



European
Commission

JRC SCIENTIFIC INFORMATION SYSTEMS
AND DATABASES

Invasive Alien Species in Europe

(Version 5.1.0)
Mobile App Guide



Joint
Research
Centre



Table of Contents

1	Introduction to the <i>Invasive Alien Species in Europe</i> App	3
2	First steps	3
3	Log in and registration to the App system account	6
4	Listing of Invasive Alien Species of Union concern	8
4.1	Searching and filtering Invasive Alien Species	10
4.2	Displaying invasive alien species specific information	11
4.3	Creating a sighting record for a specific invasive alien species	14
5	Listing of local invasive alien species in a specific local area	15
5.1	Searching and filtering local Invasive Alien Species	18
5.2	Displaying local invasive alien species specific information	19
5.3	Creating a sighting record for a specific local invasive alien species	20
6	Displaying all sightings of IAS of Europe concern collected via the App	21
7	Report a sighting	22
8	Overview of user's species sightings	23
8.1	Draft records	24
8.2	Sent records	25
8.3	Notifications of validation	25
8.4	Chat with the validator	26
9	Closing remarks	26

1 Introduction to the *Invasive Alien Species in Europe App*

Alien Species are increasing worldwide and are currently present in almost every ecosystem type on Earth. They belong to all major taxonomic groups of living organisms, including viruses, fungi, algae, mosses, ferns, higher plants, invertebrates, fish, amphibians, reptiles, birds and mammals. Several alien species are invasive, affecting native biota. Invasive alien species (IAS) can transform the function, structure, and species composition of ecosystems, competing with native species either directly, by predation and for resources or, indirectly, by modifying habitats. Further impacts include effects on human health with the spread of diseases and allergens, and on the economy with serious damages to agriculture and infrastructures.

Recognizing the increasingly serious problem of IAS in Europe, the European Commission published a dedicated Regulation (http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOL_2014_317_R_0003). The Regulation foresees three main types of interventions: prevention, early detection and rapid eradication, and management. It also gives priority to a subset of IAS, included in the list of IAS of Union concern. Species are included in this list, inter alia, because they can cause such a significant damage in Member States justifying the adoption of dedicated measures at Union level. The implementation of this Regulation is supported by an official information system developed by the Joint Research Centre (JRC) the in-house science service of the European Commission (<https://easin.jrc.ec.europa.eu/>), collecting scientific information and spatial data on IAS in Europe, and supporting Member States Competent Authorities in the implementation of the Regulation on IAS.

In support to the implementation of the IAS Regulation, a specific mobile application called *Invasive Alien Species in Europe app* (further down called the “App”) was developed by the JRC. The App’s purposes are:

- 1) to allow reporting occurrences of IAS of Union concern by using citizen phones’ GPS system and phones’ cameras, to complement Member States official surveillance systems;
- 2) to provide updated information about IAS listed as of Union concern (pictures, short description, additional useful information);
- 3) to foster citizens’ awareness about the problems caused by IAS in Europe, and actively getting the public involved in the management of IAS to the benefit of European health, environment and natural ecosystems.

The App includes the current list of IAS of Union concern. More species are expected to be added in that list, following the progress of the European policies on IAS. At the same time, the App offers the possibility for including also lists of invasive alien species that are of macro-regional and national concern.

The App can be downloaded from the most common app stores:

<https://play.google.com/store/apps/details?id=eu.europa.publications.mygeossias> (Android)
<https://itunes.apple.com/us/app/invasive-alien-species-europe/id1117811993?mt=8> (iOS)

Before installing the app, please consult the privacy statement at:

https://citizensdata.jrc.ec.europa.eu/files/app/ias/en/modal_privacy.html

2 First steps

After the download and successful installation on the user's mobile, and after passing the **Opening screen** (see also cover page of this manual), the **Home screen** of the App (Figure 1) shows eight main

sections: **Invasive species**, **My species records**, **Report a sighting**, **Sightings map**, **Log in or register**, **Partners and Links**, **Contact us** and **About the app**.

The App always displays at the top an **Account icon**, that indicates if the App is currently connected to a registered user account (green) or not (red), as well as the **Information menu icon** providing access to background information.

