



EFSA ACTIVITIES ENETWILD – MAMMALNET APP

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Biological Hazards, Animal health & Welfare
(BIOHAW)

EFSA vision and mission

SCIENCE
SAFE FOOD
SUSTAINABILITY

Protecting consumers, animals, plants and the environment
through independent and transparent scientific advice
on risks in the food chain from farm to fork

**What
EFSA
does**



Provides independent **scientific advice and support** for EU risk managers and policy makers on food and feed safety



Provides independent, timely **risk communication**



Promotes **scientific cooperation**

EFSA work on African swine fever - **SCIENTIFIC ADVICE AND TECHNICAL SUPPORT**

Annual epidemiological reports (since 2017)

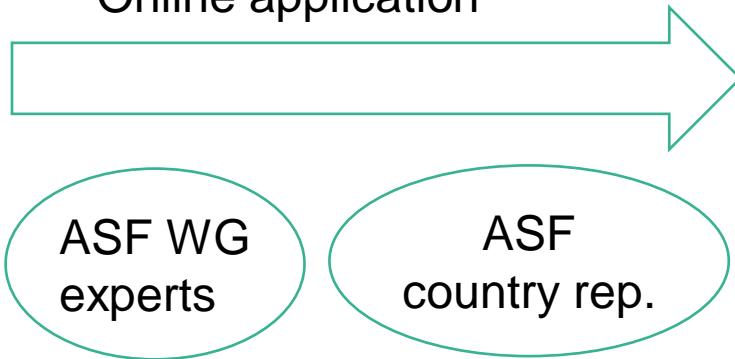
Current mandate from 2022- 2028. Next report in May 2024 with 2023 epidemiological situation

DATA

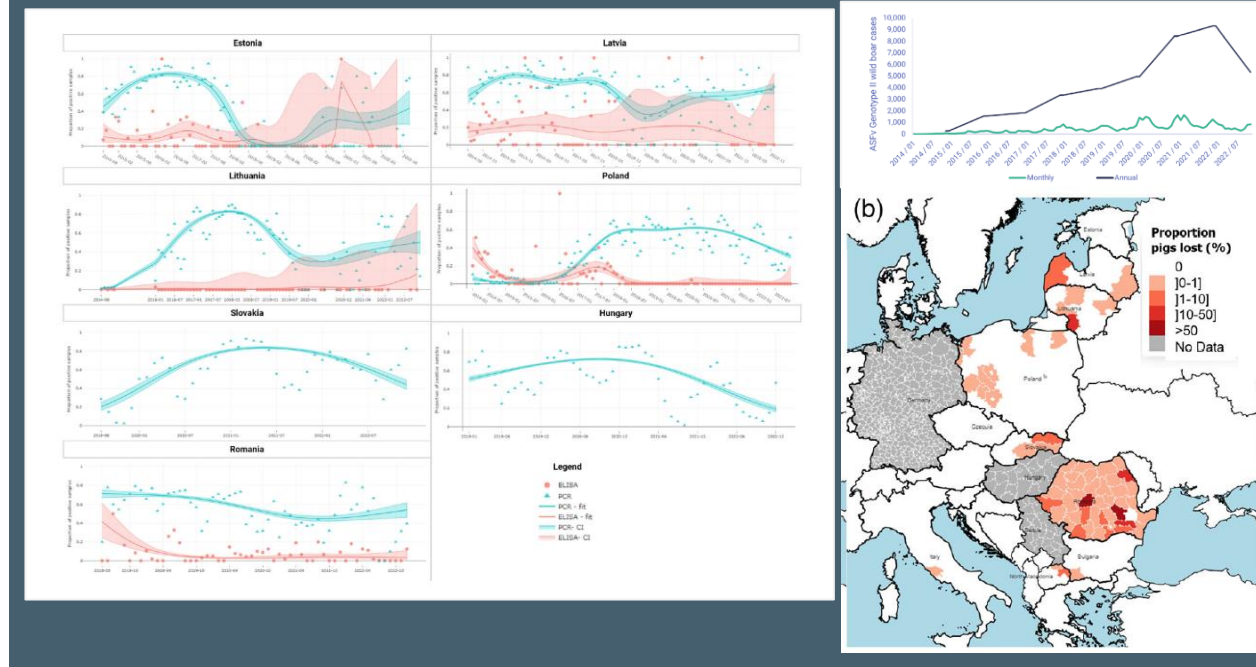
ADIS outbreaks
Laboratory data
(pigs & wild boar)
Pig population data
Wild boar data
(ENETWILD)

