

# Citizen science in the LIFE RIPARIAS and VespaWatch projects

How to aggregate data from different sources to allow for an improved management of invasive alien species

Lien Reyserhove



**Flanders**  
State of the Art

RESEARCH INSTITUTE  
NATURE AND FOREST



# EU IAS REGULATION

Invasive alien species (IAS) are alien species whose introduction and spread cause **serious negative environmental consequences**.

The **European Union (EU)** introduced a legislation to establish a coordinated EU-wide framework for actions to prevent, minimise and mitigate the adverse impact of IAS

## Priority approaches:

- prevention
- early warning and rapid response
- management of widespread species



# EU IAS REGULATION

Invasive alien species  
cause serious

production and spread

The European  
wide framework  
of IAS

we need data

coordinated EU-  
wide impact

Priority approaches

- prevention
- early warning and rapid response
- management of widespread species



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**Western honey bee**  
*Apis mellifera*



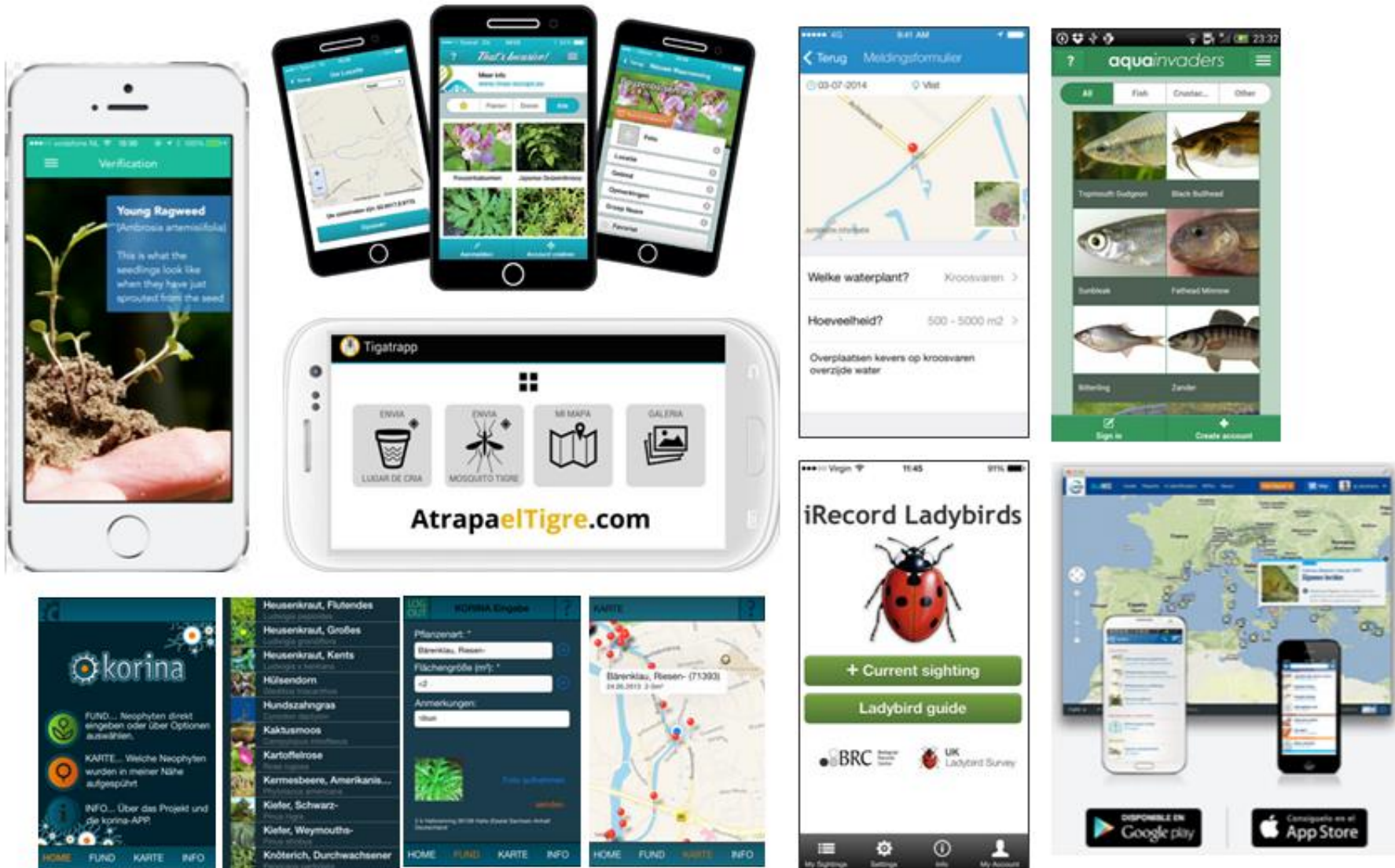
**Monk parakeet**  
*Myiopsitta monachus*