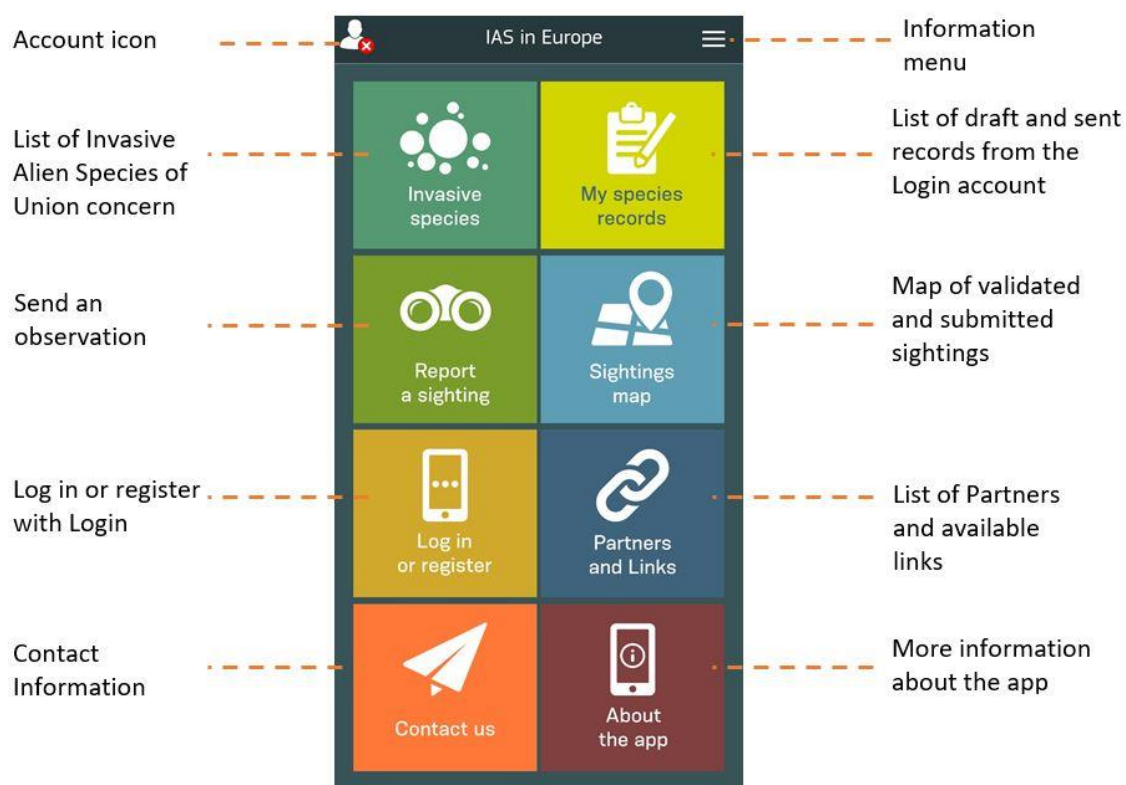


Figure 1. Home screen of the Invasive Alien Species Europe app

Basic information on the App is available from **About the app** section of the **Home screen**, while further information (including **Acknowledgment**, **Disclaimer**, **Legal notice**, **Privacy statement** and **EU IAS Regulation**) is available from the **Information menu** that is placed in the upper right corner, under the **Legal Text submenu** (Figure 2).



Figure 2. About the app screen with the Legal text submenu

In the Information menu, there is also a **Notifications submenu**. From here, all notifications about the App (new Catalogue publication, maintenance, etc.) can be reached. As soon as a new notification becomes available, a red dot will appear on the **Information menu** (Figure 3). The dot will disappear once all the newly available notifications have been read.

Last but not least, the **Settings submenu** allows to set the **Language** of the App. Currently, the App supports thirteen languages: Bosnian, Bulgarian, English, French, Hungarian, Italian, German, Greek, Maltese, Portuguese, Romanian, Spanish, Serbian and Turkish. Users can choose the language from the list of languages and pressing the Close icon on the top right corner of the **Language** screen.

The list of IAS of Union concern (further down also called **Species Catalogue**) is subject to changes in the legislation, therefore through the App, when online, the user may check if there is an update of the Species Catalogue clicking on **Check Catalogue Updates** under **Settings submenu**.

In case the user would like to disable the GPS just for the usage of the App, it is possible by clicking on the **Disable GPS** under **Settings submenu** from the **Information menu**, Vice versa, when the user wants to use the GPS it can be enabled by clicking on **Enable GPS**.

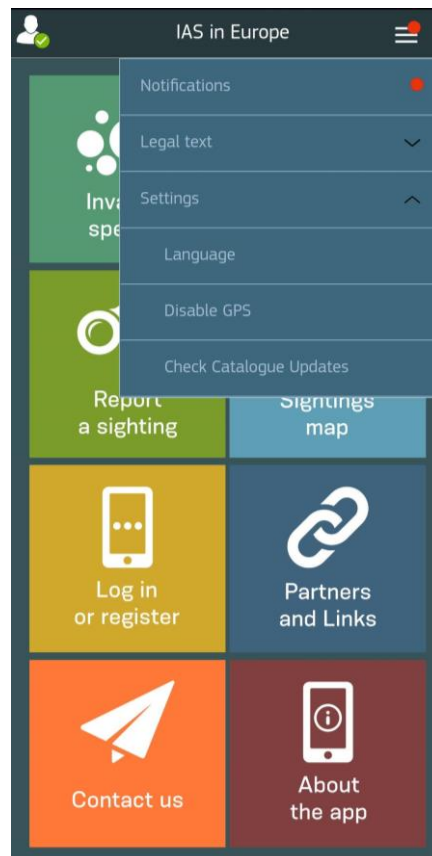


Figure 3. Home screen with the Settings submenu

3 Log in and registration to the App system account

The App can be used also without being logged in. However, the sending of Reports requires personal registration and log-in.

The registered user will be active on the App for a period defined in the system, after which the App will automatically log-off.

The App supports eight possible Login systems: EU Login, EASIN Login, Twitter, LinkedIn, Strava, Apple and Dropbox (Figure 4). User can log in or register from the **Log in or register** section of the **Home screen** (Figure 1), or by clicking on the **Account icon** in the upper left corner.

When selecting one of the available Login systems the user will be asked to log in with an already existing account in a browser window. Notably, the Strava Login system cannot be used with a Google account due to internal security restrictions. Notably, due to technical limitations people using Android devices will not be able to use the Apple Login.

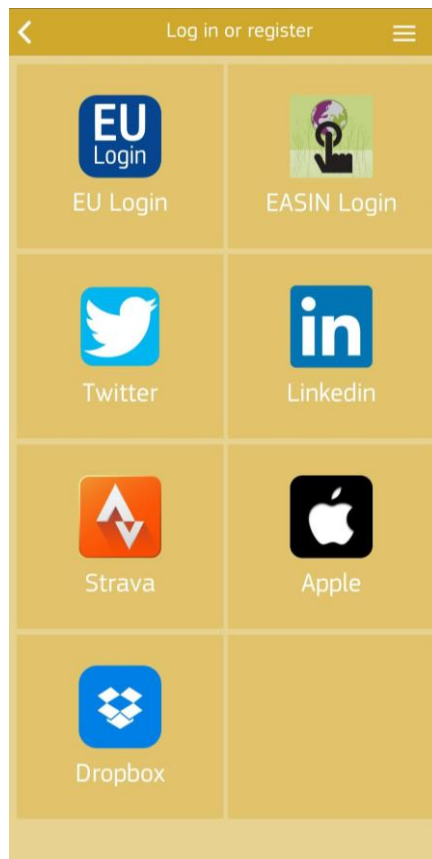


Figure 4. Available log in systems in the App

Until recently the App supported only the EASIN (European Alien Species Information Network: <https://easin.jrc.ec.europa.eu/>) Login system for registration and the management of personal data. As the EASIN Login will gradually be phased out, the App does not allow new registrations for the EASIN Login any more.