ANALYSIS & REPORT

Online application



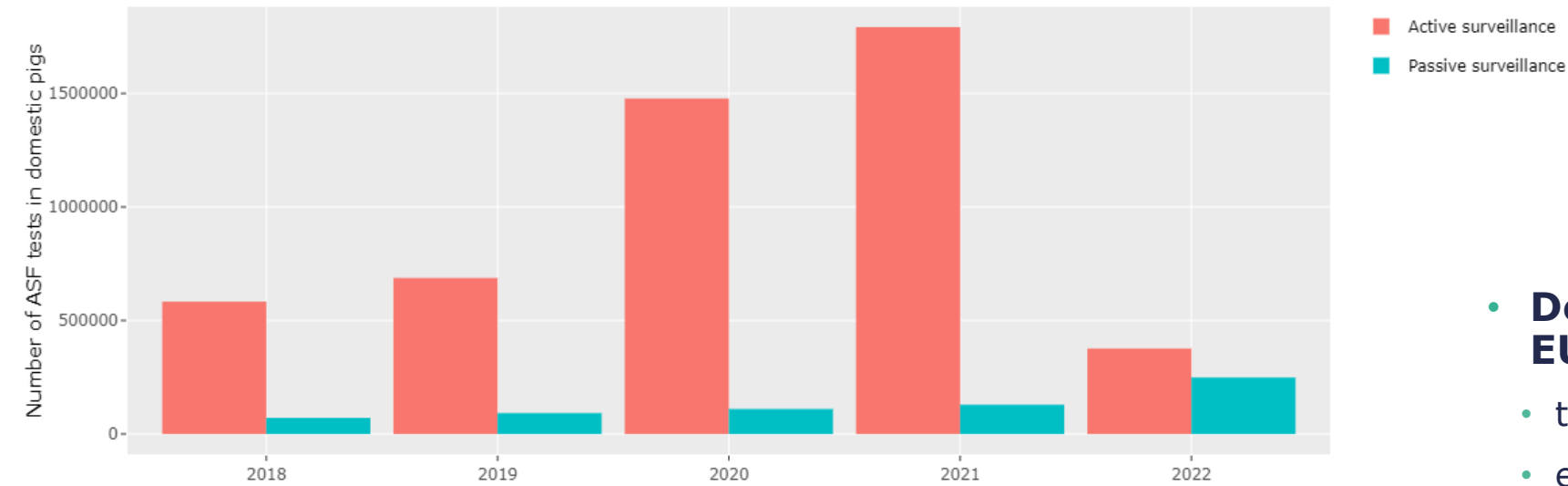
Epidemiological analysis of African swine fever in the European Union during 2022



Latest epidemiological report:

<https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2023.8016>

SURVEILLANCE IN DOMESTIC PIGS IN 2022



Number of domestic pig samples analysed for ASFv Genotype II by the reporting countries per year, differentiating active from passive surveillance components

- **Detection of ASF outbreaks in the EU**
 - testing **clinical suspicions (93%)**
 - enhanced passive surveillance based on weekly test of at least 2 dead pigs per establishment (2%)
 - tracing from affected establishments 5%

