

Some structured citizen sciences datasets from Vigie-Nature that might share issues with opportunistic dataset

Grégoire Loïs, Vigie-Nature, CESCO, MNHN, OFB, ARB-IDF

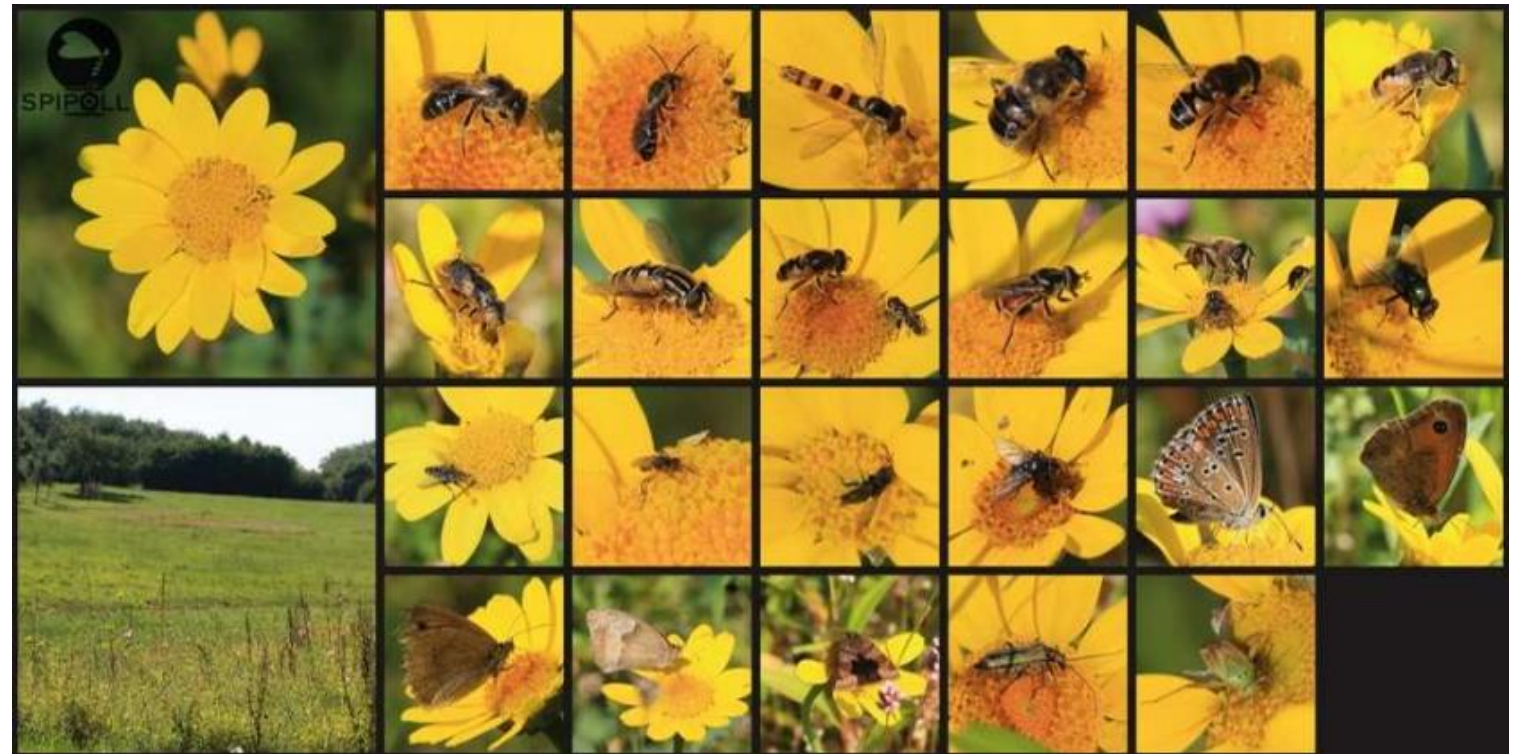
Pollinators picture based monitoring program : SPIPOLL (Suivi Photographique des Insectes Pollinisateurs)