When using an already existing EASIN Login system, it is enough to click on the **Log in button** and to follow the instructions on the screen.

When the password need to be changed or reset, a reset token will be sent to the registered mail address, by clicking on **Forgot password** (Figure 5) and filling in the registered mail address.

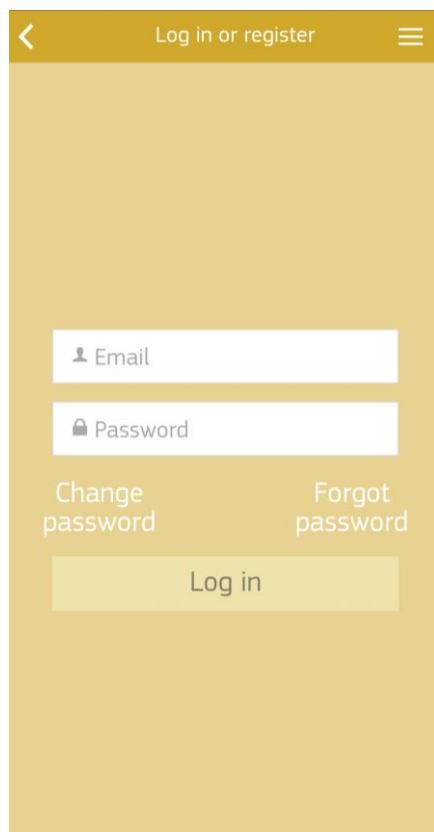


Figure 5. EASIN Login screen of the App

4 Listing of Invasive Alien Species of Union concern

The App provides access to information on about 66 invasive alien species, currently listed as IAS of Union concern as of 12.07.2017 (Commission Implementing Regulation EU 2017/1263). All these species can be searched, filtered and visualized within the App.

By selecting the icon **Invasive species** from the **Home screen**, the complete list of all IAS of Union concern will appear for consultation (Figure 6). The list of IAS is sorted by the scientific name of the species, in alphabetical order. The species are visualized having 10 species per page.

The title bar of the **Invasive species screen** always indicates the current version of the Species Catalogue that is used by the App (e.g. Invasive species – [v7.8-7]). Information on which catalogue is in use in the App is also available in the **About the app screen**.



Figure 6. Screenshot of list of Invasive alien species of Union concern

During the installation of the App, the user is asked the permission to download the latest species information and pictures from the Species Catalogue (Figure 7). In order to provide the user updates (additional species, more pictures, etc.), and only when (s)he is online, the App checks the availability of a new catalogue of species and notifies the user if any new information is available for download.

If the user decides not to download the pictures on the first pop-up, or not to download the latest version of the Species Catalogue, (s)he can re-consider this option at a later stage by selecting **Check Catalogue Updates** from the **Information menu** (under **Settings submenu**). In this case, the user is asked again the permission for downloading the latest version of the catalogue.

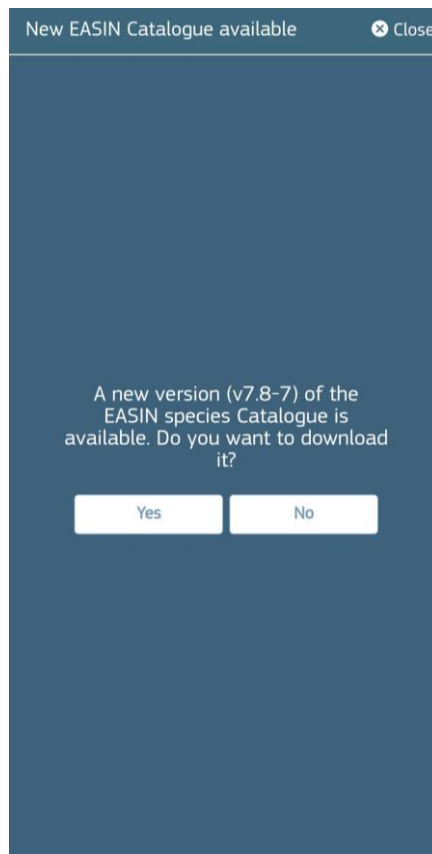


Figure 7. Pop-up to download the pictures for the invasive alien species

4.1 Searching and filtering Invasive Alien Species

The list of IAS of Union concern can be searched by scientific and common name (depending on the selected language).

In addition, the App provides also a dedicated option for filtering by Animal/Plant Type and/or by Habitat. When filtering by animal type, more detailed sub filtering may be applied, namely by: Amphibians, Birds, Invertebrates, Mammals, Reptiles, Fish or Other (Figure 8).

When filtering by plant the sub filtering is restricted to Plants and Other.