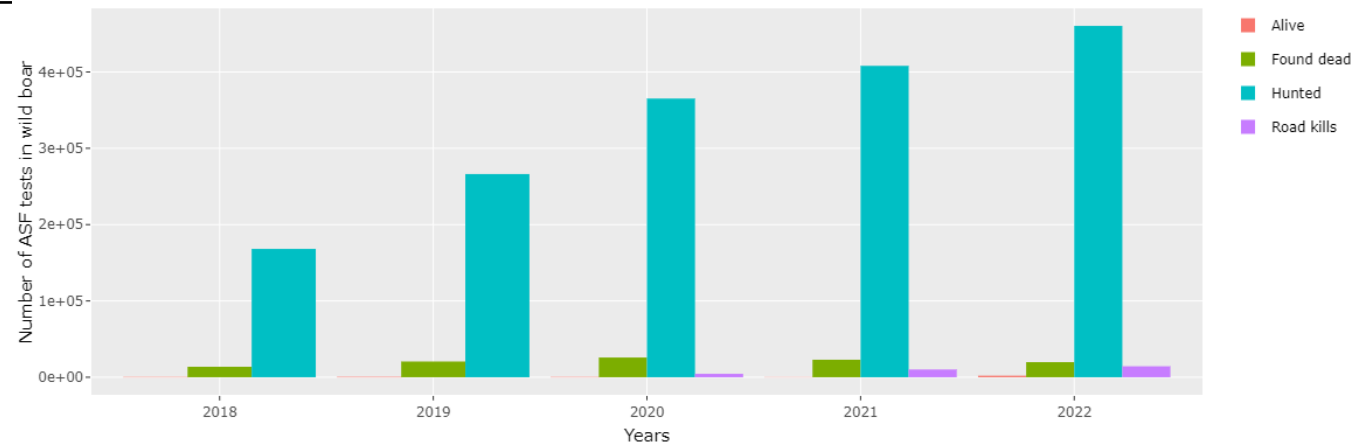


SURVEILLANCE IN WILD BOAR IN 2022

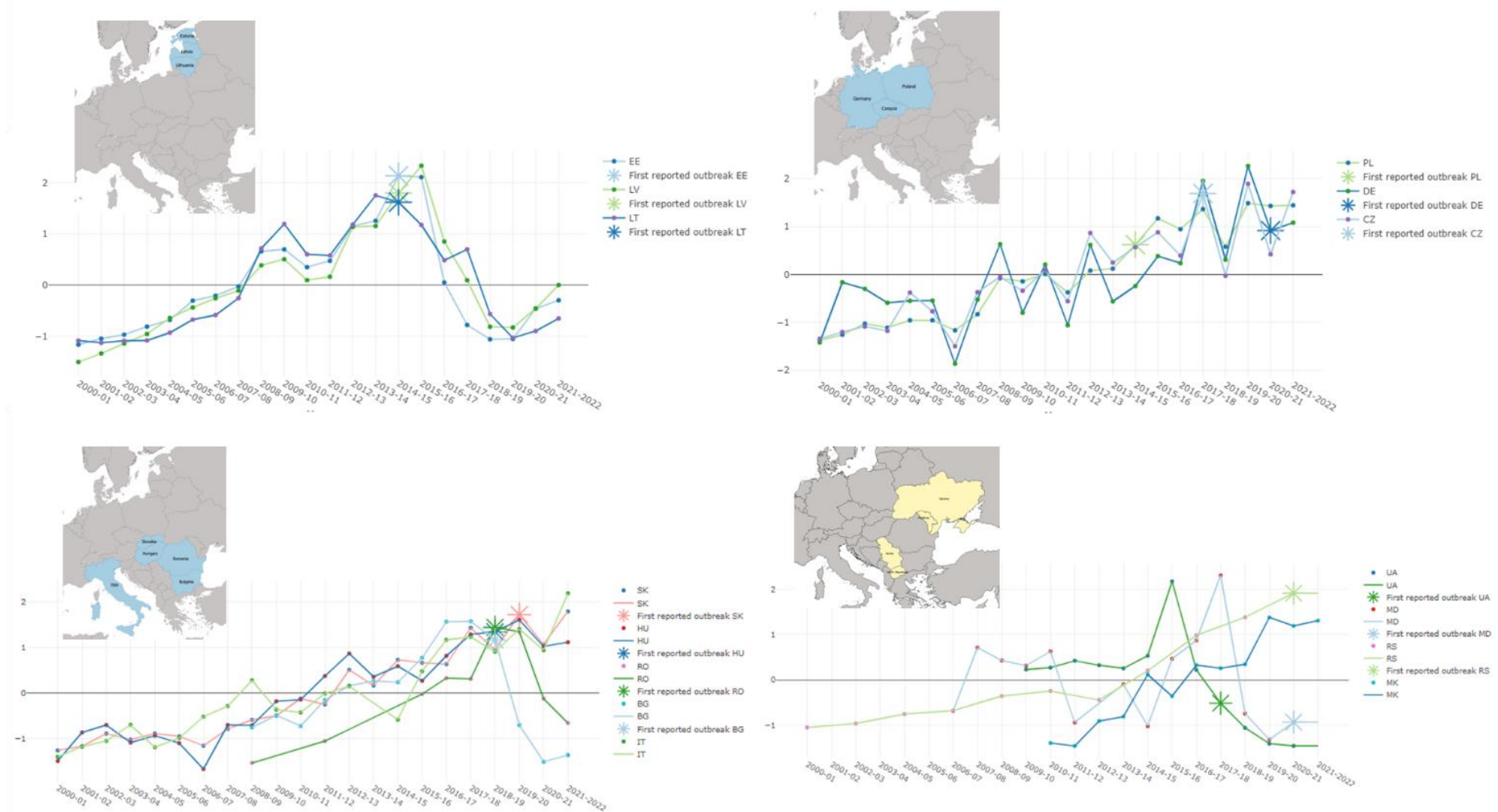
Summary of the surveillance results for ASFv Genotype II per type of wild boar sampled

Sampled population	ELISA tests		PCR tests		Total ^(a)	
	Number of samples tested	%Pos	Number of samples tested	%Pos	Number of samples tested	%Pos ^(a)
Total hunted	158,150	0.7	427,191	0.4	459,240	0.6
Total found dead	956	0.6	19,158	27.1	19,772	26.3
Total road-killed	425	0.9	14,013	0.5	14,324	0.5
Total wild boar in Member States	159,531	0.7	460,362	1.5	493,336	1.6

Testing **found-dead wild boar by PCR** appeared to be the most effective surveillance activity to detect infected individuals



IMPACT ON WILD BOAR



Standardised annual hunting bag in the European ASF-affected countries. Standardised hunting bag was calculated by z-score calculation



EFSA work on African swine fever - **SCIENTIFIC ADVICE AND TECHNICAL SUPPORT**

Scientific advice on specific topics

Since 2010: Risk of introduction, risk factor analysis, wild boar management, exit strategy, outdoor farming, role of ticks, research gaps, virus survival in matrices.

New

Review, identify and describe **risk factors** involved in the **occurrence, spread and persistence** of the ASF virus in the wild boar population and in the domestic pig population flagging the emergences of new risks factors, with a view **to inform risk management** and enable the **preparation of future risk assessment mandates**.

