

# Why and how to gamify trees inventories. The Albiziapp Experimentation

ISPM Conference 2019 Espoo Finland: Let the people map

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ReVeRIES : <http://reveries-project.fr/>

June 19th, 2019



Projet  
ANR-15-CE38-0004-01

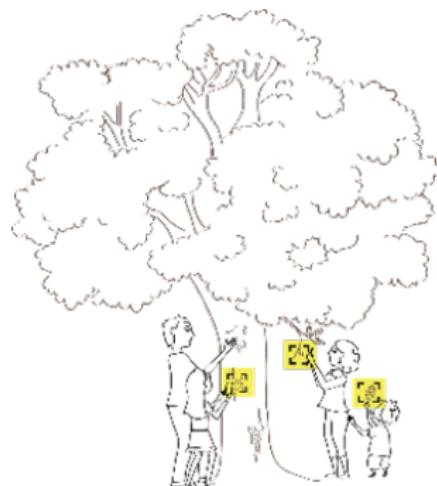


# Overview

New trends in naturalist inventories

Trees in Open Street Map : benefits and drawbacks

Is gamification a solution ?



# New trends in naturalist inventories

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## New trends of naturalist inventories

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- More and more natural inventories and surveys but
- Stable (lowering ?) funding from State (at least in France)
- Increase of global education level
- New tools (smartphone / web 2.0 / cloud) from new actors (GAFAM)
- From mainly experts to amateurs
- From portals ("data warehouse") to applications
  - INPN : National Inventory of Natural Heritage
  - iNaturalist

## Portal example : 2002 French INPN

<https://inpn.mnhn.fr/accueil/index>



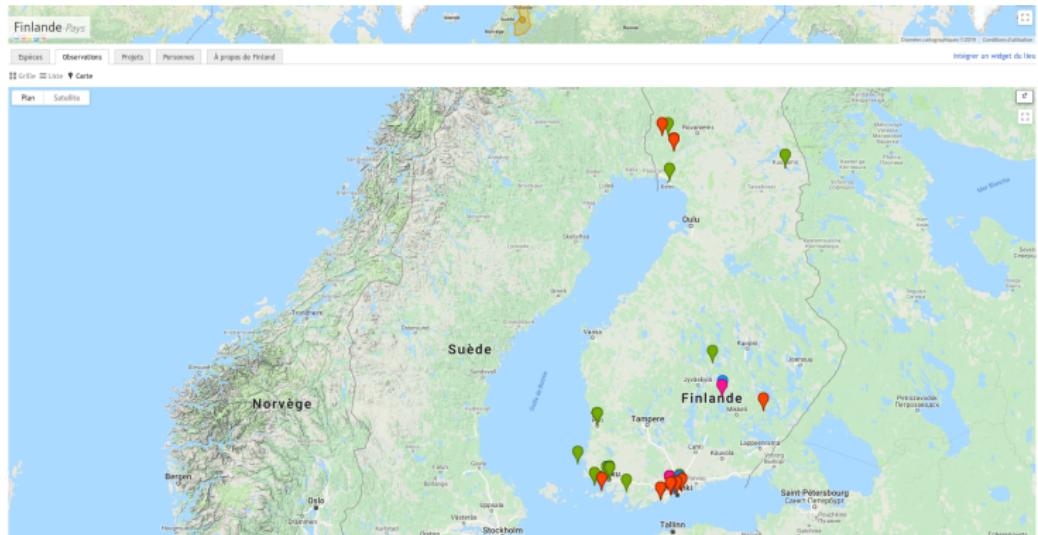
- 14 programs : from "Garden Biodiversity Observatory (OBJ)" to "Report Sightings of Terrestrial Platyhelminthes"
- What Contributors get in return : newsletters, performance ranking, access to their personal data, and sometimes the whole DB



Process relies on formal protocols to collect data

# Plateform example : 2008 iNaturalist

<https://www.inaturalist.org/>



Finland : 105 contributors, 12571 observations

Worldwide : 600 000 contributors, 21 820 000 observations

Process relies on collecting a critical volume of data

# New tools for plants identifications

Dichotomous keys :