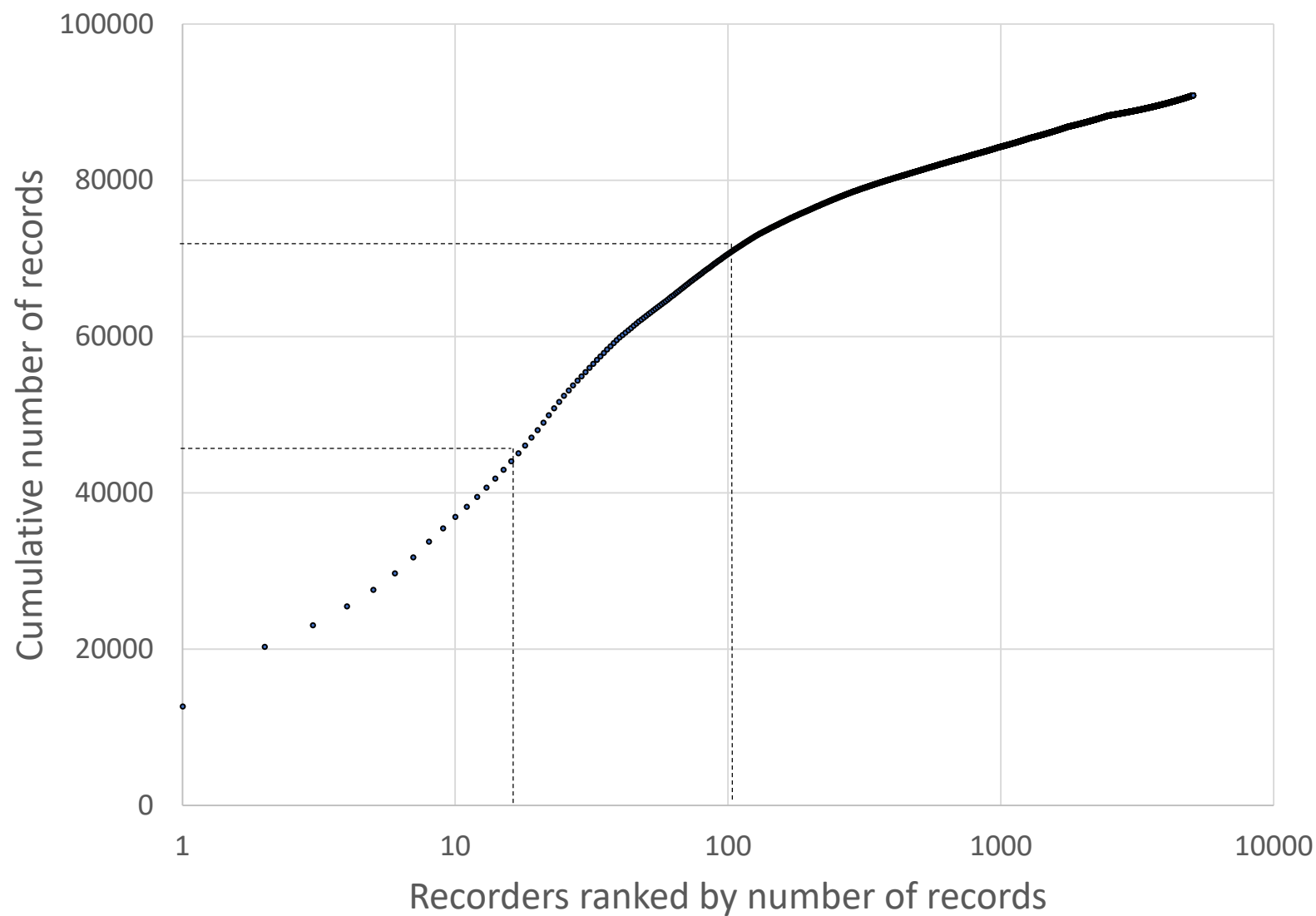
Free choice of place, date, flowering plant

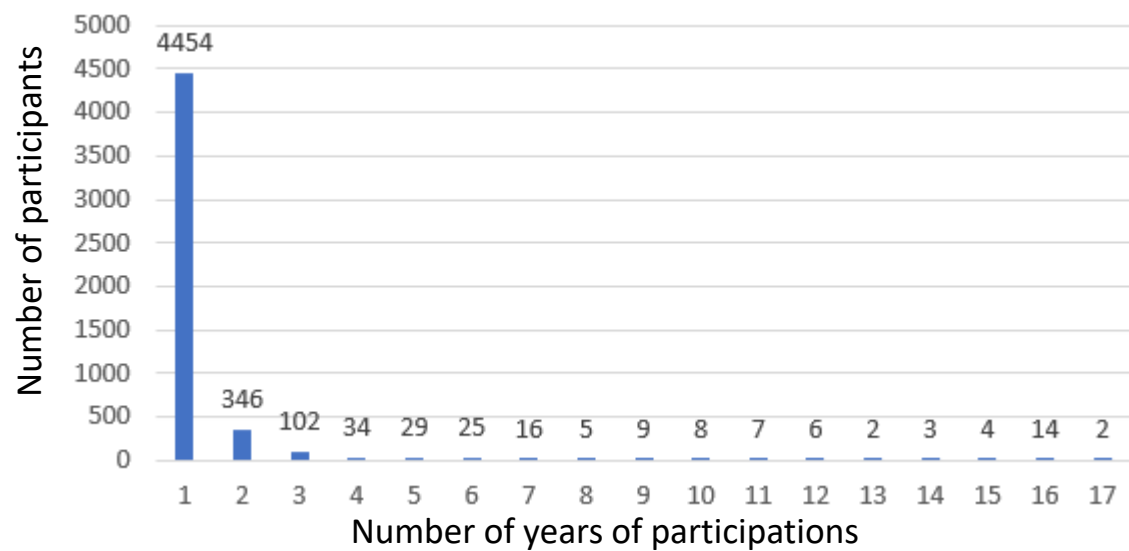
Effort is set to 20' during which any living organism frequenting the flower is pictured