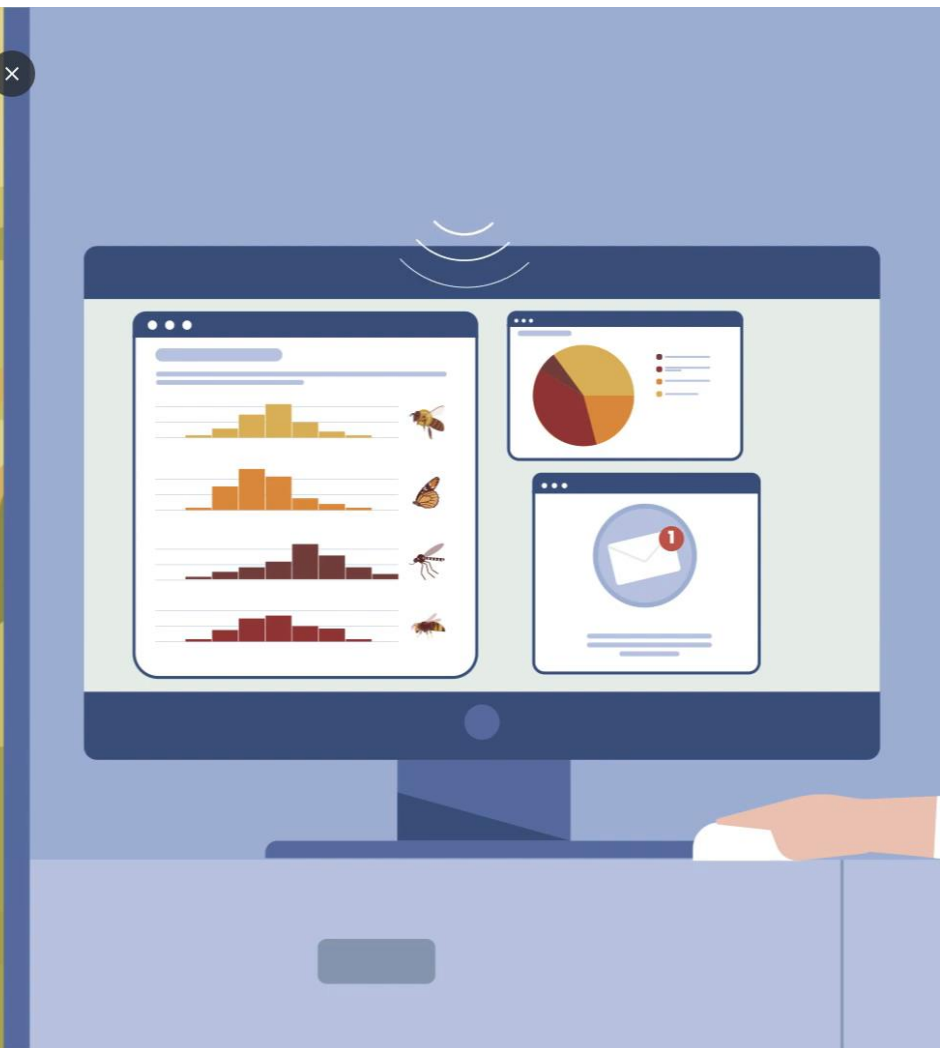
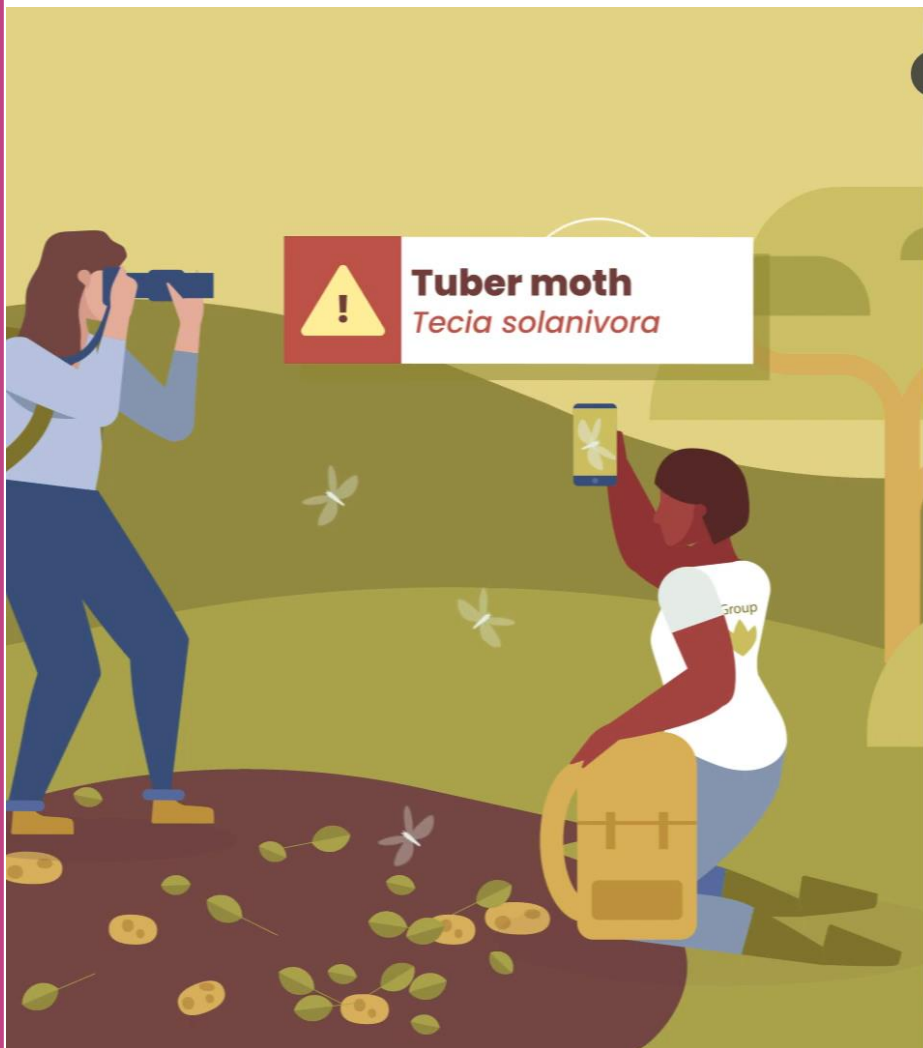