- Déclic botanique<sup>1</sup>
- Clés de forêt (ONF)<sup>2</sup>

Automatic or semi-automatic  
image analysis



(only iOS)

Usually, they also collect geospatial data

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1. <https://www.kloranebotanical.foundation/fr/declic-botanique>

2. [http://www.onf.fr/activites\\_nature/++oid++13ee/@display\\_advise.html](http://www.onf.fr/activites_nature/++oid++13ee/@display_advise.html)

## **Trees in Open Street Map : benefits and drawbacks**

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## Unique aspects of trees as at once natural and cultural objects

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- Easy to map if isolated (POI)
- But diversity of spatial patterns : wood, hedge, urban tree row
- Static and permanent : if someone comes back, the tree can still be here
- Habitat of other species
- Economic resource (forestry, wood burning,.. )
- Unique aspects of trees as at once natural and cultural objects
- "Baby seal" of the plant word
- People can interact with them on daily basis
- Without knowing their botanic or vernacular names

# New considerations / social needs for tree inventory

- Landscape and ecology : agroforestry / greener cities / green infrastructure
- Health : allergens / Cooling down cities
- Indicators : tree as climate change indicator ("phenoclim project")



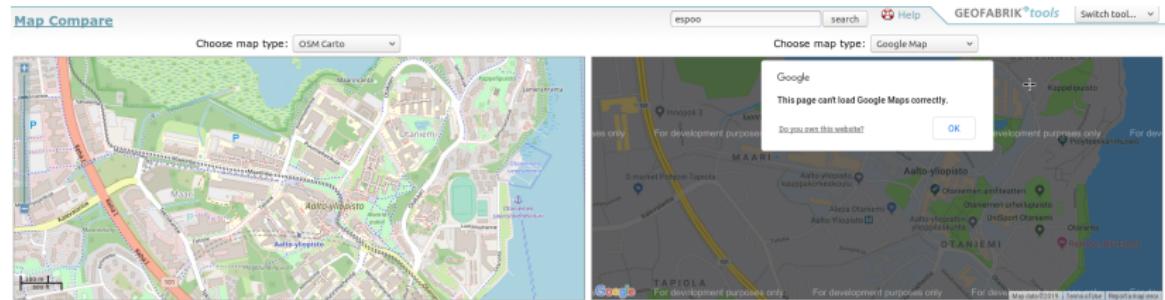
source : Treepedia<sup>3</sup>

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3. <http://senseable.mit.edu/treepedia>

# Open Street Map (OSM) : key points

OSM : geospatial data base, "community of communities", map the all world, ODbL licence, "Open google map", best VGI "success"



Software ecosystem : API, tiles servers, web mapping, desktop mapping, etc ..

# Aalto University, Espoo, Finland



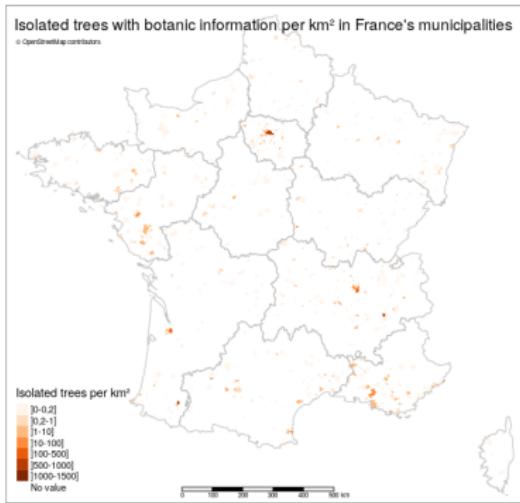
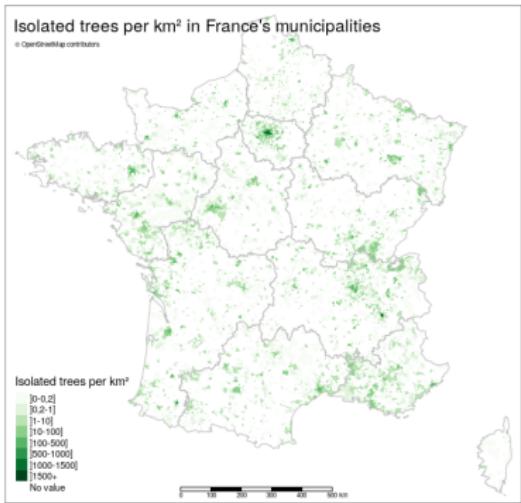
## The best tools to foster participation