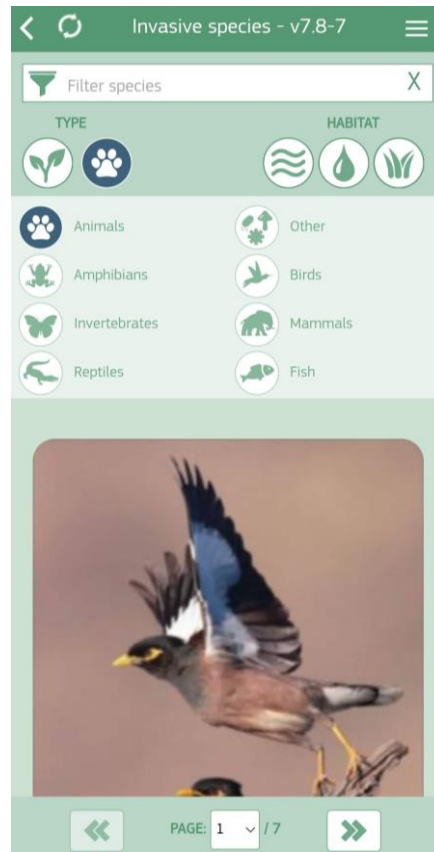


Figure 8. Filtering the species list by species Type

The same applies when filtering by habitat: marine, freshwater and terrestrial.

4.2 Displaying invasive alien species specific information

When selecting one IAS of Union concern on the **Invasive species screen**, the App displays the **Camera tab** related to the particular species screen.

All the functions related to a selected species are available through the main tabs of the species (Figure 9).

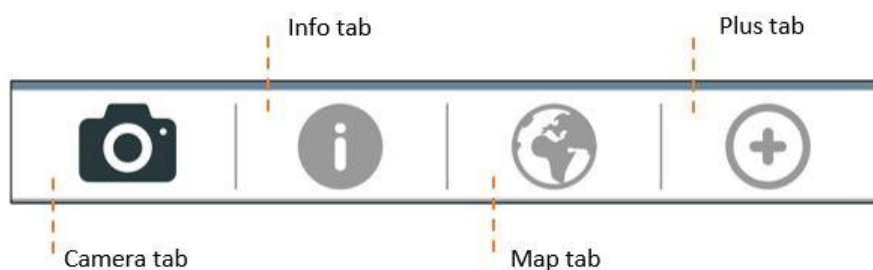


Figure 9. Main tabs of a selected species

The **Camera tab** displays all available pictures of a species (downloaded from the Species Catalogue) in order to help users identifying the species, and avoid possible confusion with similar ones.

The **Info tab** consists of the basic information that describes how the species looks like, common features with similar species, living environment, behavior, invasion history, and links to further online information (Figure 10).

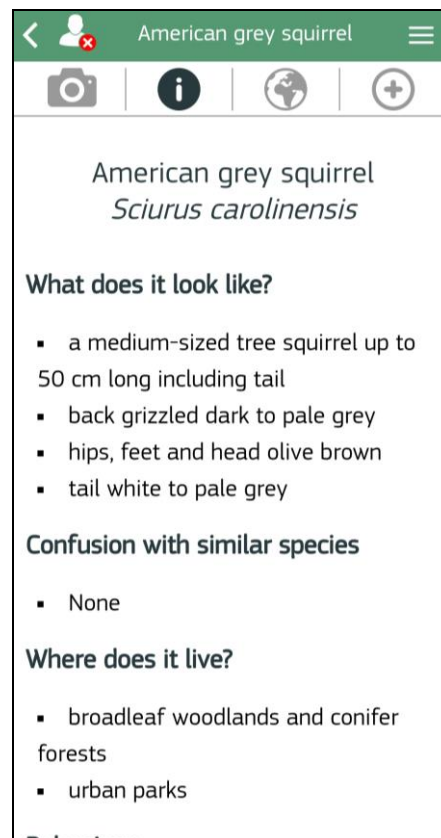


Figure 10. Species information – Info Tab

The **Map tab** on the top of the screen provides an overview on places where a species has been recorded through the App in Europe. The App displays a red dot representing a submitted sighting, and a blue marker for a sighting that has been approved and has a specified status (Validated, Pre-validated or Unclear) (Figure 11). Please see section 4.3 below.

Inappropriate content of pictures (e.g. adult content or violence) or inappropriate words in the free text will not be published. Once approved, the sighting and all the information regarding it, become visible on the **Map tab** (with a blue marker).

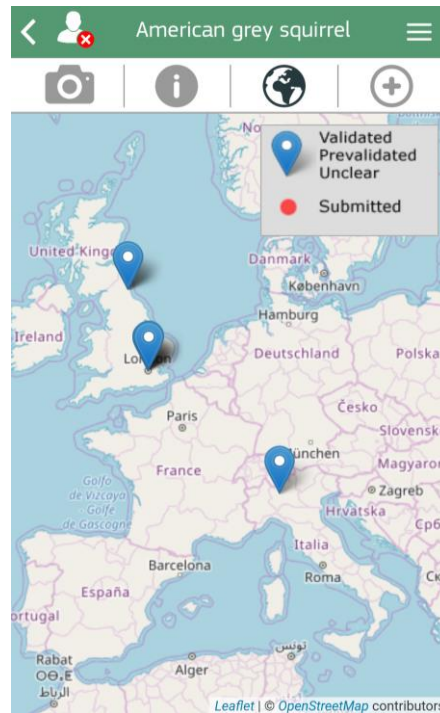


Figure 11. Site specific information – Map tab

The App will display all sightings related to the selected species that were provided by all users in an anonymous fashion. By clicking on the blue marker, a user can obtain more information about the reported sighting, which are organized in a the *Photo tab*, *Information tab*, *Location tab* and *Chat tab* of the specific sighting (see Figure 12).

The sightings which have not been revised (red dot) are not clickable and their status is not available, except for information on the location where the species could have been sighted.