**European Rabbit**  
*Oryctolagus cuniculus*



# IAS dedicated apps in Europe





# The power of open & FAIR data



Management of Biological Invasions (2015) Volume 6, Issue 2: 119-125  
doi: <http://dx.doi.org/10.3391/mbi.2015.6.2.12>  
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Open Access

Special Issue: Alien species related information systems and information management

## Information Management

### Trying to engage the crowd in recording invasive alien species in Europe: experiences from two smartphone applications in northwest Europe

Tim Adriaens<sup>1\*</sup>, Michael Sutton-Croft<sup>2</sup>, Katy Owen<sup>2</sup>, Dimitri Brosens<sup>1</sup>, Johan van Valkenburg<sup>3</sup>, Dave Kilbey<sup>4</sup>, Quentin Groom<sup>5</sup>, Carolin Ehmig<sup>6</sup>, Florian Thürkow<sup>7</sup>, Peter Van Hende<sup>8</sup> and Katri Schneider<sup>9</sup>

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Open Access

Special Issue: Alien species related information systems and information management

## Viewpoint

### The importance of open data for invasive alien species research, policy and management

Quentin J. Groom<sup>1\*</sup>, Peter Desmet<sup>2</sup>, Sonia Vanderhoeven<sup>3</sup> and Tim Adriaens<sup>2</sup>

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▶ doi: <http://dx.doi.org/10.3391/mbi.2015.6.2.02>

**F**indable

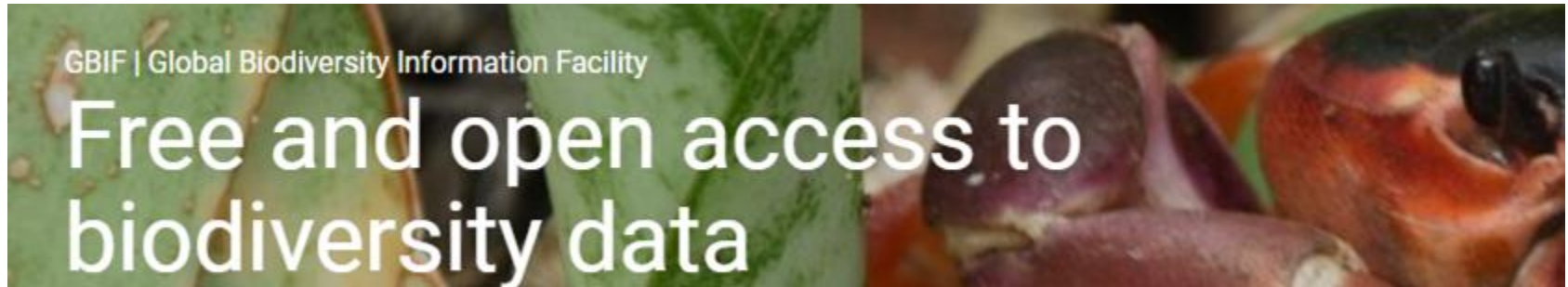
**A**ccessible

**I**nteroperable

**R**eusable



# How to make your data open and FAIR?



OCCURRENCE DATASET | REGISTERED JUNE 27, 2017


## Waarnemingen.be - Non-native plant occurrences in Flanders and the Brussels Capital Region, Belgium

Published by [Natuurpunt](#)

✉ Wouter Vanreusel • Rutger Barendse • Roosmarijn Steeman • Karin Gielen • Kristijn Swinnen • Peter Desmet • Marc Herremans





