

# 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/>

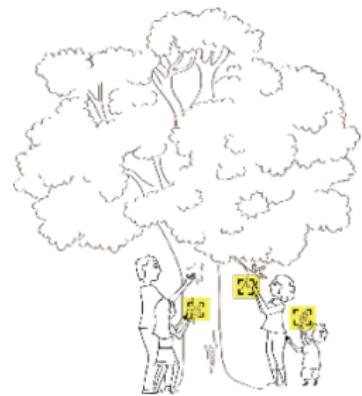
June 19th, 2019



# Overview

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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>



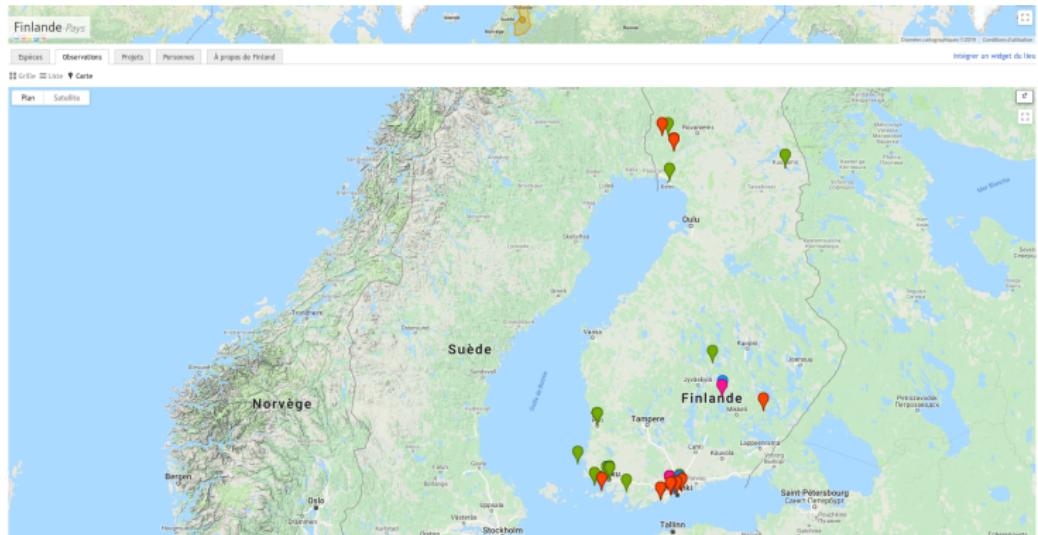
- 14 programs : from "Garden Biodiversity Observatory (OBJ)" to "Report Sightings of Terrestrial Platyhelminthes"
- What Contributors get in return : newsletters, performance ranking, access to their personal data, and sometimes the whole DB

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")

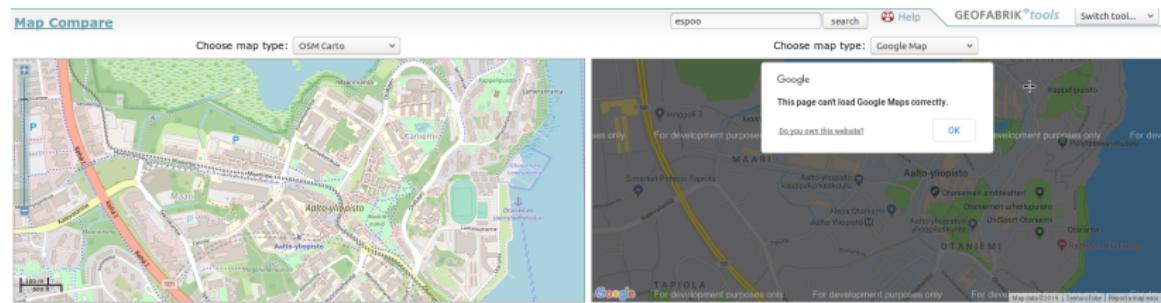


source : Treepedia<sup>3</sup>

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



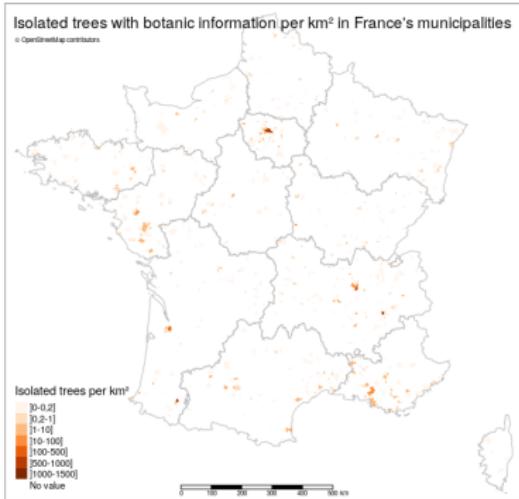
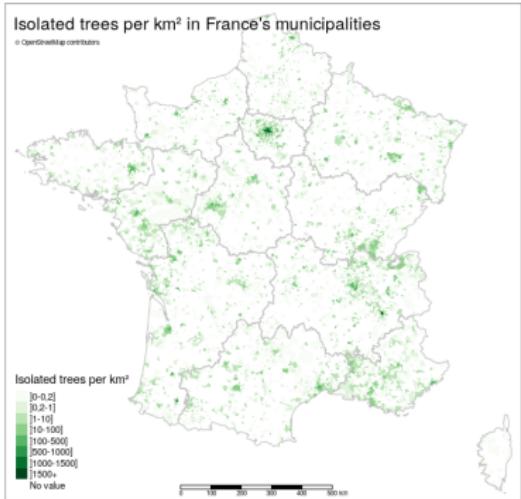
## The best tools to foster participation