Every two years, starting in **October 2024**

Update
Systematic
Literature Review

Vectors

Wild boar
density

Fences

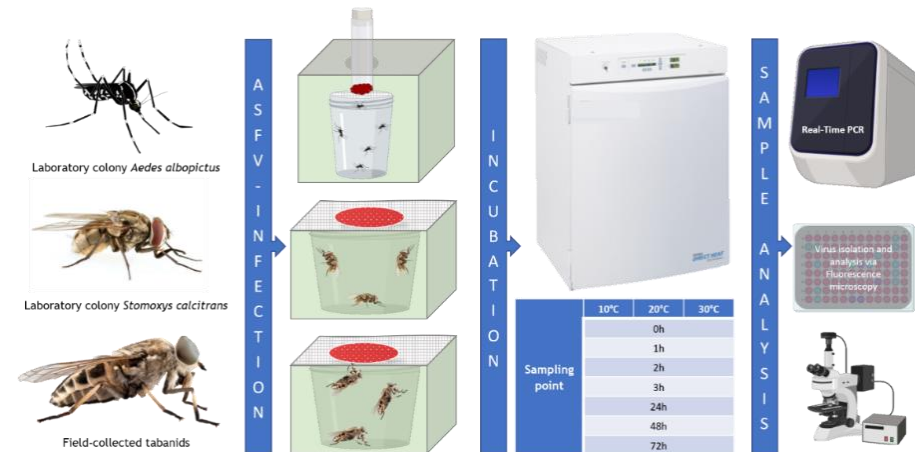
Immunocontracep-
tion of wild boar

FILLING THE GAPS ON KNOWLEDGE TO IMPROVE SCIENTIFIC ASSESSMENTS THROUGH PROJECTS

Survival of African swine fever virus in feed, bedding materials and mechanical vectors and their potential role in virus transmission

- Laboratory experiments to assess survival of ASFv in different matrixes under different conditions
- Survival in three size mechanical vectors: (*Culicidae*), a biting fly (*Muscidae*), and the horsefly (*Tabanidae*)
- Transmission of ASFV via ingestion of arthropods (*Aedes albopictus*) after an infected blood meal.

*grass, corn silage, grass silage, potatoes, fodder beet, hay, barks, peat, wood shavings, rapeseed, barley, wheat, oats and straw



FILLING THE GAPS ON KNOWLEDGE TO IMPROVE SCIENTIFIC ASSESSMENTS THROUGH PROJECTS

Project

Wildlife and One Health:

wildlife ecology, health surveillance and interaction with livestock, human population and environment



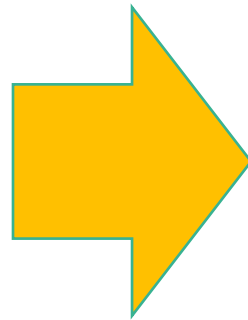
ENETWILD



WHY ENETWILD?

?

- EFSA been requested to assess **risks related to animal diseases for which wildlife are hosts**
- **Lack of data** on the geographical distribution and abundance of the wildlife and the diseases they transmit



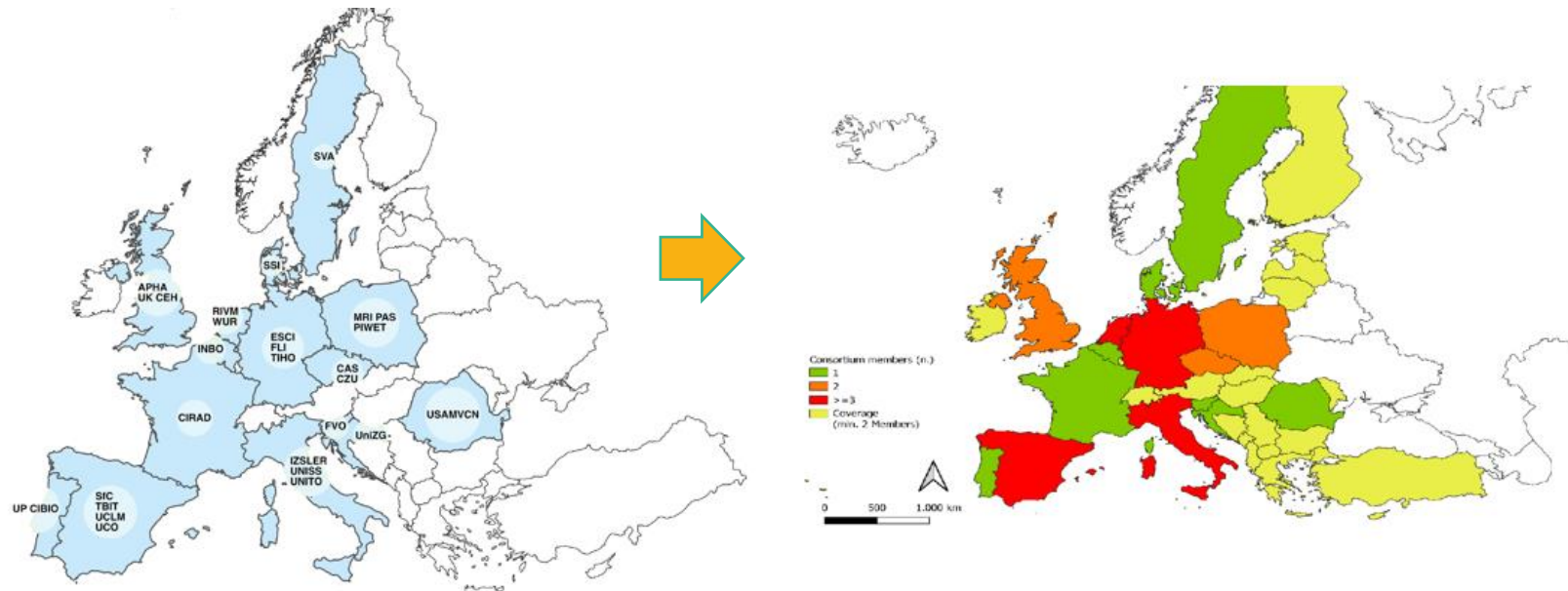
!