DATASET METRICS ACTIVITY [↓ DOWNLOAD](#) [⇌ HOME PAGE](#) **318,256 OCCURRENCES** **49 CITATIONS**

Waarnemingen.be - Non-native plant occurrences in Flanders and the Brussels Capital Region, Belgium is a species occurrence dataset published by Natuurpunt and described (v1.2) in Swinnen et al. (2018, <https://doi.org/10.3391/bir.2018.7.3.17>). The dataset contains over 318,000 occurrences of 1,524 non-native plant, algae and fungi species, recorded by volunteers (citizen scientists), mainly since 2008. The occurrences are derived from the database <http://www.waarnemingen.be>, hosted at the nature... [More](#)



**Metadata last modified:** January 14, 2020  
**Data last changed:** January 14, 2020  
**Hosted by:** [Research Institute for Nature and Forest \(INBO\)](#)  
**License:** [CC BY-NC 4.0](#)

[How to cite](#) [DOI](#) [10.15468/smdvdo](#)

 318,256 Occurrences	 100% With taxon match	 100% With coordinates	 100% With year
---	---	---	--



CHECKLIST DATASET REGISTERED SEPTEMBER 13, 2017 **A**

# Manual of the Alien Plants of Belgium

Published by [Botanic Garden Meise](#)

Filip Verloove • Quentin Groom • Dimitri Brosens • Peter Desmet • Lien Reyserhove

DATASET TAXONOMY PROJECT METRIC **B** **DOWNLOAD** **HOME PAGE** **C**

2,550 RECORDS 1 CITATION

Source archive Darwin Core Archive

The Manual of the Alien Plants of Belgium is a species checklist dataset published by the Botanic Garden Meise. It contains information on all (over 2.500) non-native vascular plants occurring in the wild in Belgium since 1800. The checklist is almost entirely based on a thorough herbarium revision of the main public Belgian herbaria (Verloove 2006), actively maintained, and updated regularly at Verloove (2018, <http://alienplantsbelgium.be>). Here it is published as a standardized Darwin Core Arc... [More](#)

**GBIF annotated metadata** **EML** **D**



Project ID: TrIAS

Metadata last modified: May 6, 2020

Hosted by: Belgian Biodiversity Platform

Network: TrIAS

**E** License: **CC0 1.0**

How to cite **DOI** 10.15468/wtda1m **F**



Description **G**

- Temporal scope
- Geographic scope
- Taxonomic scope
- Methodology
- Bibliography
- Contacts
- Data description
- GBIF registration
- Citation

## Description

The Manual of the Alien Plants of Belgium is a species checklist dataset published by the Botanic Garden Meise. It contains information on all (over 2.500) non-native vascular plants occurring in the wild in Belgium since 1800. The checklist is almost entirely based on a thorough herbarium revision of the main public Belgian herbaria (Verloove 2006), actively maintained, and updated regularly at Verloove (2018, <http://alienplantsbelgium.be>). Here it is published as a

**H** standardized Darwin Core Archive and includes for each species: the scientific name, kingdom, family, stable taxon identifier, and IPNI (2018) scientific name ID where available (in the taxon core), the presence in Flanders, Wallonia and the Brussels Capital Region, as well as the year of the first introduction (first collection) and last assessment/observation in Belgium (given as a year range in the event date in the distribution extension), coarse habitat information (in the species profile extension), and the pathway(s) of introduction, native range(s) and invasion stage in Belgium (in the description extension). The dataset can be used for researching and managing alien plants or compiling regional and national registries of alien species. Issues with the dataset can be reported at <https://github.com/trias-project/alien-plants-belgium>

# Citizen science portals - iNaturalist

The screenshot shows the iNaturalist website interface. At the top, the navigation bar includes the iNaturalist logo, a search icon, and menu items: 'Verkennen', 'Jouw Waarnemingen', 'Gemeenschap', 'Determineer', and 'Meer'. The main heading is 'Waarnemingen'. Below this, there are search filters for 'Soort' and 'Locatie', along with 'Ok' and 'Filters' buttons. A summary bar displays 'De wereld' with '31.553.079 WAARNEMINGEN', 'SOORTEN', '110.604 DETERMINEERDERS', and '853.417 WAARNEMERS'. The main content area features a world map with a heatmap overlay showing observation density in orange and red. Map controls include 'Kaart', 'Raster', 'Lijst', 'Interessante plaatsen', and zooming tools. A right-hand sidebar lists species with their scientific names, locations, and dates:

- Bullers Albatros** (*Thalassarche bulleri*)  
Southland, NZ • 8 feb. 2020
- Sceloporus smithi**  
Tehuantepec, Oaxaca, Mexico • 1 feb. 2020
- Bandstaartduif** (*Patagioenas fasciata*)  
San Luis Obispo Co., California • 12 feb. 2020
- Ctenochaetus striatus**  
US Liberty Wreck Site, California • 15 jan. 2020
- Allens Kolibrie**

# Citizen science portals - iNaturalist

## Draag bij aan onderzoek

Elke waarneming kan bijdragen aan onderzoek naar biodiversiteit, van de zeldzaamste vlinder tot het meest algemene onkruid in je tuin. We delen je bevindingen met wetenschappelijke databanken zoals de [Global Biodiversity Information Facility](#) om het eenvoudig te maken voor wetenschappers om je gegevens te vinden en te gebruiken. Alles wat jij moet doen is waarnemen.