90 000 participations, 800 000 pictures of plant/insect interactions

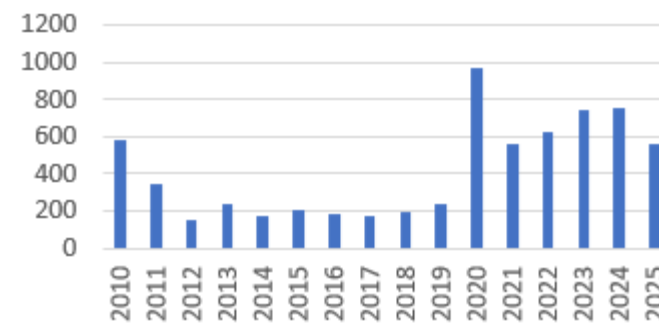


17 recorders provide 50% of records, 117=>80%

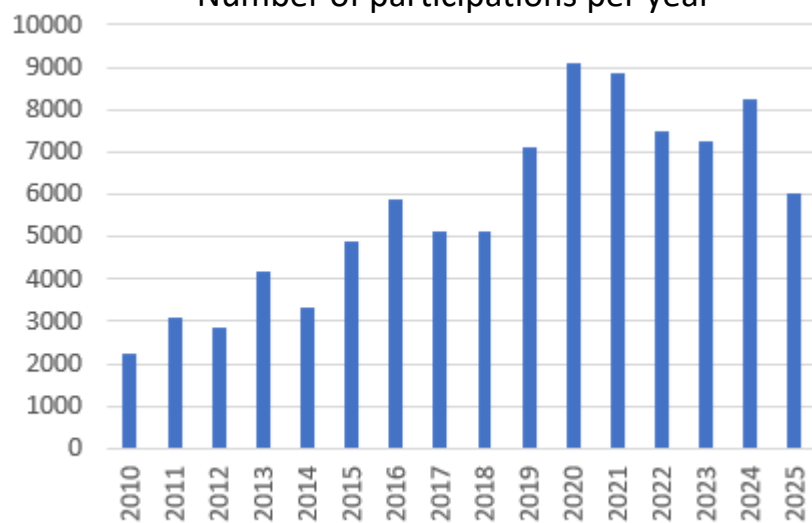




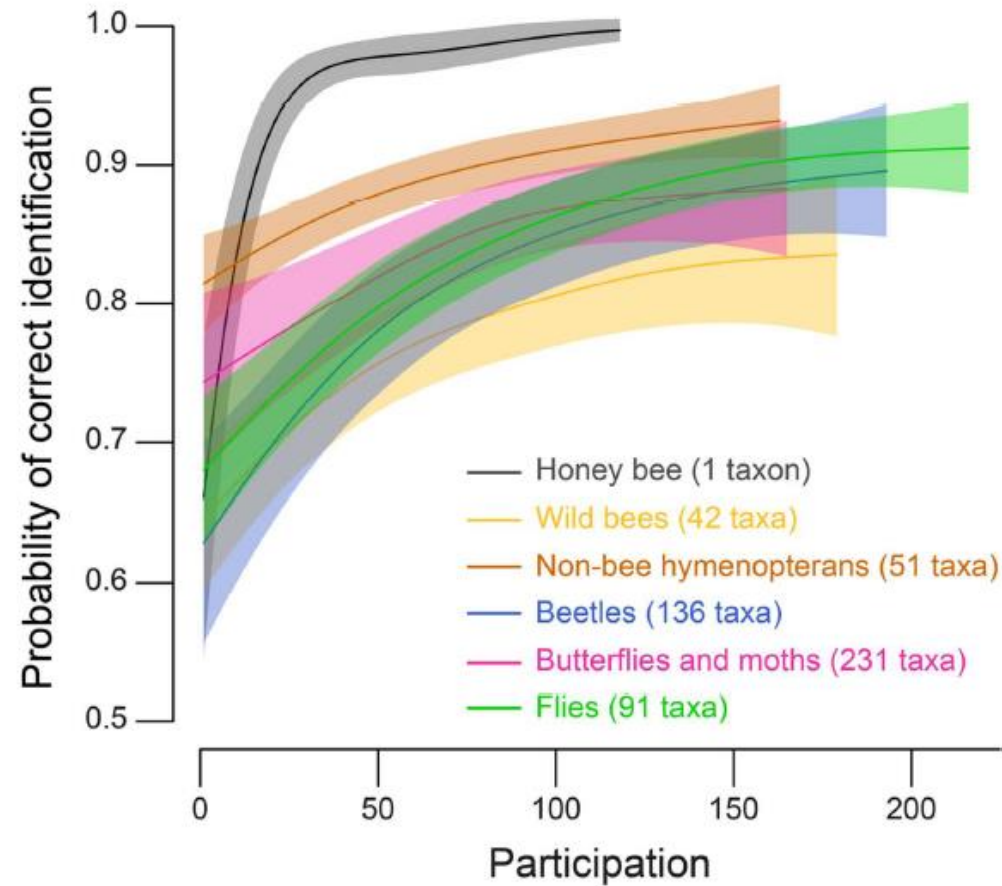
Number participants per year



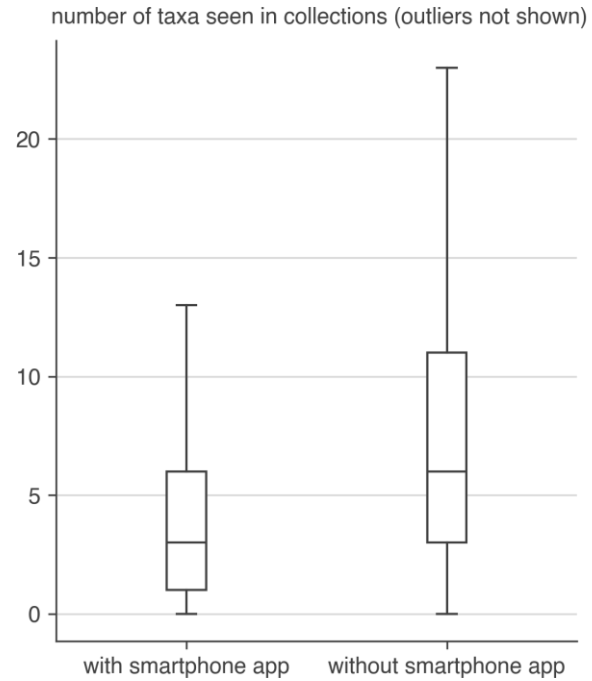
