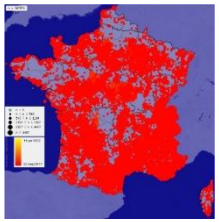

Improvement of evaluation of the extinction risks of the French wild orchids using citizen science's shared data

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Jean-Marie Nadeau and Daniel Prat
Gadpro (Orchisauvage) / SFO (Société Française d'Orchidophilie)

18th European Orchid Council Conference and Exhibition, Paris, March 23–25, 2018

Gadpro : Technical committee of web site Orchisauvage

Evaluation of the risks of extinction of French orchids

Orchids: First plant family assessed in France using IUCN Redlist criteria and categories

« La Liste rouge des espèces menacées en France » – Chapitre Orchidées de France métropolitaine UICN France, MNHN, FCBN & SFO (2010)

based on

« *Atlas des orchidées de France » (2010):*
421 325 records collected in 20 years up to 2008

+

involvement of the departemental « cartographers »
in a participative process

Some strenghts and some weaknesses

- Around 3 000 observers and involvement of the local coordinators
  - → good cover of the territory
  - → good information on the distribution
- But :
  - only location information
  - more than 20 years to publish an atlas
    - → big evolution of the taxonomy
    - → possible evolution of the populations
    - → engagement fatigue of the observers
- Consequences:

almost all taxa assessed with 21.3% of Data Deficient (DD)

A new *participative* period:

2014: Orchisauvage launching:

Participative website to collect and share orchid records

Web tools to facilitate participation

Easy access to information and consultation tools

Clear ethics: - to secure orchids location

- to respect observer's contributions and wishes

After 4 flowering seasons:

>> 420,000 records >> 42,000 pictures

> 2,500 participants >> 20,000 visitors

Additional information - on geographic and altitudinal distribution,

- on phenology,…

Does this new information help to update information on the risks of extinction?

For what?

- Helpul for IUCN redlisting
- Helpful to priorize conservation actions

Analysis of evolution of risks of extinction using IUCN criteria

- Available information

  > 400 000 citizen records (4 years) available through *Orchisauvage* in 2018 ⟷ > 400 000 records (> 20 years) Data collected by SFO used for IUCN national redlisting in 2009

- Criteria :
  - Population reduction
  - Geographic range
  - Small population size and decline
  - Very small or restricted population

- categories :
  - DD: Data Deficient
  - LC: Least Concern
  - NT: Near-Threatened
  - LC: Least Concern
  - VU: Vulnerable
  - EN: Endangered
  - CR: Critically Endangered
  - RE: Regionally Extinct

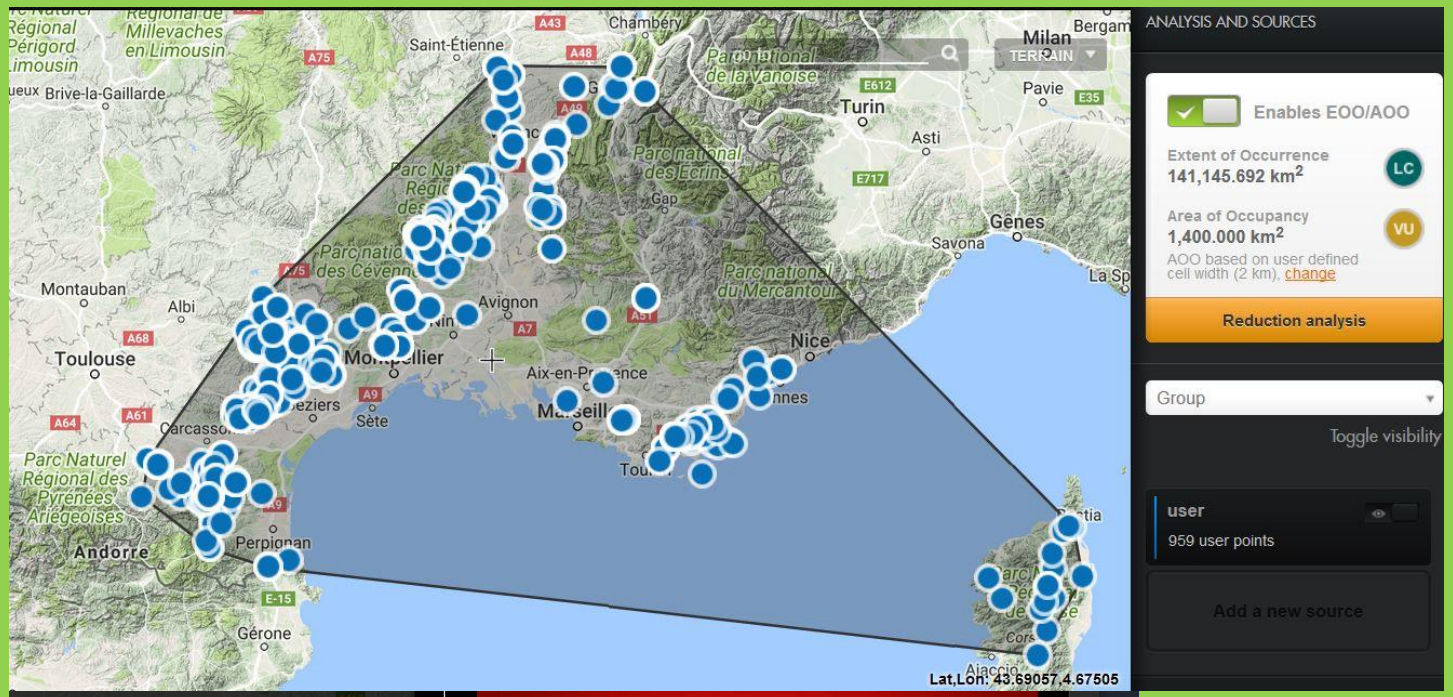
Analysis for the 100 most frequent species