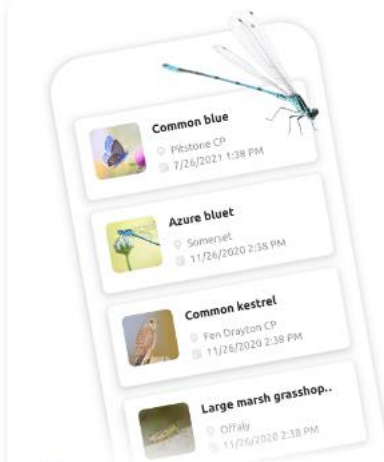


# Citizen science portals - ObsIdentify



## ObsIdentify recognizes 22.303 species of wild animals and plants

Take a picture and find out what it is.



## ObsIdentify stores your observations

All your observations in one place.



## ObsIdentify rewards you with badges

Make an observation and automatically earn a badge. You can obtain up to 5 stars for each badge. How far can you get?



## ObsIdentify challenges you

Choose your challenge. Your observations, together with those of others, count towards research into these species.



# Citizen science portals



## Zijdeplant

*Asclepias syriaca* L.

zeer zeldzaam  
ingeburgerd

Planten Apocynaceae Asclepias *Asclepias syriaca* Soort

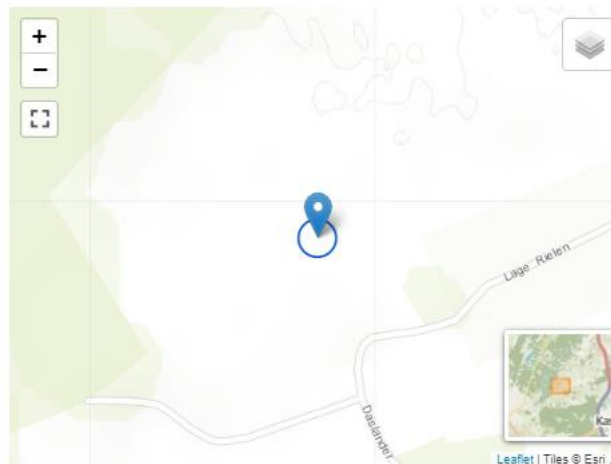
51 bloeiend ter plaatse

Opties

Route

2021-07-09 10:05  
Tim Bastiaens  
Lichtaart (AN)  
onbekend

GPS 51.2546, 4.9317  
Lambert 1972 189305 216226  
nauwkeurigheid 25m  
bron ObsMapp



### Details

Datum	2021-07-09 10:05
Aantal	51
Levensstadium	bloeiend
Activiteit	ter plaatse
Locatie	Lichtaart (AN)

### Foto's



# Choose your platform carefully



# RIPARIAS

Reaching Integrated and Prompt Action  
in Response to Invasive Alien Species



With the **LIFE RIPARIAS project**, Belgian authorities pool their resources together to optimize the management of invasive alien species in river areas and ponds across regional borders