Number of participations per year



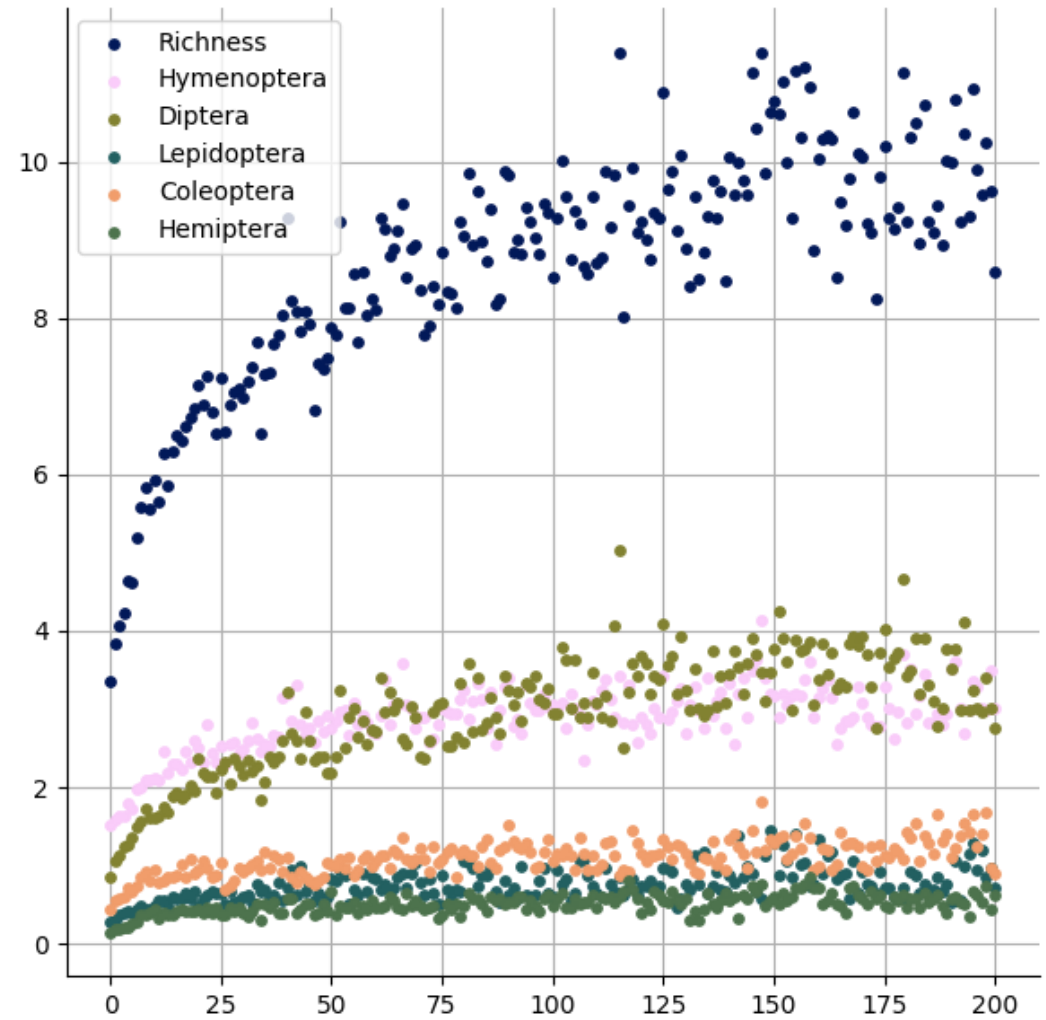
Effect on participants



Participants' effects

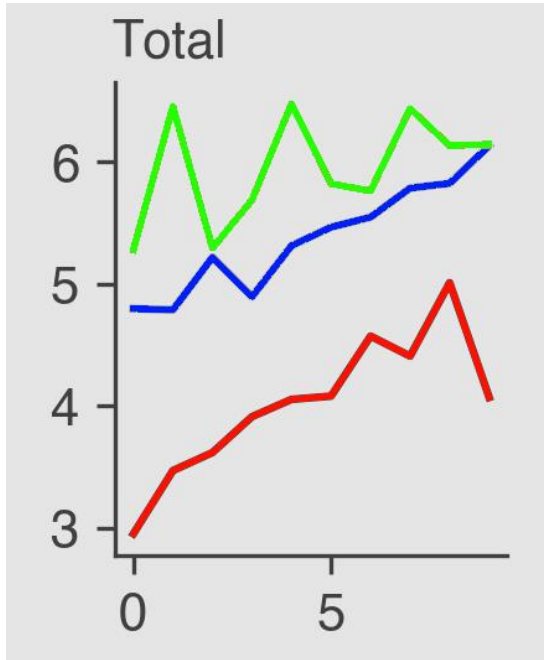


Equipment used



User experience

Participants' effects

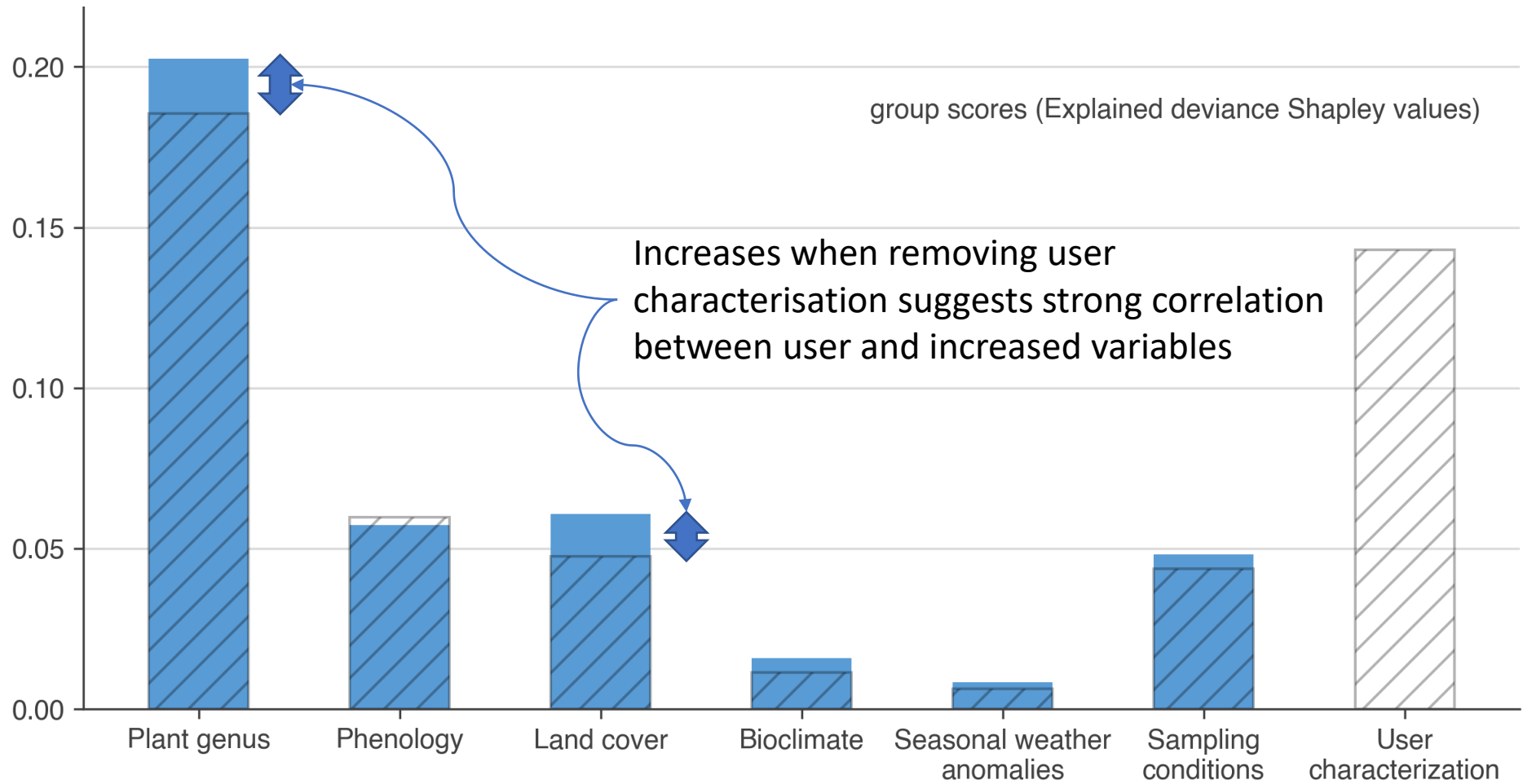


Diversity in the first 10 participations