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

**But some limitations exist !**

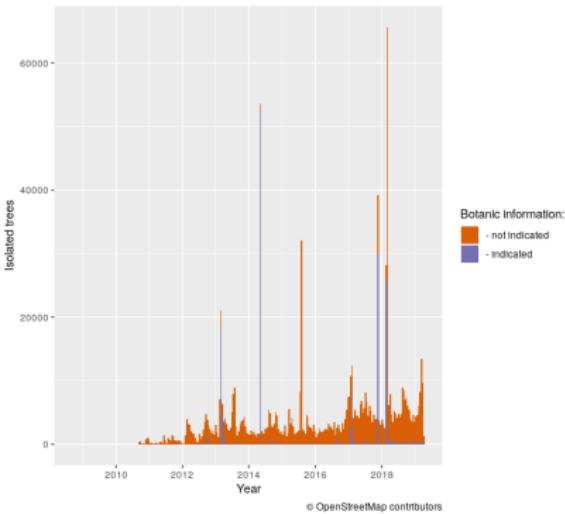
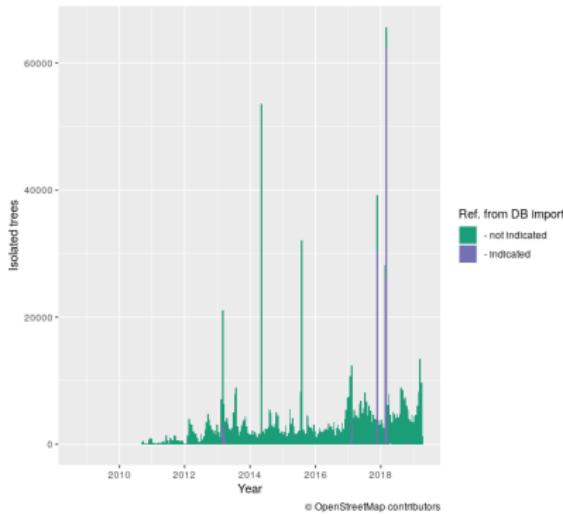
# OSM : 900 000 isolated trees in France



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>

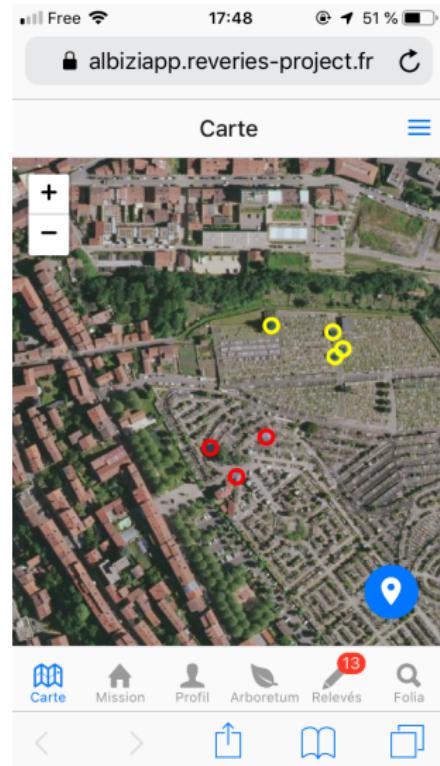
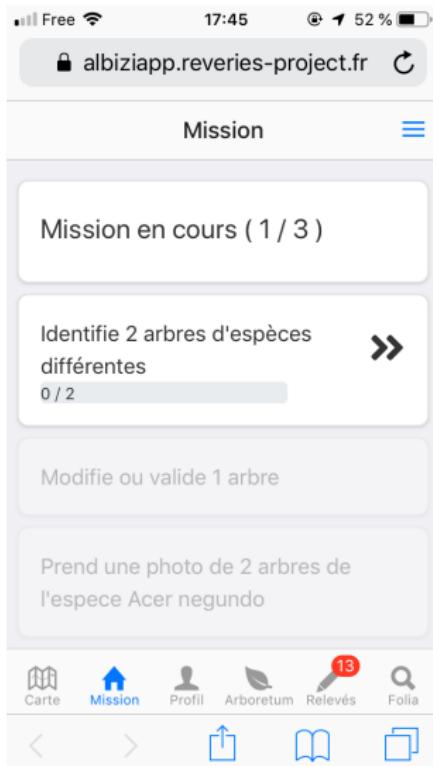
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Do game mechanics encourage contributions to inventories and help users learn botany ?

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

Goals : 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>