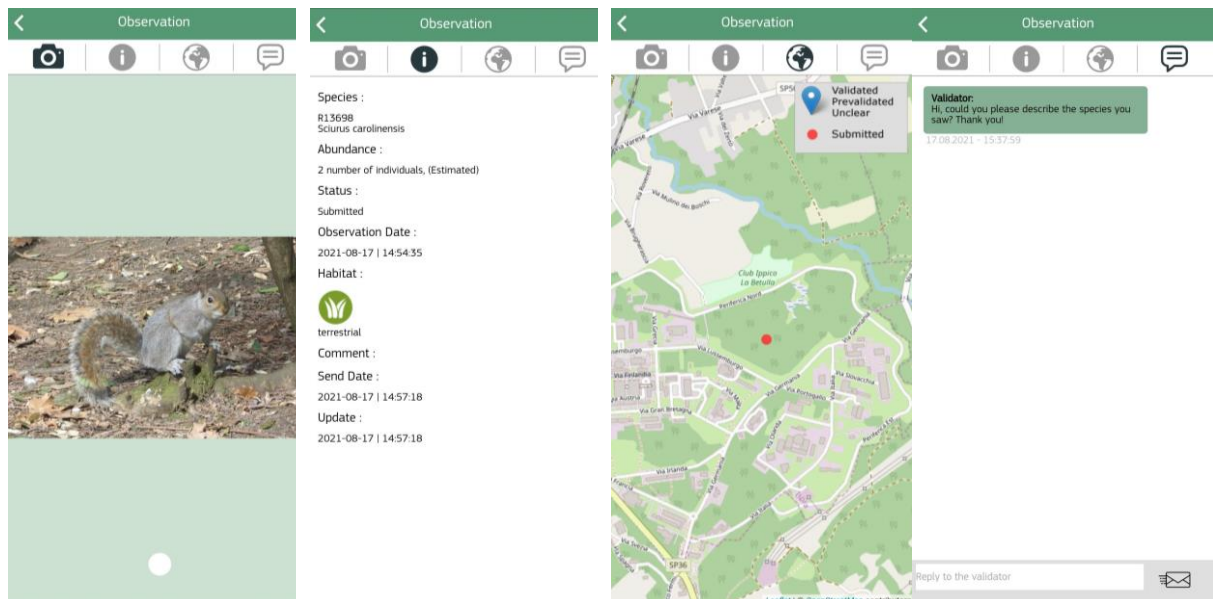


Figure 12. Specific observation information - Photo tab (left), Information tab (center left), Location tab (center right) and Chat tab (right)

From the **species-specific information screen**, a new sighting of the selected species can be added by clicking on the **Plus tab** (Figure 13).

4.3 Creating a sighting record for a specific invasive alien species

When logged in with the personal Login account, the specific sighting can be submitted for validation by clicking on the button **Send**. Once sent, sightings cannot be modified. In order to modify a sighting, or when the user is not logged in, the specific sighting can be saved as local draft to allow for checking, finalization, and later dispatch (see also Chapter 8.1).



Figure 13. Species specific information – Plus tab

After clicking the **Plus tab** to add a new sighting on a selected IAS, the following elements can be manually inserted in the form (Figure 13):

- upload a maximum of 3 pictures,
- the observation location;
- the observation date;
- estimated or measured scale coverage in m² or number of individuals (limited value is 1-50 000),
- select the habitat where the species has been sighted (marine, freshwater or terrestrial), and
- a comment.

Each sighting must include at least one picture, the sighting location, the coverage in m² for plants, or the number of detected individuals for all other species, and the related habitat.

In the case when the user uploads the pictures from the phone gallery the App tries to retrieve the EXIF (Exchangeable image file format) metadata information from the picture and prefill the sighting date and/or sighting location.

After uploading the second or third picture from the phone gallery the App always compares the extracted EXIF metadata information values with the previously prefilled or accepted data and if it differs the user is notified through a pop-up window (Figure 14) and can decide whether to keep the current values or to update the sighting date and/or location with the newly extracted metadata from the picture.

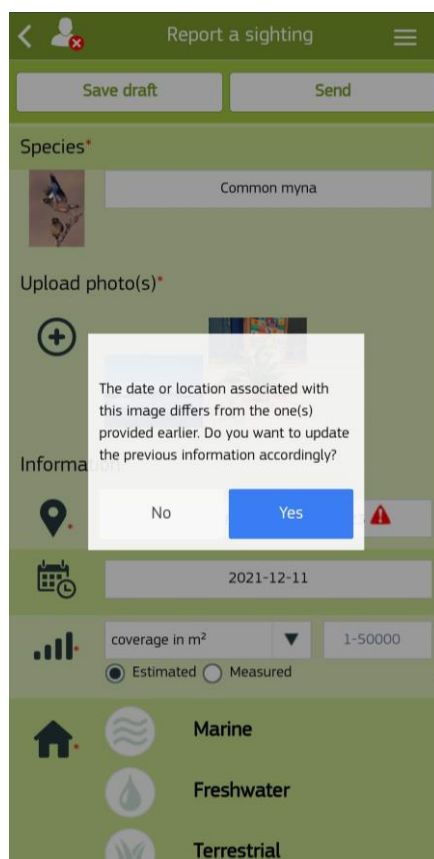


Figure 14. Pop-up when the extracted information from the picture differs

To allow for accuracy and consistency of recorded data, such information will be moderated and explicitly approved before publishing. Inappropriate content, pictures or inappropriate words in the free text will not be published. Once revised, the *Observation* becomes visible on the **Map tab** (Figure 11) of the specific invasive alien Species Catalogue.

5 Listing of local invasive alien species in a specific local area

Local invasive alien species are species that are invasive for a specific (local) area, and are not listed in the official IAS Catalogue of the invasive alien species of Union concern. Such local areas might include invasive alien species that are of macro-regional, national or sub-national concern.