Participants with total number of collections >50 & <200
Participants with total number of collections >15 & <51
Participants with total number of collections <16

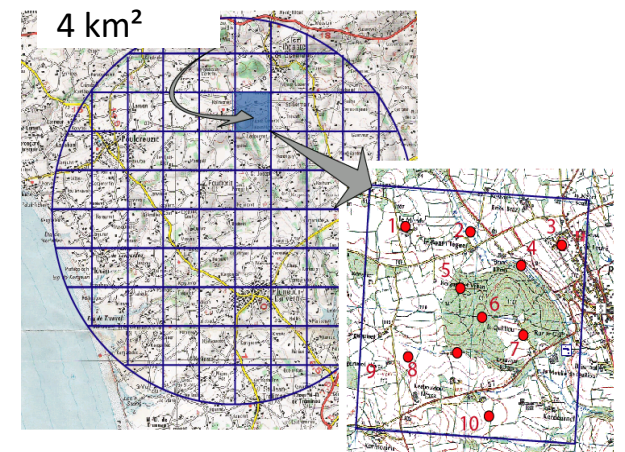
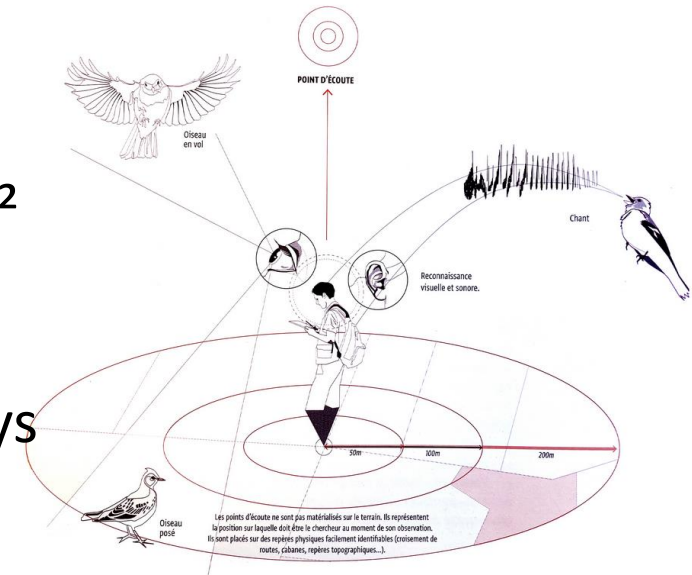
Participants' characteristics appears very soon in participation history !!!