1. To collect **existing published or unpublished data**, to validate and to store in a common database
2. To promote and coordinate the **generation of new data**
3. **Spatial Modelling**
4. To **enhance the network of wildlife professionals** to support data collection activities

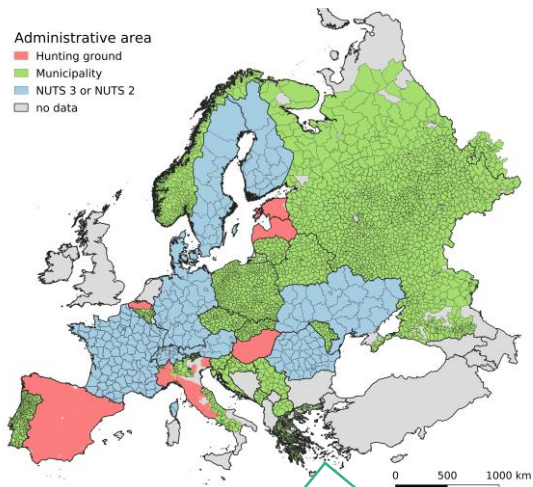


MID-LONG TERM ACTIVITY

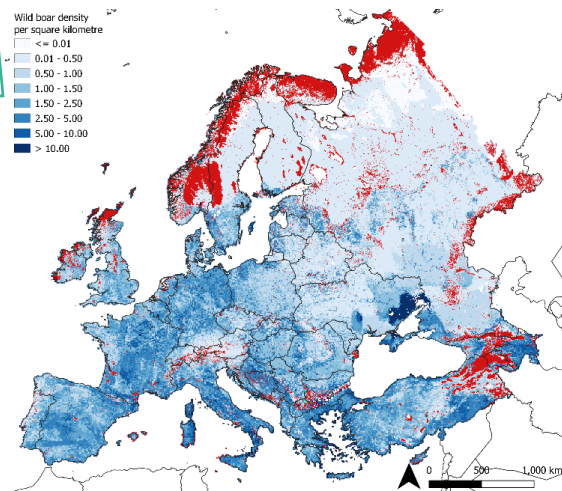
- First project >> 2017-2023
- Second project >>> 2023-2029
- Same consortium, now expanded: **27** partners and subcontractors



BUILD ON EXISTING KNOWLEDGE CREATED BY ENETWILD 1.0



Harmonise
Standardised



Improve and extend **collection of existing data** on the ecology, geographical distribution, abundance of wildlife species, including disease



Automatize data submission and standardization. Develop harmonized protocols for wildlife demography and disease surveillance.



Optimize **data collection** and accessibility



Fill identified data gaps, for animal species and geographical areas




ENETWILD DATA EXPLORATION APP

EFSA statistical models

EFSA statistical models

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Restart app Stop app



Data Explorat

About Data Exploration

Explore the ENETWILD database

Welcome to our app! With ENETWILD-DET, users resolution availability. This exploratory tool aims to m wildlife conservation, management and disease pre focusing on hunting statistics.

Start by loading the 'Load Data' button to unlock a we

Once you have load the data, you will be able to filter

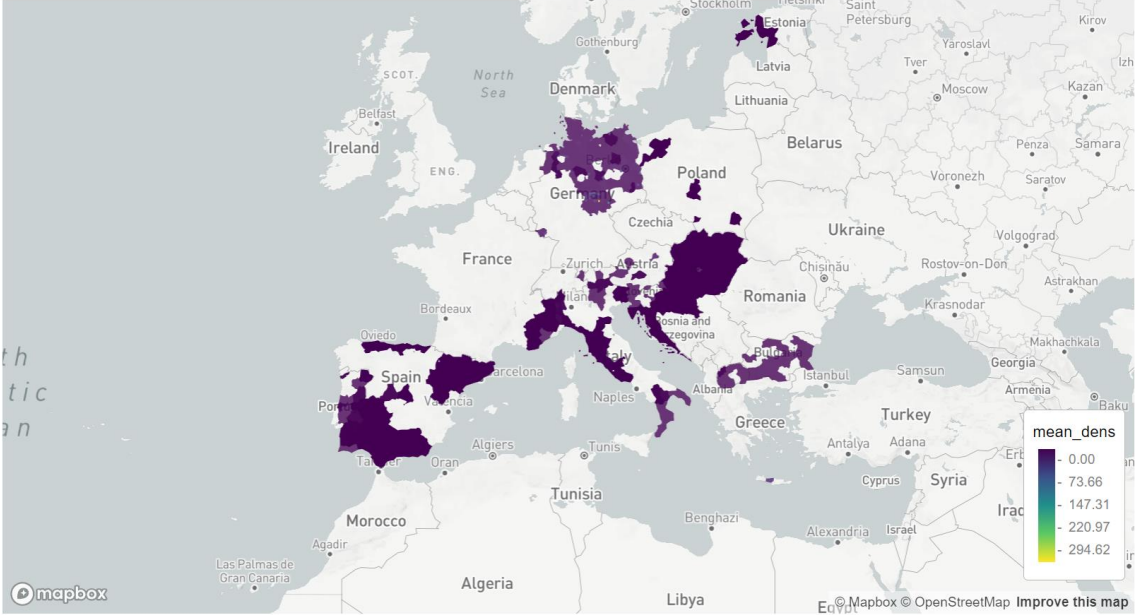
Information regarding the meaning of the variables th