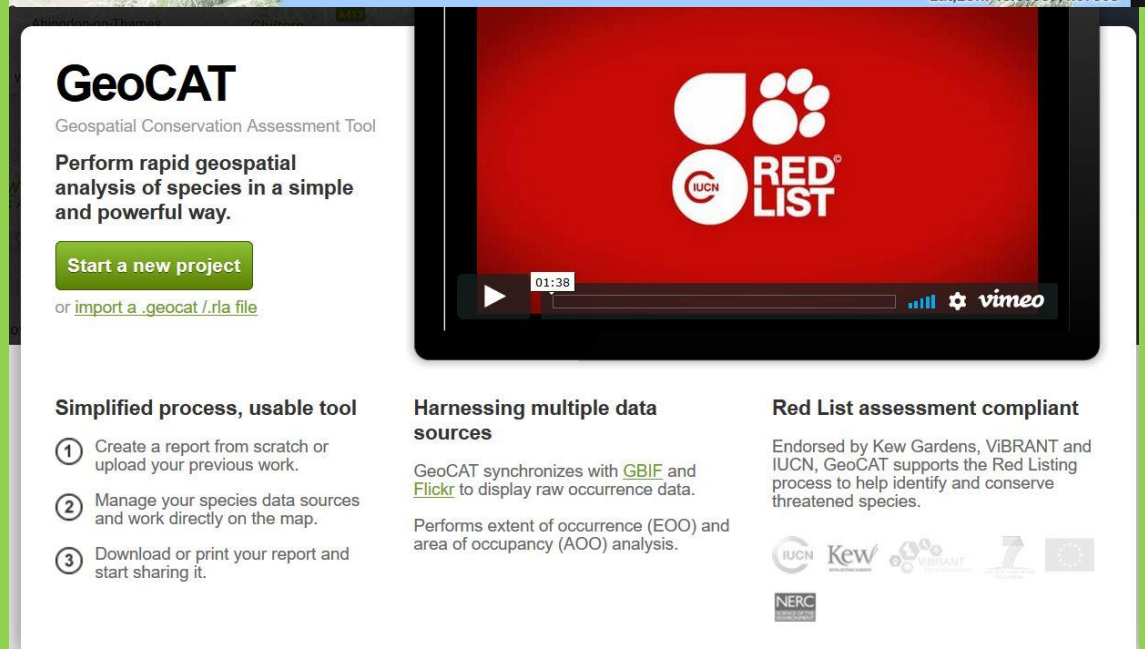
- Similar level of data
  - *good occurrence coverage*
- Increase of Extension of Occurrence (EOO) for most species
- Extension of the altidudinal distribution
- The on going records collection allows yet to inform on species evolution

Evolution of orchid species in %

Orchid species	***Increase***	***stable***	***Decrease***
EOO	62	22	16
Nb departements	45	5	50
Nb mailles (10 x 10 km²)	40	34	26
Maximum altitude	58	8	43