The App provides the user the possibility to send a sighting of a specific local invasive alien species after the user has downloaded the respective Local Species Catalogue for the specific local area. The App currently offers this option for the Danube River Basin, which is Europe's second largest river

basin, with a total area of 801,463 km². The related local species list has been provided by the International Commission for the Protection of the Danube River (ICPDR).

Additionally, the App includes also the listing of local species in the following local areas: Sava River Basin, Iberian Peninsula and Malta. For the Sava River Basin, the local species list has been provided through the Interreg Sava TIES project implemented in all four countries of the Sava River basin: Slovenia, Croatia, Bosnia and Herzegovina and Serbia. Local species list for Iberian Peninsula has been provided by the LIFE INVASAQUA project and part by the University of Castilla La Mancha (UCLM). While the local species of Malta has been provided by ERA (Environment and Resources Authority).

When a mobile device, with the location functionality turned on, detects that the user is located in a specific local area, a pop-up (Figure 15) informs (s)he that the device is close to or inside the specific local area.

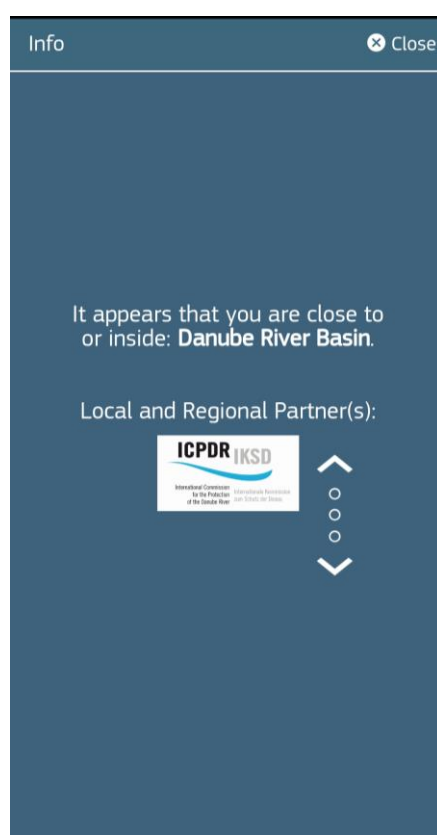


Figure 15. Pop-up that informs the user that the device is located in a specific local area

In case the device has been located for the first time in a specific local area, and has not yet downloaded the respective local invasive alien species catalogue or an update of the Local Species Catalogue is available, the App propose the user to download the Local Species Catalogue (Figure 16).

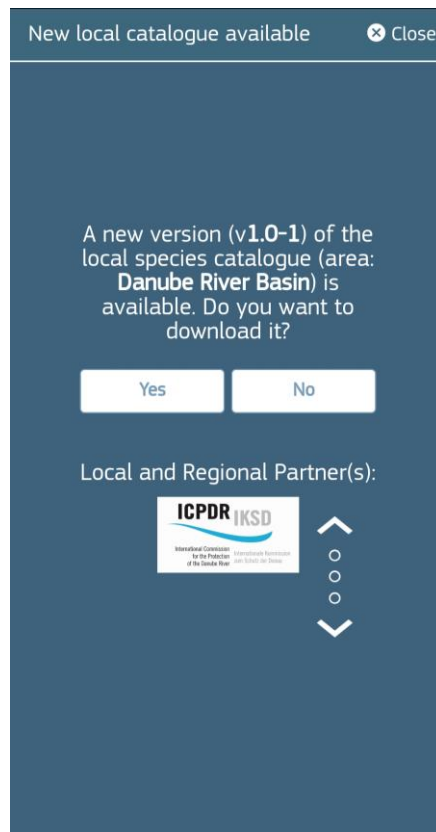


Figure 16. Pop-up to download the Local IAS Catalogue

The user may also download the Local Species Catalogue manually by going on the top right corner of the main menu screen (under the **Settings submenu**) and clicking on “*Check Local Catalogue Updates*” (Figure 17). The option is available to the user anytime the device is located in a specific local area (with the location functionality turned on).

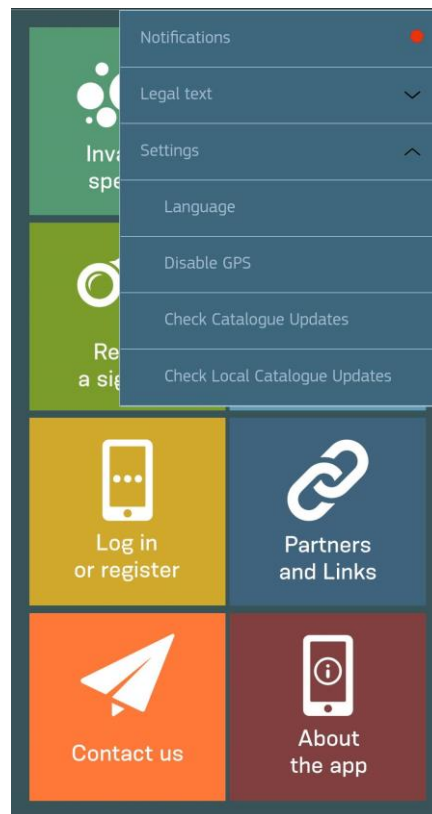


Figure 17. Main menu - option Check Local Catalogue Updates

5.1 Searching and filtering local Invasive Alien Species

After downloading a Local Species Catalogue (and while located in the specific local area), the list of local species will be available in the section **Invasive species**, together with the species of Union concern, anytime the device is located inside the specific local area.

The user has the possibility to filter just the local invasive alien species by enabling the option for filtering the local invasive alien species (Figure 18).