Mapping module

Select your species

Select fill variable

Temporal Evolution exploration module



Download data:

gpkg shp

Download data

<https://r4eu.efsa.europa.eu>

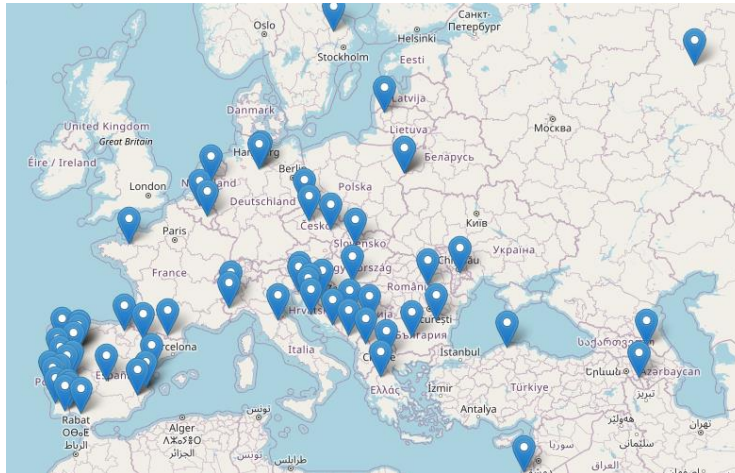


GENERATE NEW DATA

Where relevant data and information are missing and needed by EFSA, to generate **original data** with *ad hoc* field studies on wildlife population, disease epidemiology, environmental aspects, wildlife management practices