Extent of occurrence of *Orchis provincialis*



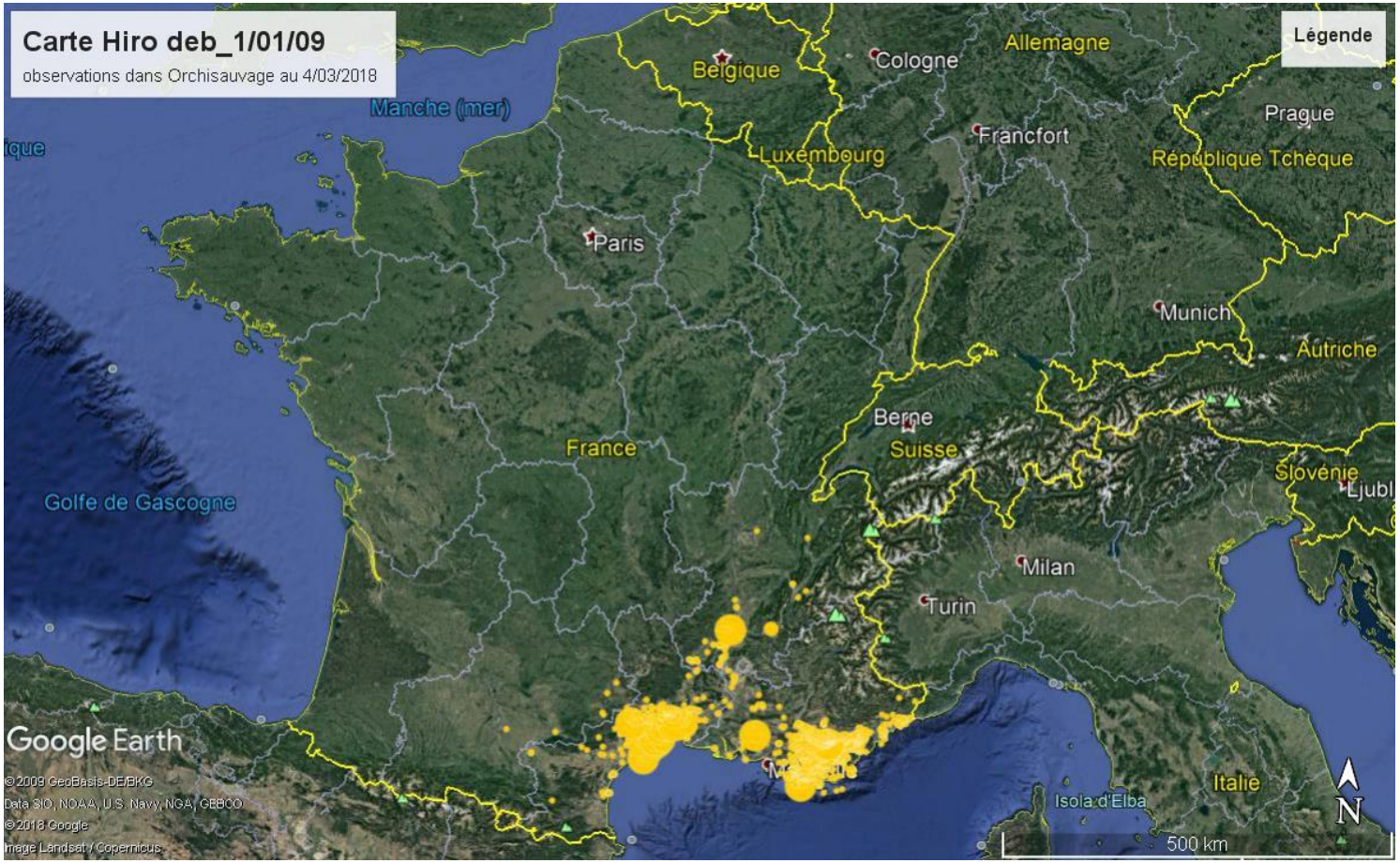


Ph. Feldmann / SFO Languedoc in http://www.ORCHISAUVAGE.fr/ (23 March 2018)

