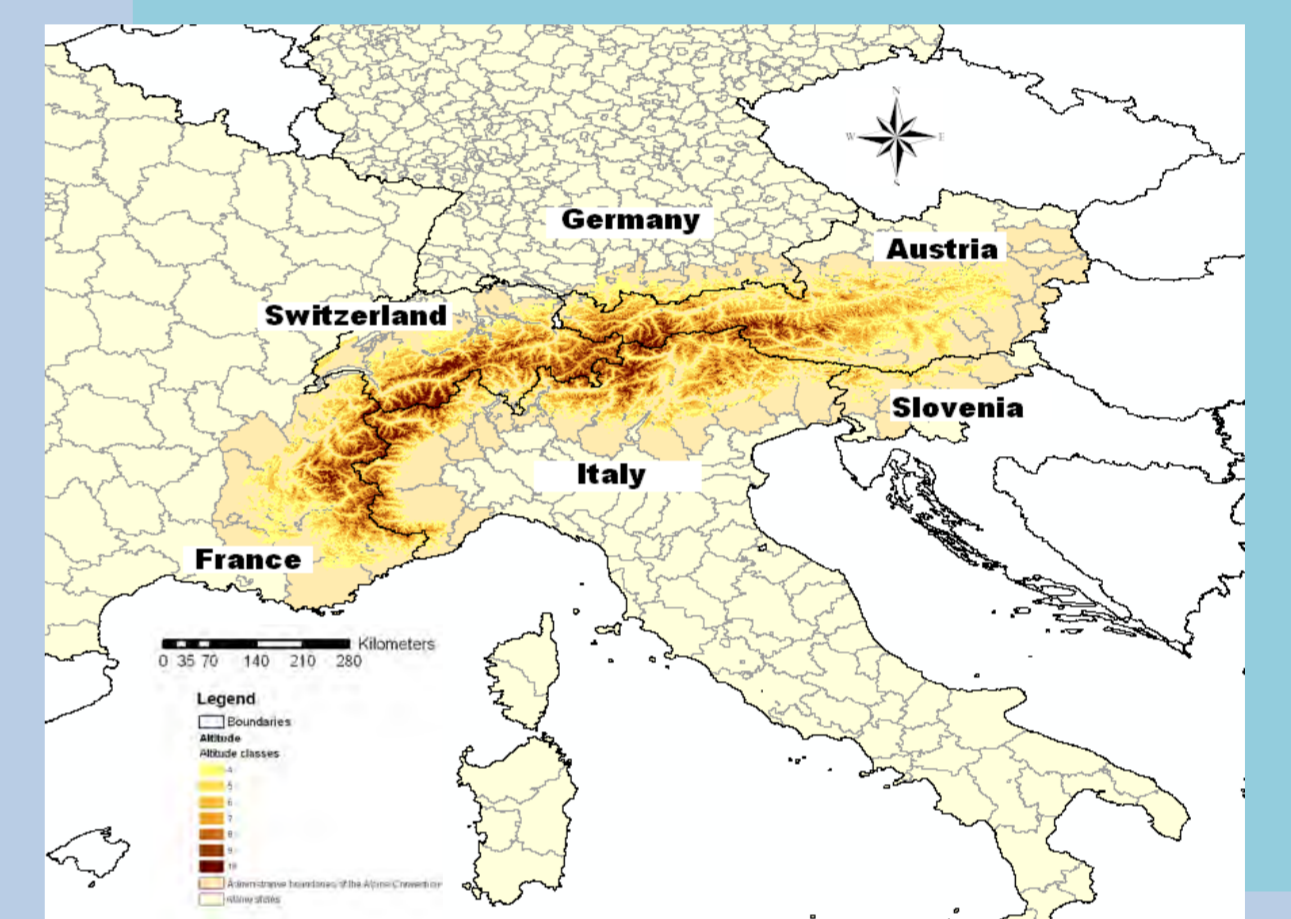


Figure 3: administrative boundaries of the Alpine Convention

First results using the density criterion in Switzerland

A method was developed to delimitate areas supporting a high pond density based on **distance** between neighbouring ponds. GIS treatment of data from the hydrological layer of the 1:25.000 vector map of Switzerland identifies 14 potential IAPs (represented in figure 4 and described in table 1).