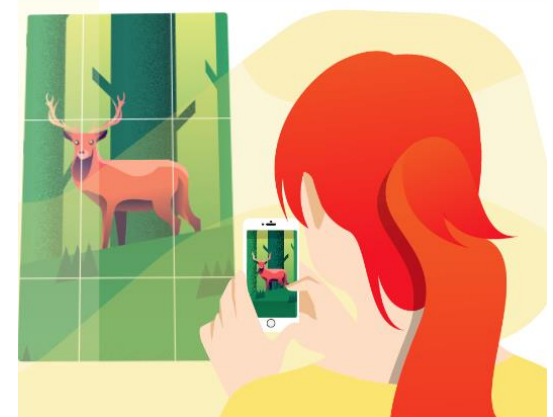
CAMARA TRAPPING



CITIZEN SCIENCE



MAMMALNET
WATCH WILDLIFE FOR SCIENCE

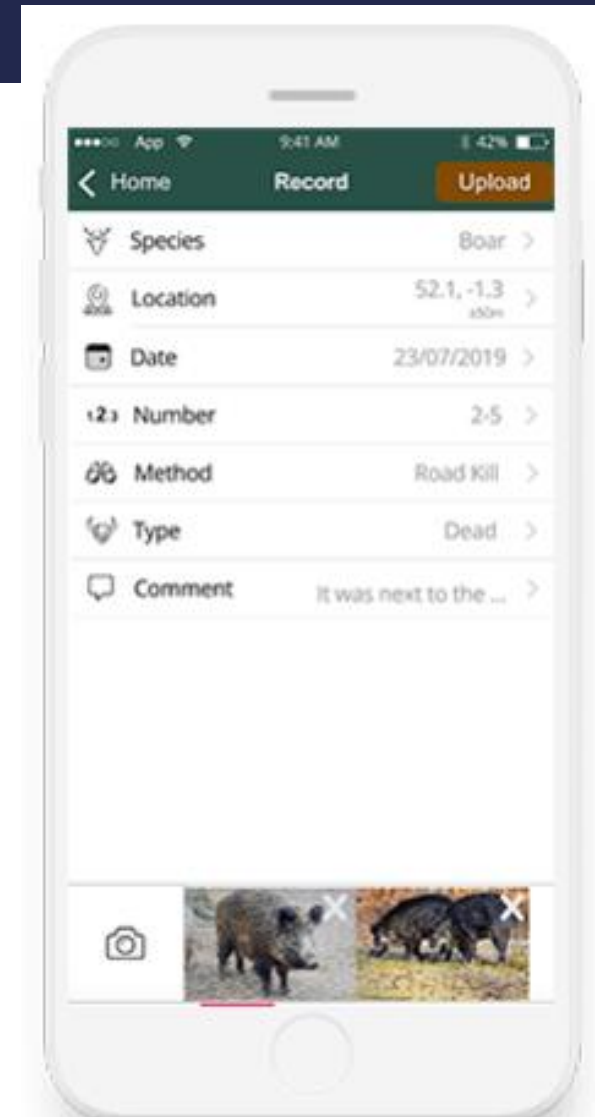


iMAMMALIA



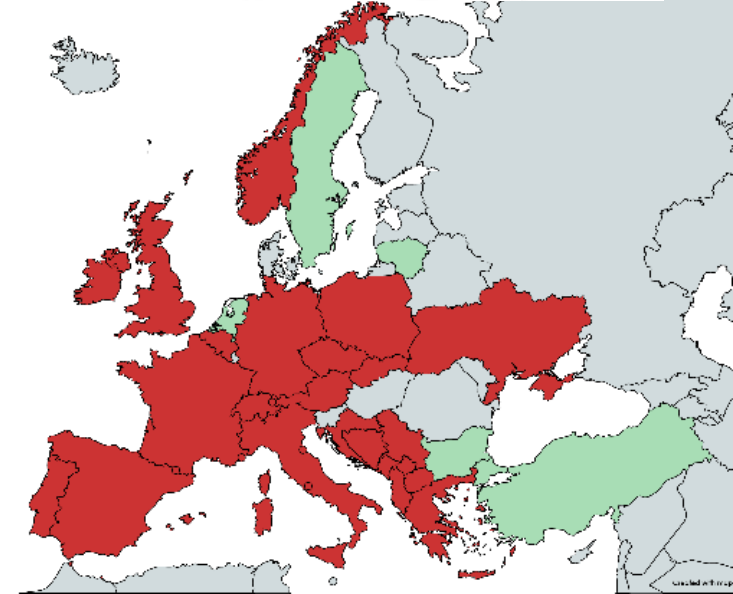
The splash screen for the iMammalia app features a yellow background. On the left, a smartphone displays a grid of mammal species including Polecat, Muskox, Lynx, Otter, Bear, Red Fox, Rabbit, and Hedgehog. To the right, the iMammalia logo is positioned above the text "Recording European mammals". Below this text are two buttons: "My records" and "FAQs". At the bottom, there are two download buttons: "GET IT ON Google Play" and "Download on the App Store".

- A phone app to collect occurrence data >> stored in www.gbif.org



IMAMMALIA – CITIZEN SCIENCE DATA COLLECTION

- Developed by the UK veterinary agency, APHA
- Funded by EFSA and the FAO
- Launched in October 2019
Can record ANY mammal anywhere in Europe
- Currently in 17 languages, with an emphasis in the Balkans
- Over 22,000 records in 37 European countries of >90 different species
- We can use these records to find wildlife disease.



IMAMMALIA - THE TOOL FOR WILD BOAR CARCASS REPORTING

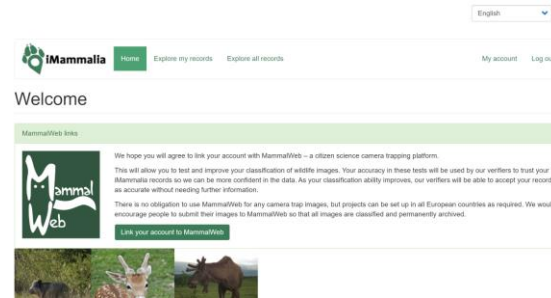
Citizen report dead wild boar in the App



Photo + details
(sex, age, alive,
dead, road killed,
carcass status)



iMammalia website



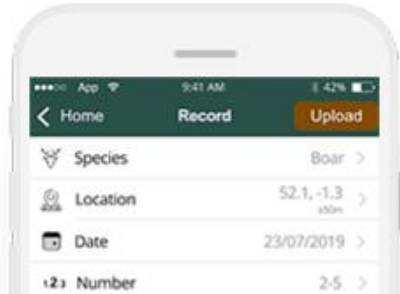
Information is verified by experts



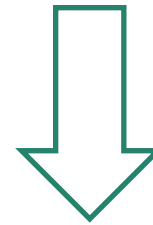
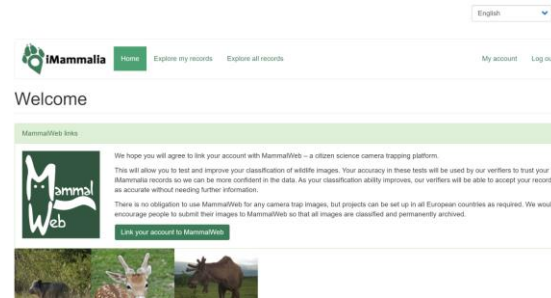
Transferred to an open access data base
with appropriate geographical buffering

IMAMMALIA - THE TOOL FOR WILD BOAR CARCASS REPORTING

Citizen report dead wild boar in the App



iMammalia website



Alert email notifications of 'dead wild boar' to Veterinary Services

Information is verified by experts



Open access data base

1.