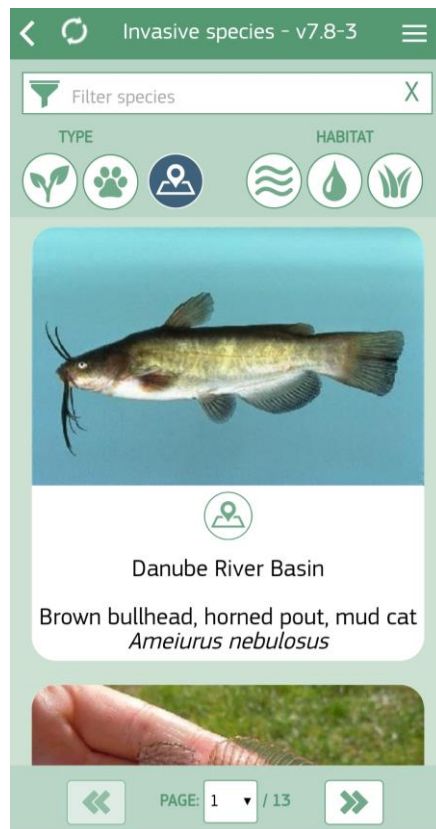


Figure 18. Filtering local invasive alien species

The filtering option is available while the device is located in a specific local area (with the location functionality turned on). As soon as the device location functionality is turned off, or the device is not any more located in the specific local area, the local invasive alien species disappear and the filtering option for local invasive alien species would not be available anymore.

5.2 Displaying local invasive alien species specific information

All information and functionalities concerning the specific local invasive alien species are available, as for the IAS of Union concern (see also Chapter 4.2), anytime the device is located in a specific local area.

The logos and links of Local and Regional Partner(s) involved in the preparation of the specific local species are listed in the **Partners and Links section** (Figure 19) and **Contact us section** of the **Home screen**, as well as at the end of the **Info Tab** for a specific local species.

In case the device is located in a specific local area, the logo of the Local and Regional Partner(s) are listed first.



Figure 19. Partners and Links section - example of available Partner's logos and links

5.3 Creating a sighting record for a specific local invasive alien species

As for IAS of Union concern (see Chapter 4.3), the sighting for the local invasive alien species is possible through the section **Report a sighting**, or directly through the specific local invasive alien species, as long as the device is located in a specific local area.

Sighting of local invasive alien species may be possible also in the situation when the device is not located in the specific local area, provided the device has downloaded the specific Local Species Catalogue. When the user is in the section **Report a sighting** (see Chapter 7), and after the location is set manually inside the specific geographic area, the list of local invasive alien species will appear together with the IAS of Union concern (Figure 20) as part of the list **Select a species**. By doing so the user will have the option to do a sighting of a local invasive alien species even though at that moment the device is not inside the specific local area.



Figure 20. List of local species with IAS of Union concern

6 Displaying all sightings of IAS of Europe concern collected via the App

By selecting the icon **Sightings map** from the **Home screen**, a map containing all sightings of IAS of Union concern reported through the App opens up.

If the location functionality of the mobile device is activated, the App will display all sightings in the surrounding areas (Figure 21). In this way, the user may find quickly if someone has already spotted an IAS nearby, or can have a look at the map if a species has been sighted in a location of interest.

When the location functionality of mobile device is not activated, the App will automatically set the position to the center of Europe.

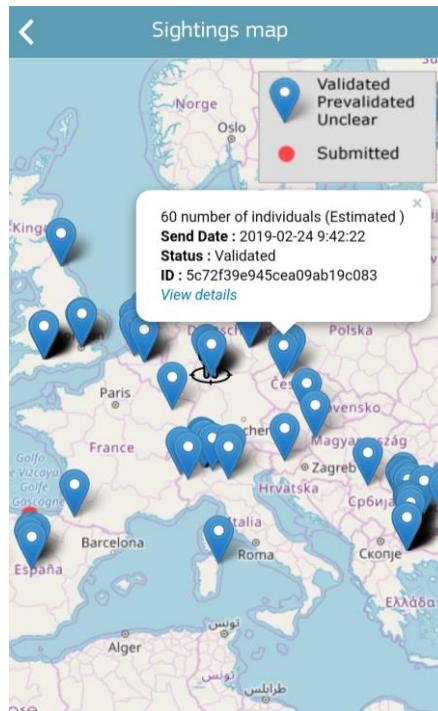


Figure 21. Sightings map screen of the App

The main information of the sightings can be explored by tapping the **blue marker** representing an individual sighting. Any additional information on the specific sighting may be accessed by clicking on **View details** link (see also Figure 21).

7 Report a sighting

The App provides multiple ways to enter a new sighting of an IAS of Union concern. Besides accessing the reporting templates from the **Invasive species** list, a sighting can also be directly issued from the **Home screen** of the App, by clicking for example on **Report a sighting** - always linked to a specific IAS.

To be noted that, if no location for a report is set manually, if no geolocation metadata can be extracted from the uploaded picture or the location functionality of mobile device is not activated, the App will automatically set the position to the center of Europe.

Figure 22. Report a sighting screenshot

A sighting is considered to be complete, and can therefore be submitted, upon successful authentication with a Login account, and (Figure 22) when:

- a species has been selected,
- at least one picture is uploaded,
- a location has been set,
- an estimated or measured scale for coverage in m² or number of individuals has been set (limited value is 1-50 000), and
- one of the proposed habitats selected.

In order to control data transmissions, the number of pictures is limited to at most 3 pictures for each sighting.

The sighting will only be clickable (blue marker) in the **Sightings map** or **Map tab** of the selected invasive alien species, after revision and upon approval of the information provided to the validator service.

8 Overview of user's species sightings

The App offers the possibility to view all sightings that have been submitted by the user that are linked to the same account via the **My species records section**. This includes already published sightings, as well as draft sightings that may still be edited and sent for publication.