Himantoglossum robertianum evolution

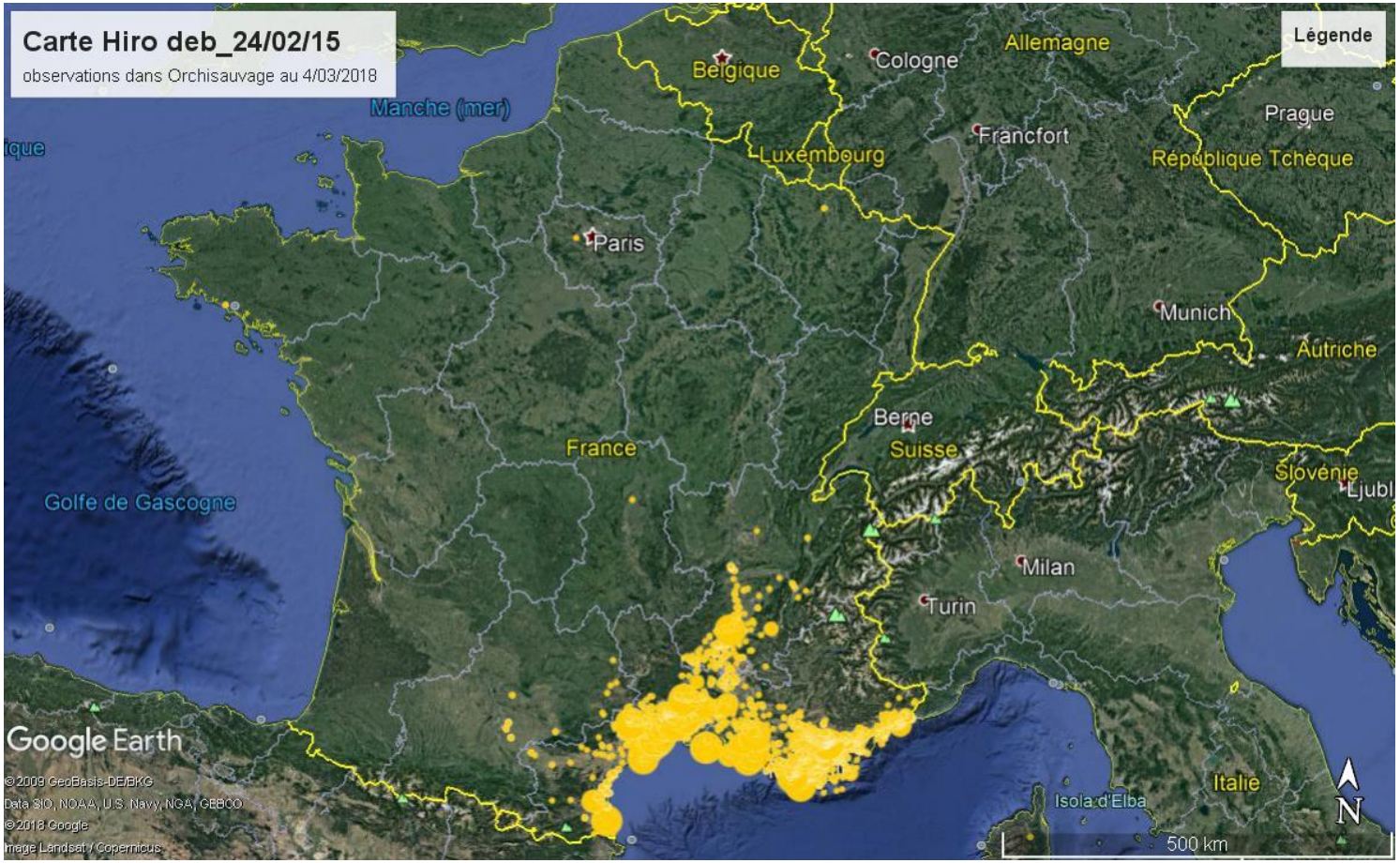
Records of *Himantoglossum robertianum*

Up to 2009



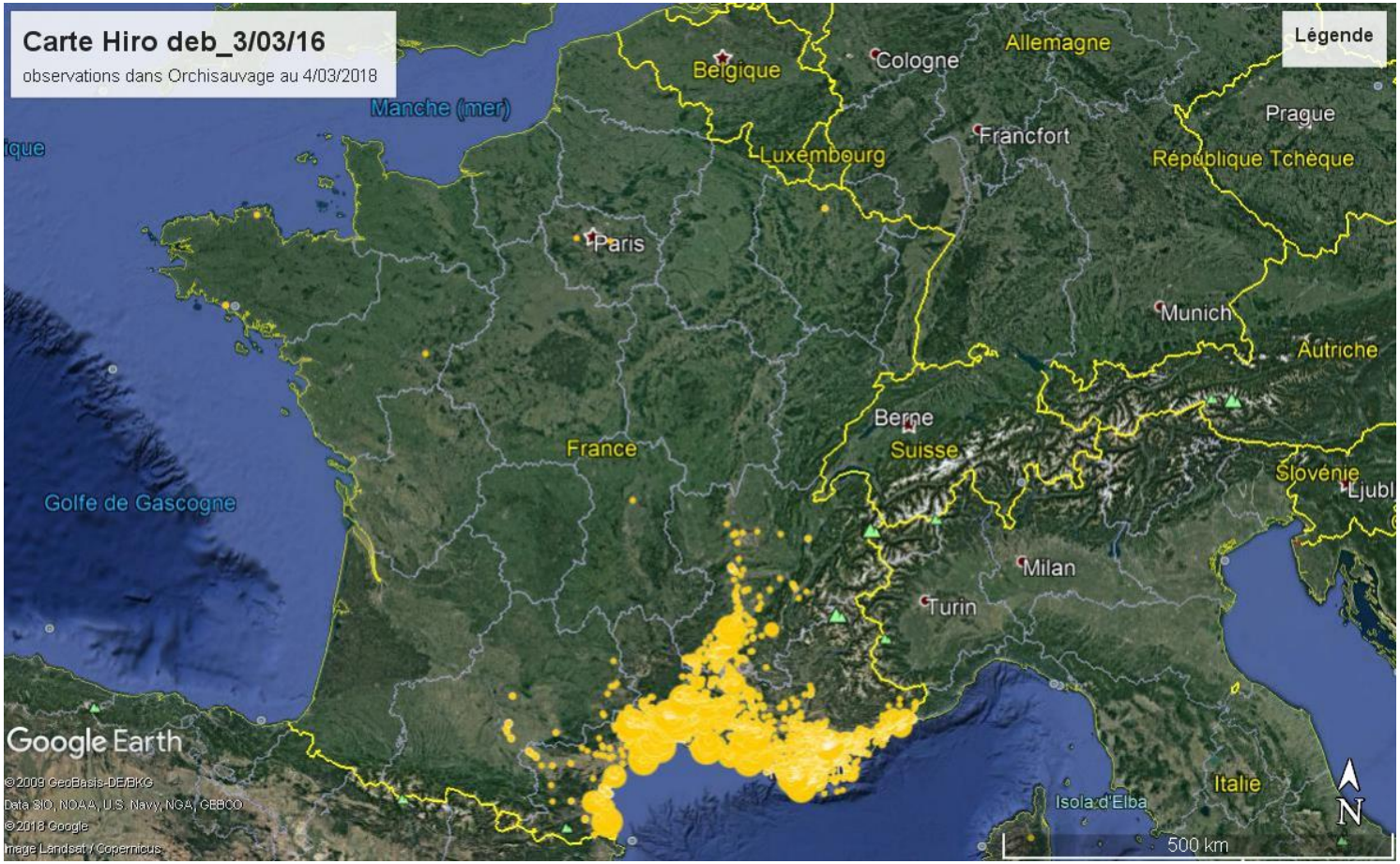
Records of *Himantoglossum robertianum*

2015



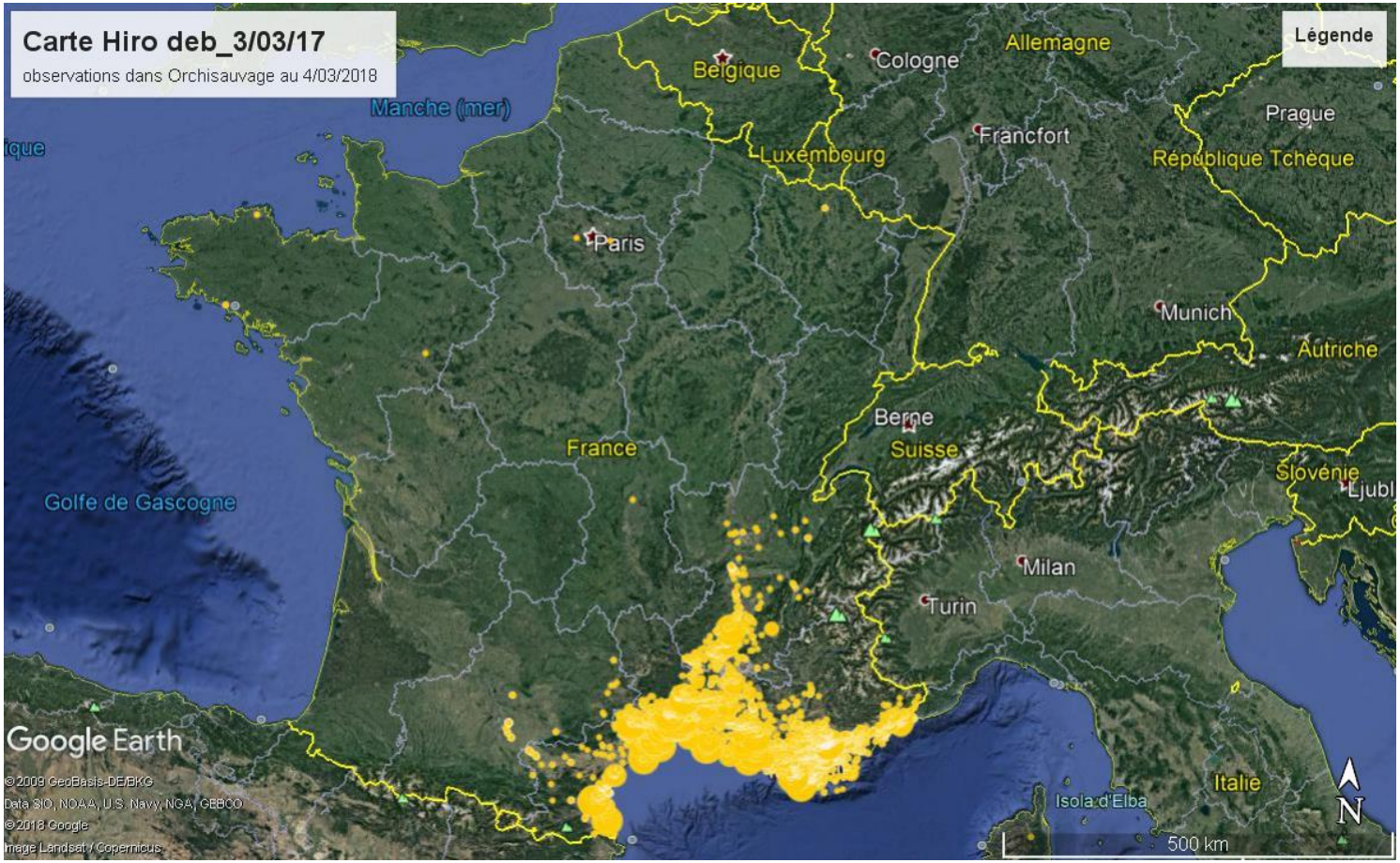
Records of *Himantoglossum robertianum*

2016



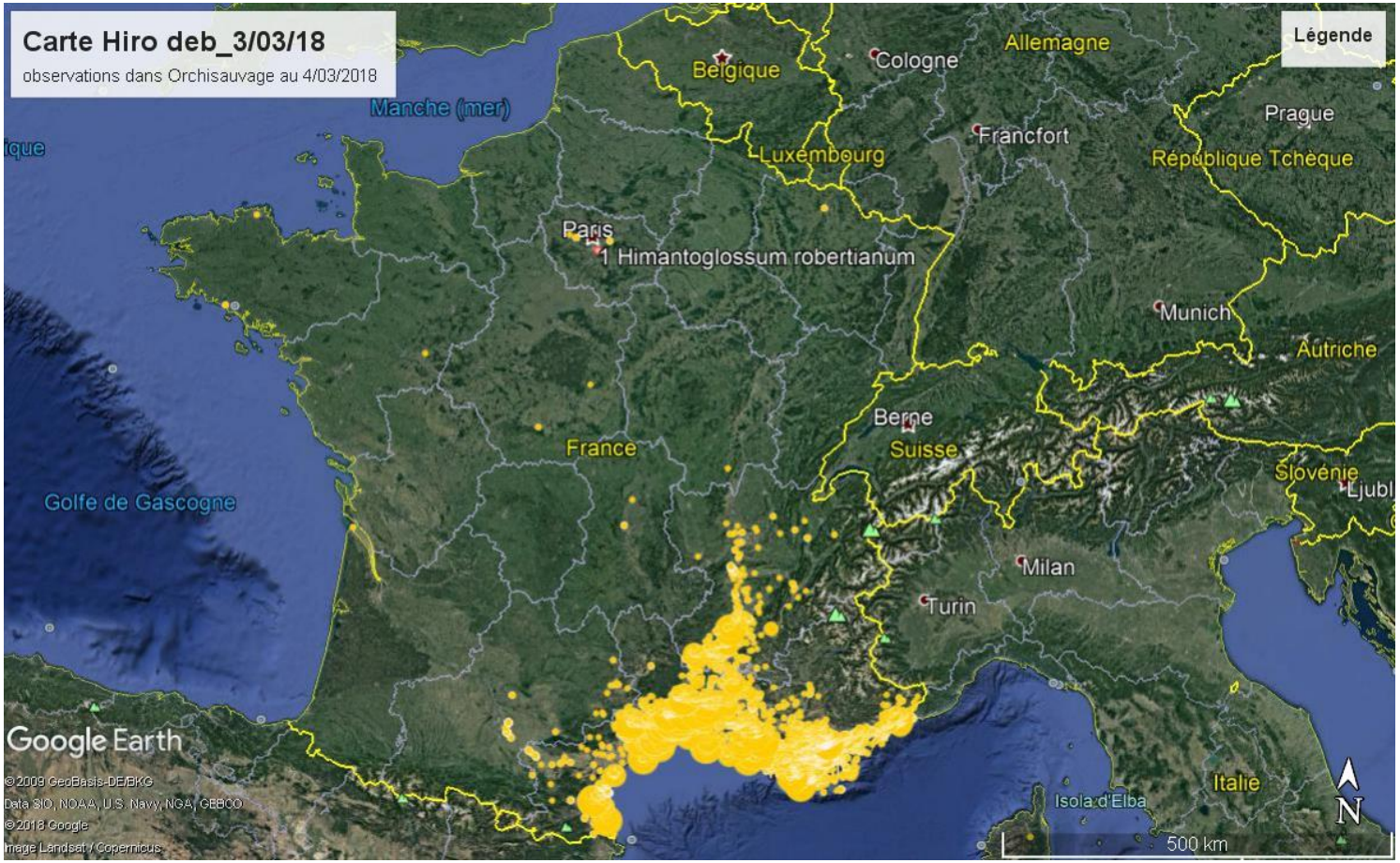
Records of *Himantoglossum robertianum*

2017



Records of *Himantoglossum robertianum*

2018



Improved useful information

- Better knowledge on species distribution
- Better knowledge on species abundance