Improve data flows from management registration systems



Develop a system to report on management actions and effectiveness



# RIPARIAS

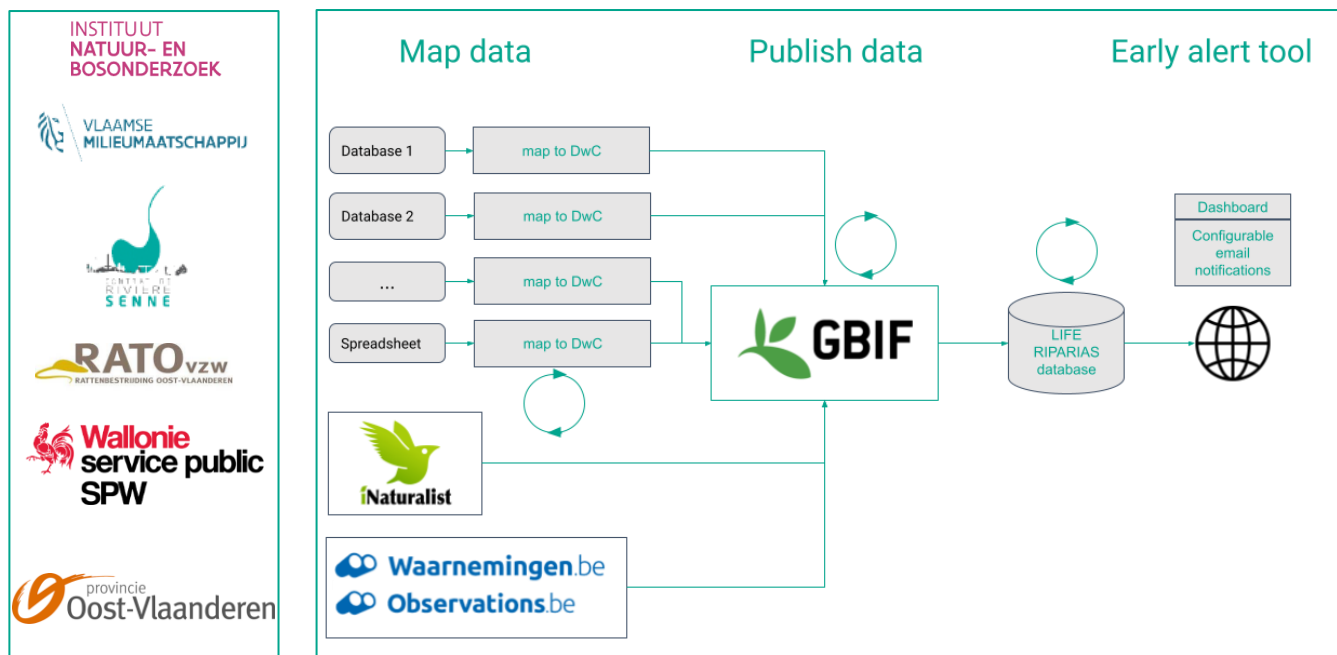
Reaching Integrated and Prompt Action  
in Response to Invasive Alien Species



a diversity in  
organizations



# The data workflow



The data workflow

Data filtering:

All species

All datasets

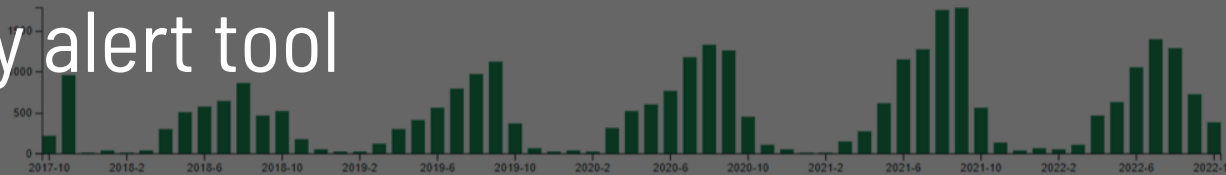
Everywhere

Imported at all time

59.077 matching observations

Enable date range filtering

# The early alert tool



- An **early alert** tool is already existing

The screenshot shows the Waarnemingen.be website interface. At the top, there is a navigation bar with the logo and user information (EN Damiano Oldoni). Below the navigation bar, there are tabs for 'Home', 'Observations', and 'Alerts'. The main content area is titled 'Invasieve-exoten' and features a search bar with a 'Filter' button and a 'Clear filters' button. Below the search bar, there are four species cards, each with a photograph and the species name in both Dutch and Latin: Rose-ringed Parakeet (*Psittacula krameri*), Bar-headed Goose (*Anser indicus*), Egyptian Goose (*Alopochen aegyptiaca*), and Ruddy Duck (*Oxyura jamaicensis*).

Data filtering:

All species

All datasets

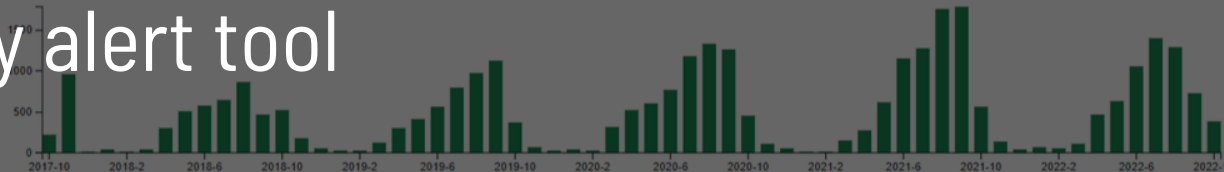
Everywhere

Imported at all time

59.077 matching observations

Enable date range filtering

# The early alert tool



- An early alert tool is already existing

Why to create a  
new one?