Breakdown of richness variation according to different groups of variables, taking into account correlations between groups (richness \approx camera_type + non linear total number of participations + non linear total number of previous participations)
Hatched : taking into account user characterisation.
Blue : removing use characterisation



French Breeding Bird Survey : STOC (Suivi Temporel des Oiseaux Communs)

- 4km² square randomised among 10 km radius
- 10 points distributed to represent landscapes within the 4km² distant of 300m minimum from each other
- 3 samples during spring (1-30 March, 1st April-8th May, 9th May-15th June) repeated each year at same dates +/- 3 days
- 10 point counts of 5 minutes starting 30' after dawn
- All birds heard or seen counted, binoculars only to confirm ID
- Distance classes 0-25m, 25-100m, 100-200m, >200m, seen in flight
- Habitats, weather conditions described
- Started in 1989, major changes in 2000, x10⁶ data



Learning effect ?

Bird Study (2009) **56**, 253–258



Method learning caused a first-time observer effect in a newly started breeding bird survey

FREDERIC JIGUET*

UMR 5173 MNHN-CNRS-UPMC 'Conservation des Espèces, Restauration et Suivi des Populations', CP 51,
55 rue Buffon, 75005 Paris, France

Capsule A first-time observer effect in the new French breeding bird survey (BBS) was found to result from new observers learning how to use the point count method on randomly selected sites.

Aims To estimate the first-year effect in a newly started BBS, to look for correlates and test for a temporal trend in learning.

Methods Trends of 105 species were estimated using data from 2001–2007 obtained by 1100 observers conducting point counts over 1535 randomly selected squares. I estimated the average increase in detected numbers between the first and all subsequent years of survey at a site.

Results Observers counted 4.3% more birds in subsequent years than during the initial year of survey. This first-year effect decreased from 2001 to 2007 (by an average of 2% per year). It was not related to most variables known to influence species detection probability. Only species with songs of lower sound frequencies (ranging from 0.5 to 8 kHz here) displayed a greater increase in locally detected numbers.

Conclusion The detected first-year effect was the result of method learning by new observers who had not previously conducted point counts or visited randomly selected sites. The learning effect was larger for species with songs of lower sound frequency which are harder to hear during the dawn chorus.



Trying too hard effect ?

Heard from a teacher in front of 30 students :

“To ensure that we don’t miss large members of thrushes’ family that stop singing early in the morning, I alternate the points between years, some starting from point number 1, others from point number 10”

Problem :

Very likely undetected during data curation

Might be one idea to ‘improve’ data collection among many more that remain unknown

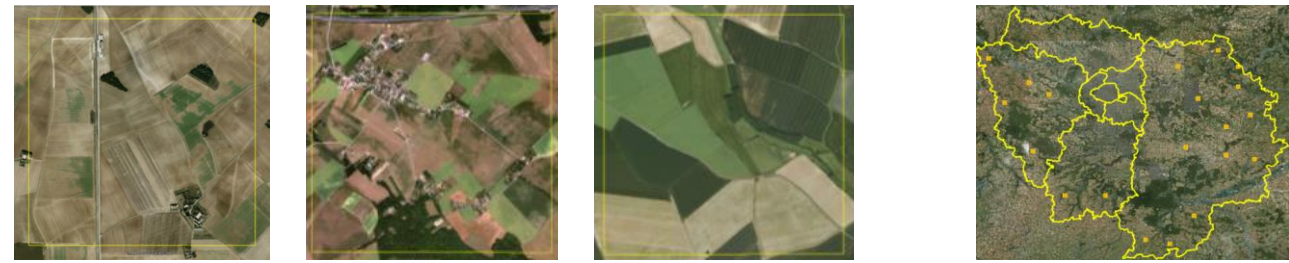
Probable cause :

Lack of statistical culture

Too much naturalist culture : thinking that what’s reported must catch the reality (?!) of breeding birds populations

Skills effects ?

In 2010, a field study targeting open fields in Ile-de-France was conducted with 3 birders of various skills. 19 2x2 km² sampled 2 times with 134 points in open fields out of 190



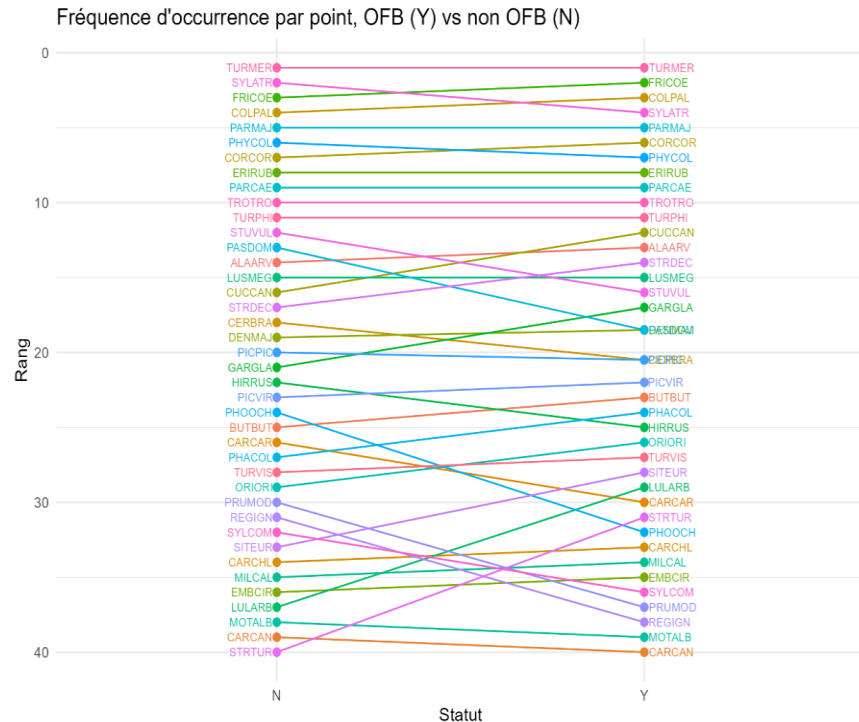
All birders are ringers, ages are 2x29 + 1 x 41, no glasses, hearing acuity considered average, Birder 2 is a crazy twitcher very likely more skilled in birdwatching