- Better knowledge on the dynamics and evolution
- Better involvement of observers

→

SFO is yet able to make a proposal of updating orchid family national redlist in 2018

More species are in categories of threats

IUCN categories	2009	2018	evolution
DD	24%	8%	*-16%*
LC	37%	42%	+5%
NT	20%	22%	+2%
VU	16%	22%	+6%
EN	3%	5%	+2%
CR	0%	1%	+1%
RE	1,3%	0,7%	*-0,6%*
Threats without NT	20,3%	28,7%	+8,4%
Threats with NT	39%	50%	+11%

Ophrys provincialis

Epidendrum fibri

Ophrys philippi

Anacamptis longicornu

For the 145 species with enough information
2/3 of the DD species may yet be assigned to a new redlist IUCN categories:
LC: Least Concern; NT: Near Threatened; VU: Vulnerable

Impact of Orchisauvage on knowledge of threats assessed through risks of extinction

- More species proposed to be assigned in risks of extinction categories
  - *2009's DD contained mostly species at higher level of threat than average*
- The continuous validated data recorded in Orchisauvage gives a real-time display of the distribution of species in France.
- The quality of the records makes the data more suitable and adapted to give information not only on distribution but, for example, also on phenology and dynamics of evolution, resolving taxonomy debate,..
- This is a powerful tool for a better assessment of the species status

And yet ?

achieving evaluation of risks of extinction

with participative assessment by stakeholders

Maintain this important participation:

continuous response to the wishes of participants

clear ethics:

- security for the orchids and their environment
- free and informed consent for use of their data
- data shared for knowledge and conservation
- feedback to the stakeholders

Thank you

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