Data filtering:

All species

All datasets

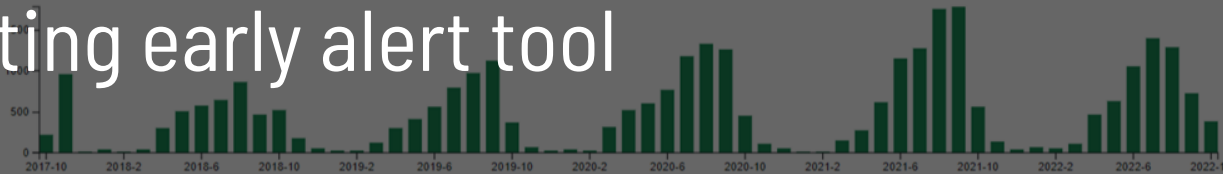
Everywhere

Imported at all time

59.077 matching observations

Enable date range filtering

# The existing early alert tool



Single data source ([waarnemingen.be/observations.be](https://waarnemingen.be/observations.be))

A screenshot of the Waarnemingen.be website. The page title is 'Invasieve-exoten'. The navigation menu includes 'Add', 'Explore', 'Projects', 'About us', 'Community', and 'Old site'. There is a search bar on the right. Below the navigation, there are tabs for 'Home', 'Observations', and 'Alerts'. A filter section includes a 'species' input field, a dropdown menu for 'All species groups', another dropdown for 'All species lists', and a checkbox for 'only species on local guideline'. There are 'Filter' and 'Clear filters' buttons. The main content area displays four species cards: 'Rose-ringed Parakeet' (*Psittacula krameri*) with a green parakeet image, 'Bar-headed Goose' (*Anser indicus*) with a goose image, 'Egyptian Goose' (*Alopochen aegyptiaca*) with a group of geese image, and 'Ruddy Duck' (*Oxyura jamaicensis*) with a duck image.

# The LIFE RIPARIAS early alert tool

**Data filtering:** All species All datasets Everywhere Imported at all time 59.077 matching observations

Enable date range filtering

LIFE RIPARIAS early alert [Explore all observations](#) [About this site](#) [About the data](#) [Sign in](#) [Sign up](#)

## Hello

Manage invasive alien species? Want to know where they are? Sign in, configure your alerts and receive updates in your mailbox from all data sources.

**Data filtering:** All species All datasets Everywhere Imported at all time 55.631 matching observations

Enable date range filtering

Map view **Table view**

Base layer OSM HOT Data layer opacity

Created by the [Open science lab for biodiversity](#) for LIFE RIPARIAS. Latest data import: #117- Aug. 14, 2022, 1:01 a.m. Source code version: [Z0bacba](#) [Privacy policy](#)

The early alert tool

Data filtering:

All species

All datasets

Everywhere

Imported at all time

59.077 matching observations

Enable date range filtering

# Email notifications

[alert.riparias.be] 4 unseen observation(s) for your alert: "All species in West Flanders"

LIFE RIPARIAS early alert -info@alert.riparias.be-  
aan mij

You have 4 unseen observation(s) for this alert.

**Sample of unseen observations**

OBIF ID	Lat	Lon	Date	Species	Dataset
<a href="#">3880966578</a>	50.7799	2.7460	July 31, 2022	<i>Impatiens glandulifera</i> (Himalayan balsam)	Waarnemingen.be - Non-native plant occurrences in Flanders and the Brussels Capital Region, Belgium
<a href="#">3880966577</a>	51.0765	3.1792	July 31, 2022	<i>Impatiens glandulifera</i> (Himalayan balsam)	Waarnemingen.be - Non-native plant occurrences in Flanders and the Brussels Capital Region, Belgium
<a href="#">3880954587</a>	51.1290	3.0082	July 31, 2022	<i>Crassula helmsii</i> (New Zealand pigmyweed)	Waarnemingen.be - Non-native plant occurrences in Flanders and the Brussels Capital Region, Belgium
<a href="#">3880965556</a>	50.9343	3.4002	July 30, 2022	<i>Ludwigia grandiflora</i> (water-primrose)	Waarnemingen.be - Non-native plant occurrences in Flanders and the Brussels Capital Region, Belgium
...	...	...	...	...	...

Don't hesitate to check it out on the [Alert page](#) for more observations and details

**Alert details**

- Alert name: All species in West Flanders
- Species: all
- Areas: Province: West-Vlaanderen
- Datasets: all
- Email notifications frequency: Daily

Thanks,  
The RIPARIAS early alert team

Beantwoorden Doorsturen

The early alert tool



Data filtering:

All species

All datasets

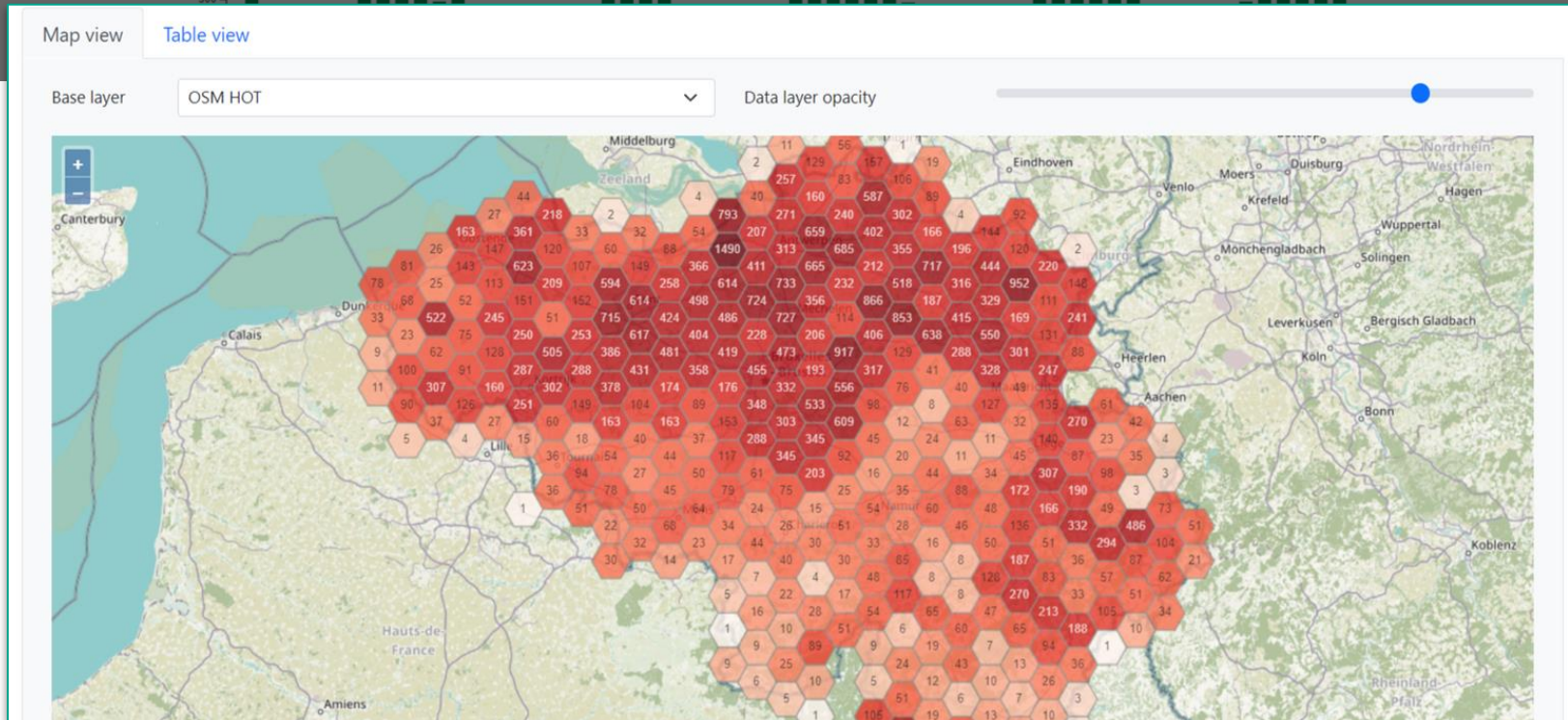
Everywhere

Imported at all time

59.077 matching observations

Enable date range filtering

# Explore observations



The early alert tool



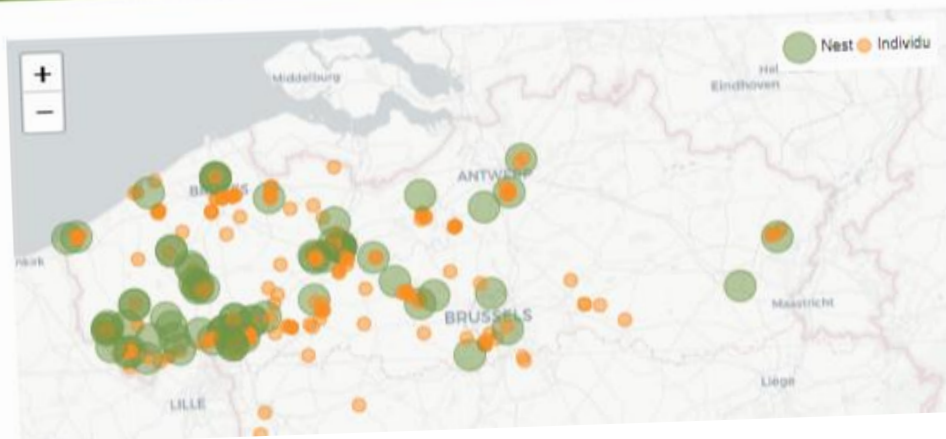
# Help de Aziatische hoornaar in kaart te brengen in Vlaanderen

Meld een hoornaar

Lees het Vespa-Watch project rapport

Leer alles over de Aziatische hoornaar in [dit filmpje](#).

De eerste Aziatische hoornaar dook in België op in 2016. Sindsdien breidt de soort snel uit. Deze wesp komt uit zuidoost China. Ze heeft het gemunt op bijen en andere insecten en wordt beschouwd als een invasieve exoot. In België wordt ze gemonitord. De populatie wordt beheerd door nesten te verdelgen.



Thank you!



Visit our  
LIFE RIPARIAS  
early alert tool



Visit our  
VespaWatch  
platform