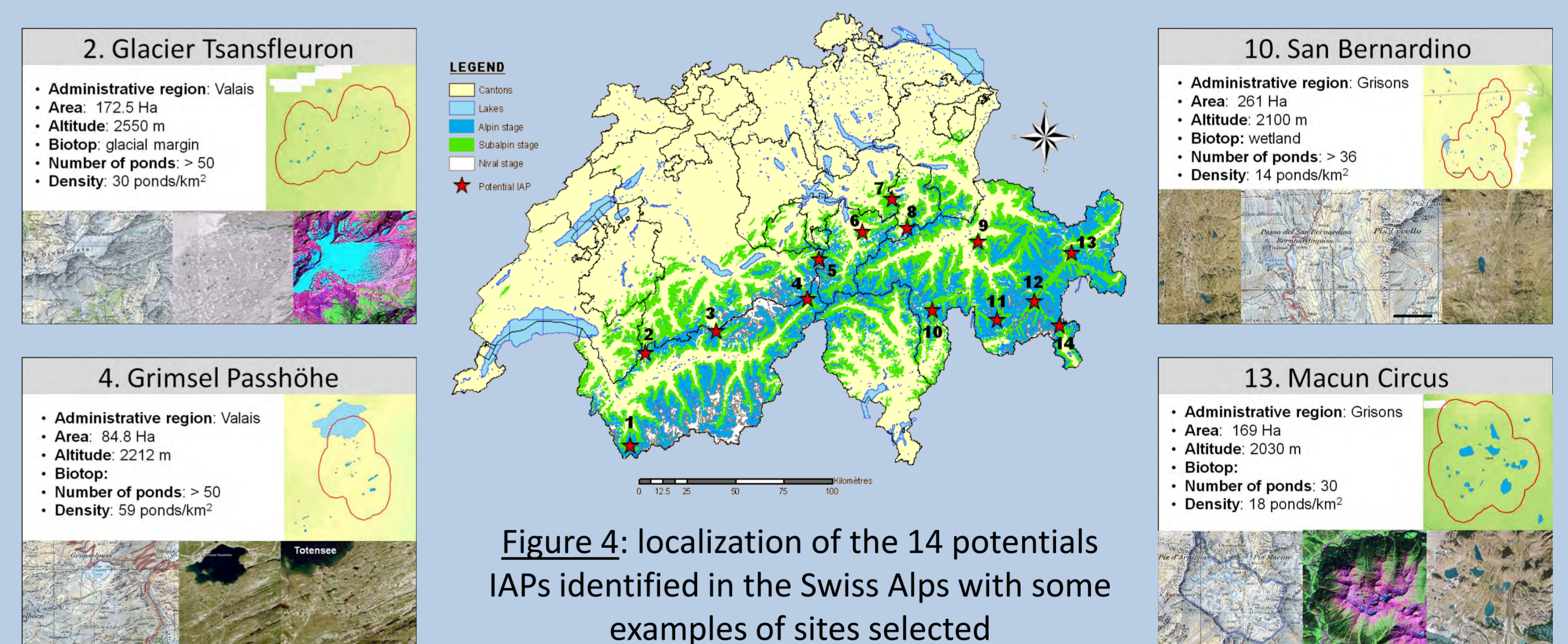


Figure 4: localization of the 14 potentials IAPs identified in the Swiss Alps with some examples of sites selected

Table 1: Characteristics of the retained IAPs

N°	IAP Name	Canton	Area (km ²)	Number of ponds	Density (ponds/km ²)
1	Chaux des Planards	Valais	1.728	15	8.68
2	Glacier de Transfleuron	Valais	1.725	27	15.65
3	Lötschberg	Valais	1.239	20	16.14
4	Grimselpass, Totensee	Valais	0.848	24	28.30
5	Steingletscher, Steisee	Berne	1.023	21	20.53
6	Rinderstock, Plattisee	Uri	0.814	17	20.88
7	Hinter-silberenalp, Silberensee	Schwyz	2.049	38	18.55
8	Muttsee Hüenderbüel	Glaris	1.549	21	13.56
9	Pradaschierer Alp	Grisons	2.134	22	10.31
10	Passo del San Bernardino	Grisons	2.617	36	13.76
11	Uf de flüe	Grisons	2.279	32	14.04
12	Samedan, Golf	Grisons	1.393	23	16.51
13	Macun	Grisons	1.689	20	11.84
14	Ospizio Bernina	Grisons	2.738	37	13.51

For the pond inventory across the whole Alps, we assessed pond distribution through remote sensing. We used SPOT **satellite imagery** (generously provided by the French initiative Planet Action, Spot Image)

Conclusion

This methodology has proved its efficiency for the detection of IAPs and can be **implemented** elsewhere, for example in the Mediterranean region. Nevertheless, the previous tested technic has to be adapted to local context.

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- Nicolet P., Weatherby A., Biggs J., Williams P., Hatton-Ellis T., 2007. A preliminary assessment of Important areas for Ponds (IPAs) in Wales, Pond Conservation, 79 p.
- Reymond A.S., 2009. Proposition d'une méthodologie pour l'identification des zones d'importance pour les étangs et les mares dans l'arc alpin. Travail de diplôme, Ecole d'ingénieurs de Lullier, Suisse. 60 p.