IMAMALIA – DATA VISUALIZATION WEBSITE

The screenshot displays the iMammalia website interface. At the top, there is a navigation bar with the iMammalia logo, 'Home', 'Explore my records', 'Explore all records', 'My account', and 'Log out'. Below this, the main content area is divided into several sections:

- Explore all records:** A search bar containing 'boar' and a status dropdown set to 'All'. Below is a map showing the location of records.
- Record of Sus scrofa:** A detailed view of a specific record. It includes:
 - Record details:** Record external key (17a1f88d-2d7c-4f50-bc50-eda89b15de56), Recommended name (Sus scrofa), Common name (Wild boar), Name as entered (Sus scrofa), Taxonomy, Survey (iMammalia App), Recorder, Record status (Accepted as correct), Verified by (smith. graham), Date (44.898N, 19.777E), Submission date (Entered on 5th August 2023 at 18:17 and last updated on 7th August 2023 at 10:49), Abundance (6), Data Source Version (10), Location source (map), Application version (1.5.2), Location accuracy (50-100m), Data Source (android), Observation method (Camera trap), Observation type (Alive), Boar age (Piglet), and Sex (Unknown).
 - Comments:** A comment by 'smith. graham' 2 months ago, marked as 'Accepted as correct'. There is an 'Add new comment' field and a 'Save' button.
 - Map:** A map showing the location of the record, with a red pin and a green polygon indicating the area.
 - Photos and media:** A section showing a photo of a wild boar.
- Records List:** A table listing multiple records for Sus scrofa. The table has columns for Species, Common name, Location, Map ref., Date, Recorder, and Obs. type. Each row includes a small photo of the boar and a 'Print/trail' button.



IMAMALIA – DATA VALIDATION

In the management of ASF suspected cases, the validator may decide not to share the exact location of the animal

The screenshot shows the 'Verification' interface of the iMammalia application. At the top right, the language is set to 'Italian'. The navigation bar includes 'Home', 'Esplora le mie segnalazioni', 'Esplora tutte le segnalazioni', and a green 'Verifica' button. The breadcrumb trail shows the current page is 'Verification'. Below the search bar, there is a filter dropdown set to 'Select filter...' and buttons for 'Apply', 'Reset', and 'Create a filter'. A red error message 'Error loading control' is visible. The main table displays the following data:

ID	Src	Species	Common name	Location	Map ref.	VC no.	Date	Recorder	Determiner	Media	Check Last updated
23553699	122 57	Capreolus capreolus	Roe deer		54.19363 N 20.73665 E		2022-01-12				12/01/2022 14:19
23551430	122 57	Neovison vison	American mink		40.95739 N 5.64129W		2022-01-12				12/01/2022 08:32
23551429	122 57	Erinaceus europaeus	Western hedgehog		40.96482 N 5.6318W		2021-04-29				12/01/2022 08:30
23548178	122 57	Capreolus capreolus	Roe deer		52.26744 N 9.83808E		2022-01-11				11/01/2022 13:35
23532630	122 57	Sciurus carolinensis	Grey squirrel		SE70337 62		2022-01-10				10/01/2022 08:04
23532629	122 57	Lepus europaeus	Brown hare		55.33904 N		2022-01-10				10/01/2022 08:01

On the right side, a map of Europe shows several blue location markers. A 'Download' button is located at the bottom of the map area.



IMAMALIA – EMAIL ALERTS

1. Create an account via website <https://european-mammals.brc.ac.uk/en>
or
Download iMammalia app and register

2. Send email requesting the alert including:
type of record
country
users
if you want to be validator

to graham.smith@apha.gov.uk

The screenshot shows the iMammalia website interface. At the top, there is a navigation bar with the iMammalia logo, a language dropdown set to 'Italian', and links for 'Home', 'Esplora le mie segnalazioni', 'Esplora tutte le segnalazioni', 'Verifica', 'Profilo utente', and 'Esci'. Below the navigation bar, the page title is 'Verification'. There is a search bar and a status dropdown set to 'Pending'. A red error message 'Error loading control' is displayed. Below the error message is a table with the following columns: ID, Sp, Species, Common name, Location, Map ref., VC no., Date, Recorder, Determiner, Media, and Check Last updated. The table contains six rows of data:

ID	Sp	Species	Common name	Location	Map ref.	VC no.	Date	Recorder	Determiner	Media	Check Last updated
23553699	122157	Capreolus capreolus	Roe deer		54 19363 N 20.73665 E	12	2022-01-12	Bebiot, Marek			12/01/2022 14:19
23551430	122157	Neovison vison	American mink		40 85739 N 5.64129W	12	2022-01-12	Medio Ambiente, Iberiabird			12/01/2022 08:32
23551429	122157	Erinaceus europaeus	Western hedgehog		40 86482 N 5.6318W	29	2021-04-29	Medio Ambiente, Iberiabird			12/01/2022 08:30
23548178	122157	Capreolus capreolus	Roe deer		52.26744 N 9.83800E	11	2022-01-11	Hanebeck, Regina			11/01/2022 13:35
23532630	122157	Sciurus carolinensis	Grey squirrel		SE70337 363	62	2022-01-10	smith, graham			10/01/2022 08:04
23532629	122157	Lepus europaeus	Brown hare		55.33904 N	10	2022-01-10	Test, Flumens			10/01/2022 08:01

To the right of the table is a map showing the distribution of records across Europe. Below the map is a 'Download' button and a note 'Select a row to view details'.



REAL CASE



Example: ASF in Easter Europe: confirmed cases in the border Serbia-Romania)



Thank you very much for your attention



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