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- World Wide project
- Platform
- Collaborative infrastructure : tools, feedback, data access, governance
- Support of OSM locals groups

**But some limitations exist !**

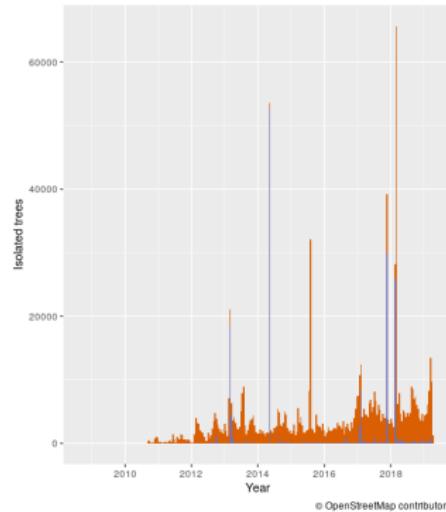
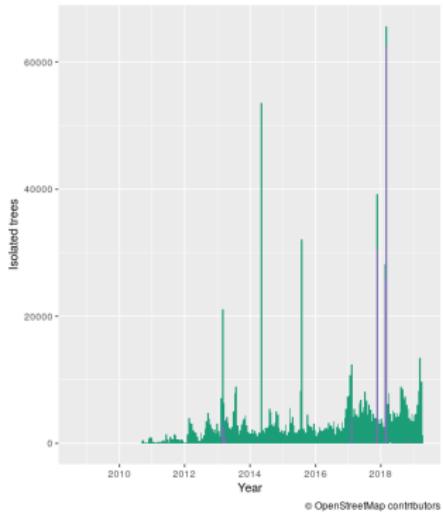
# OSM : 900 000 isolated trees in France



Urbain area : 5,5 trees/km<sup>2</sup>  
Rural area : 1,29 trees/km<sup>2</sup>

0,30 trees/km<sup>2</sup>  
0,004 trees/km<sup>2</sup>

# OSM : Hybrid professional DB with amateur contributions



**Is gamification a solution ?**

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# "Albiziapp" a dedicated web application for smartphone / PC

<https://albiziapp.reveries-project.fr/#albiziapp>

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Do game mechanics encourage contributions to inventories and help users learn botany ?

Development of :

- Simplified user interface
- Direct interaction with OSM DB
- Botanic tools
- Game functionalities :
  - Missions with Points, Trophies, Badges
  - Depending on identification accuracy, number, speed and diversity of observations

# Albiziapp screen



# Observation screen

[Retour](#)

Espèce : Acer campestre

Genre : Acer

Nom commun : Érable champêtre

Degré de confiance de l'observateur : Confiant

Dernière modification par : tjoliveau



[Retour](#)



Vous pouvez modifier le relevé ou bien confirmer que les informations sont correctes

[Modifier](#) [Confirmer](#) [Voir](#)

Si aucun arbre n'est présent, vous pouvez tagger ce relevé douteux



Supprimer le relevé, cette opération est définitive!

[Supprimer](#)

Historique

# Albiziapp and OSM

- Albiziapp is open source<sup>4</sup>
- All the data analysis/visualisations can be reproduced/verified by the OSM community<sup>5</sup>
- Documented in the OSM wiki<sup>6</sup>
- Participation in OSM's locals groups

First monitored experiment : June 29th in Saint-Etienne, France

Goal : understanding the impact of gamification on the way people inventory trees

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4. <https://github.com/REVERIES-project>

5. <https://github.com/REVERIES-project/arbresosm>

6. <https://wiki.openstreetmap.org/wiki/User:Defuneste>

# Thanks for your attention !



<https://defuneste.github.io/Albiziapp-blog/>



<https://www.facebook.com/albiziapp.reveries>