	Birder 1	Birder 2	Birder 3
Number of points in open fields	42/50	47/90	33/50
Diversity in open fields points	12 +/-1	13 +/-1	11 +/-1
Abundance in open fields points	38 +/-4	37 +/-4	29 +/-2
Abundance in open fields points <i>when abundances trimmed at 10</i>	32 +/-2	35 +/-3	27 +/-1

Overconfidence ?

Since 2023, civil servants from Office Français de la Biodiversité are pushed to engage in STOC while most of them followed a similar sampling program targeting game species.

Sampled squares (3 x 10 x 5' points)	2021	2022	2023	2024
Civil servants	3	9	218	263
Volunteers (birders)	1187	1283	1165	1200



Species oversampled by civil servants (or under sampled by birders) :

14 species of which :

7 are huntable

1 is a raptor

6 have characteristic and loud calls or songs

4 are small and common passerines

Average weight, s.d. = 280g, 360g

Species oversampled by birders (or under sampled by civil servants) :

14 species of which :

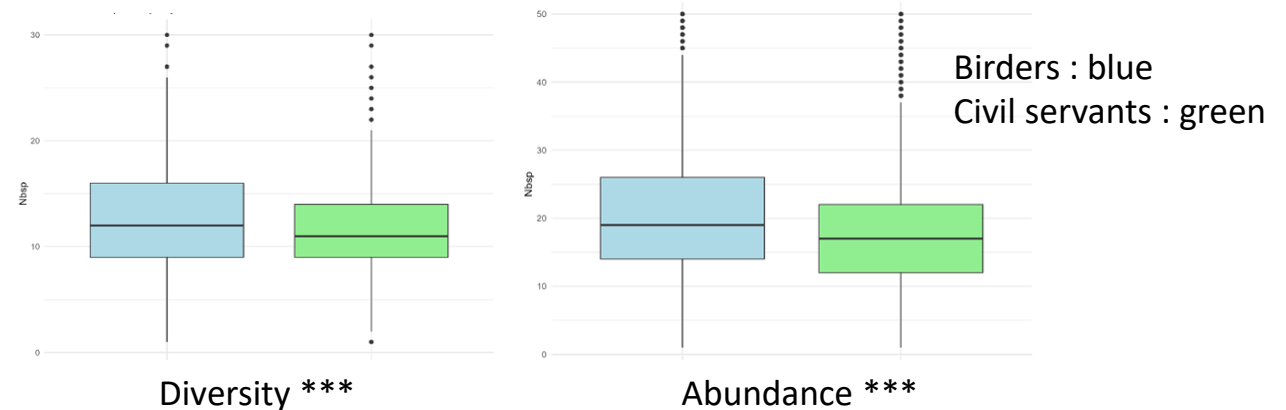
1 is huntable

0 is a raptor

0 have characteristic and loud calls or songs

13 are small and common passerines

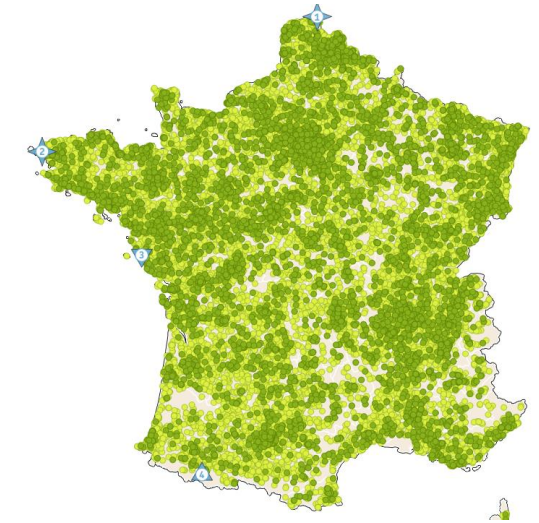
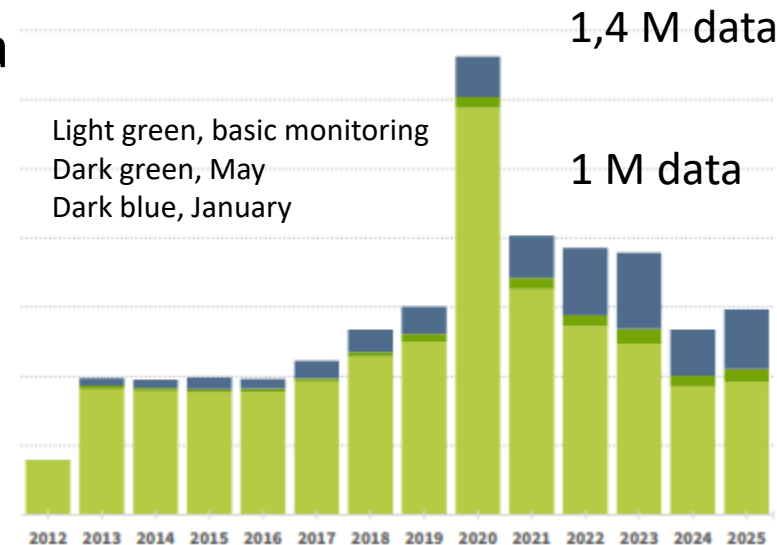
Average weight, s.d. = 30g, 50g