The **My species records section** of the App is directly accessible from the **Home screen**. It displays the *Draft records* (draft sighting), *Outgoing records* (sightings that were sent while no internet connection,

but still not published) and *Sent records* (published sightings with the used Login account). By default, records are displayed in chronological order, and referenced by the date of publication (Figure 23). If applicable, records that require an interaction with a validator will be displayed on top.



Figure 23. My species records screenshot

The Sent records can be filtered by the scientific name by selecting one of the listed IAS in the drop down menu. Doing so the user will be able to visualize the records based on the selected species.

If a user has an unread message from a validator that requires his/her attention, an icon message appears on the right side of the respective record. These records will be displayed on top of the list (see also Figure 23 for two examples).

8.1 Draft records

In order to allow for later editing and updating of the collected information, the App offers the possibility to save draft sightings. Sightings are also saved as drafts when the user is not logged-in with his/her account, or when no internet connection is available for submission. All locally saved draft sightings are available under the title *Draft records* of the **My species records** screen (see also Figure 23). Notably, these sightings are saved on the mobile device itself and, as such, they are not yet connected to the Login account.

For each draft sighting the user may *send* (if fully completed), *delete* or *modify related data*. The screen for modifying the draft sighting is similar to the one for entering a new one (see also Chapter 7).

8.2 Sent records

A list of sightings sent from the same Login account is memorized (see also Figure 23) with *Sent records* title, under the **My species records**.

All sent reports can be checked from there, including all information and photos of the relevant sighting (see also Figure 12).

All sightings of IAS of Union concern submitted via the app are visible in a web-map: <http://digitalearthlab.jrc.ec.europa.eu/hub/ias/>.

8.3 Notifications of validation

The user will be notified through the App if his/her Sent records has been validated. If the user is successfully logged in, and the validator has validated the Sent report, a pop-up window informs the user how many observations have been validated (Figure 24). When clicking on the My records button the user will be redirected on the **My species records section**.

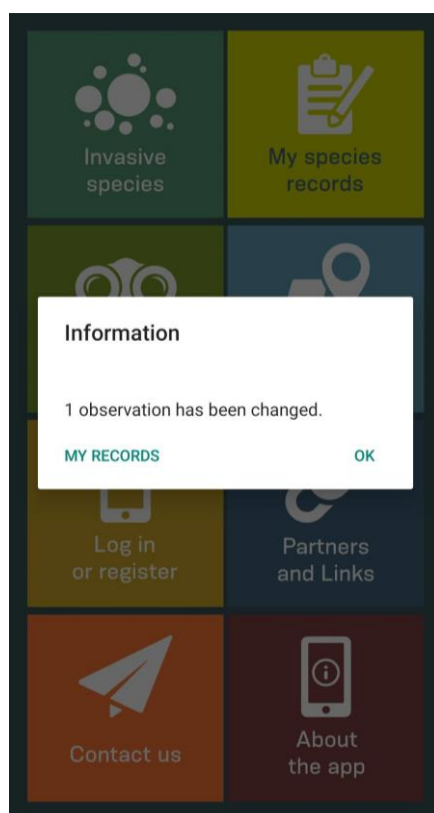


Figure 24. Notification of validation

All validated reports that have been validated, but that cannot be seen by the user yet, are marked as UPDATED. Upon the user clicking on the specific sent records the App implies that the user has been informed about the validation, and the sent record is not marked as updated any longer.

8.4 Chat with the validator

In case a validator needs more information concerning a submitted record (e.g. in order to proceed with the validation when the associated picture is blurry or the record location is unclear), the user will be contacted through the Chat tab of the record in question.

When launching the App, the user will be notified when (s)he has some unread messages from the validator (see also Figure 25). The number of unread message(s) - if any - are also shown on the **Home screen**, as part of the **My species records** icon.

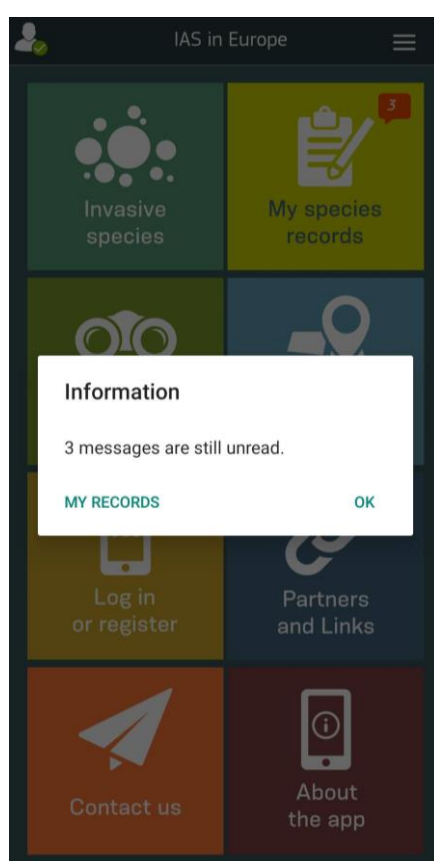


Figure 25. Chat with the validator

Clicking on My species records the user will be redirected to **My species records section**, where (s)he will see one or more message icons and the number of unread messages (under Sent records).

Clicking on a specific record with the chat icon, the user will be directed to the Info tab of the related observation. The Chat tab (on the right) will be blinking, to notify the user about an unread message(s). Visiting the Chat tab, the user can see the history of the entire conversation and (s)he can send messages to the validator. Messages can be send by entering the message in field “Reply to the validator” and clicking on the envelope on the right side (Figure 12).

9 Closing remarks

We hope that this manual may help you in exploring the IAS App functionalities towards an enjoyable experience in the field, and would be happy to receive your sightings of invasive alien species of Union concern. Feedback is welcome and can be provided directly to the app stores, or by using the **Contact us** section.