French Garden Bird Watch : Oiseaux des Jardins

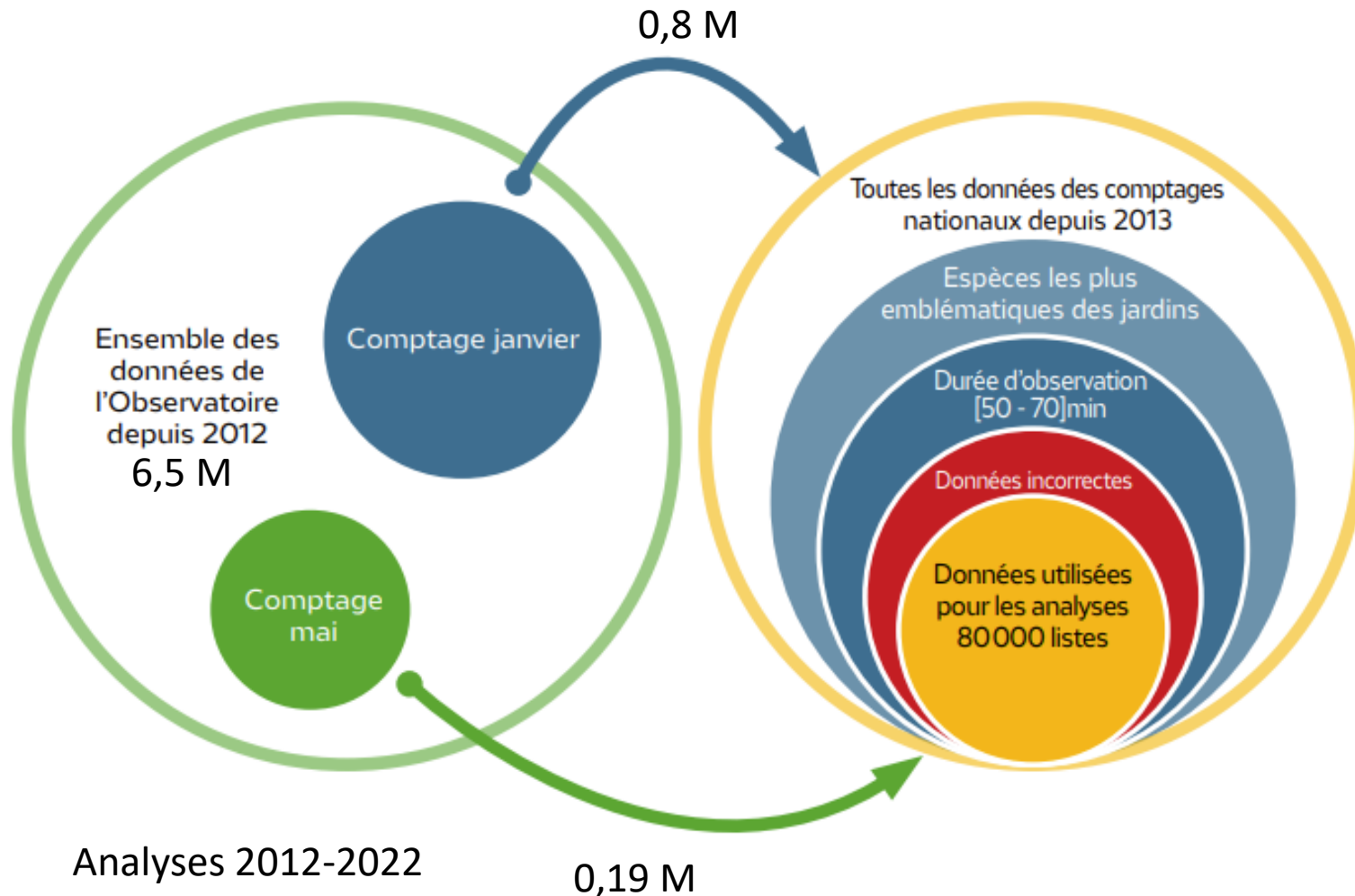
- Basic monitoring (all year long)
 - Free choice for dates, gardens, frequency, sampling effort (must be 10' at min and must be reported)
 - Maximum number of birds seen concomitantly reported
 - Used to be a closed list of species but now open
 - All birds must be reported

- Special weekend' counts
 - Last weekends of January a
 - 1 hour sampling



Protocol burdens

- Lack of sampling design + lack of standardisation + lack of research time forbid use of most of the data except special weekend' counts as effort is standardised



NB : Thomas Duchesnes from Natagora runs successfully Bayesian dynamic site occupancy models on similar checklists of detection/non detection events from Belgian garden bird watch. Variables such as the length of the co-observed species list, as well as the date and the observer's experience make it possible to estimate a detection / reporting probability for the thousands of implemented events (unpublished yet).