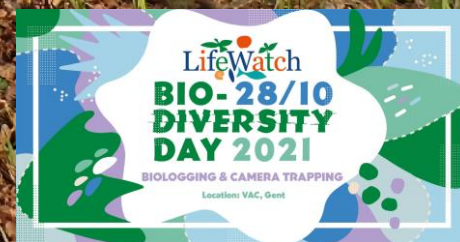


# The camera trap snowball effect

Jim Casaer



# Lifewatch – Catrein

- Start in 2016
  - Hardware (reliable, high performance) camera traps
    - High trigger speed (photo bursts)
    - No delay between triggers
    - Waterproof
  - Software
    - Managing camera trap projects, users, roles
    - Annotation, storing, archiving images

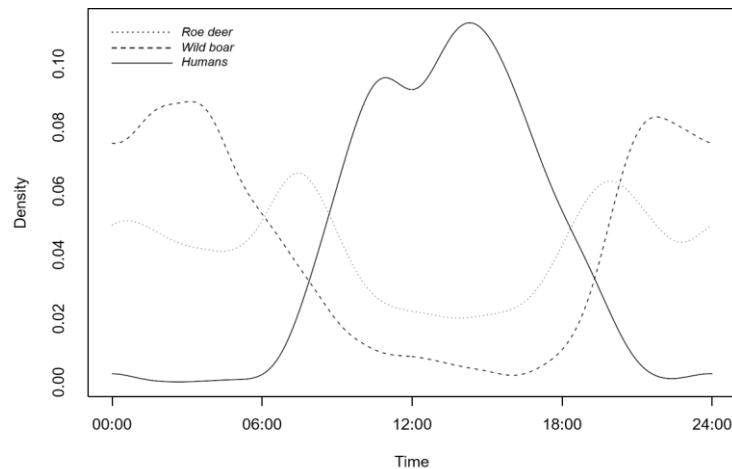
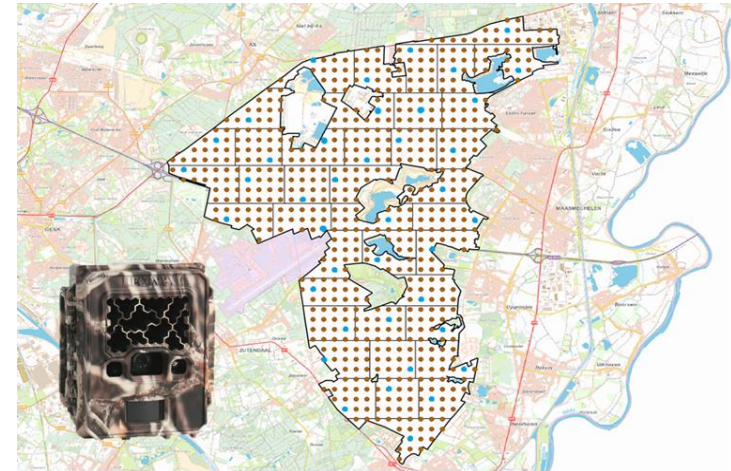
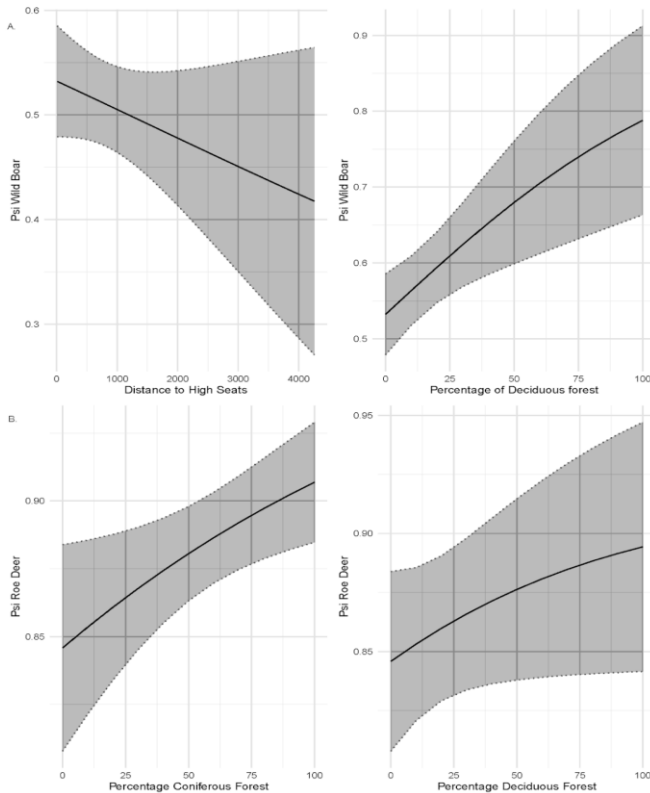


=> Agouti - WUR



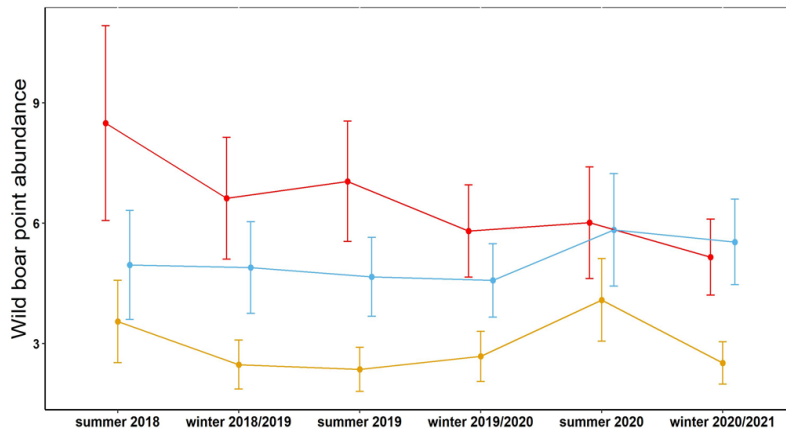
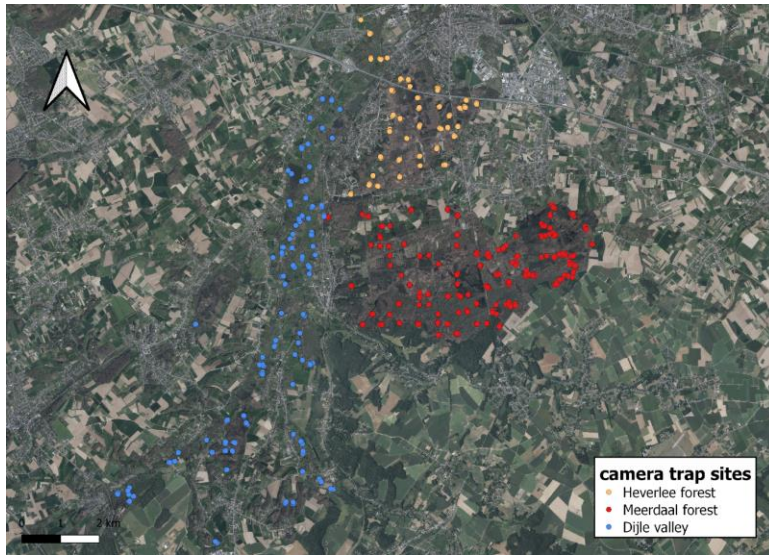


- PhD in collaboration UHasselt – Jolien Wevers (2017 – 2021)
  - Living in the Anthropocene: wild boar and roe deer ecology in a human-dominated landscape



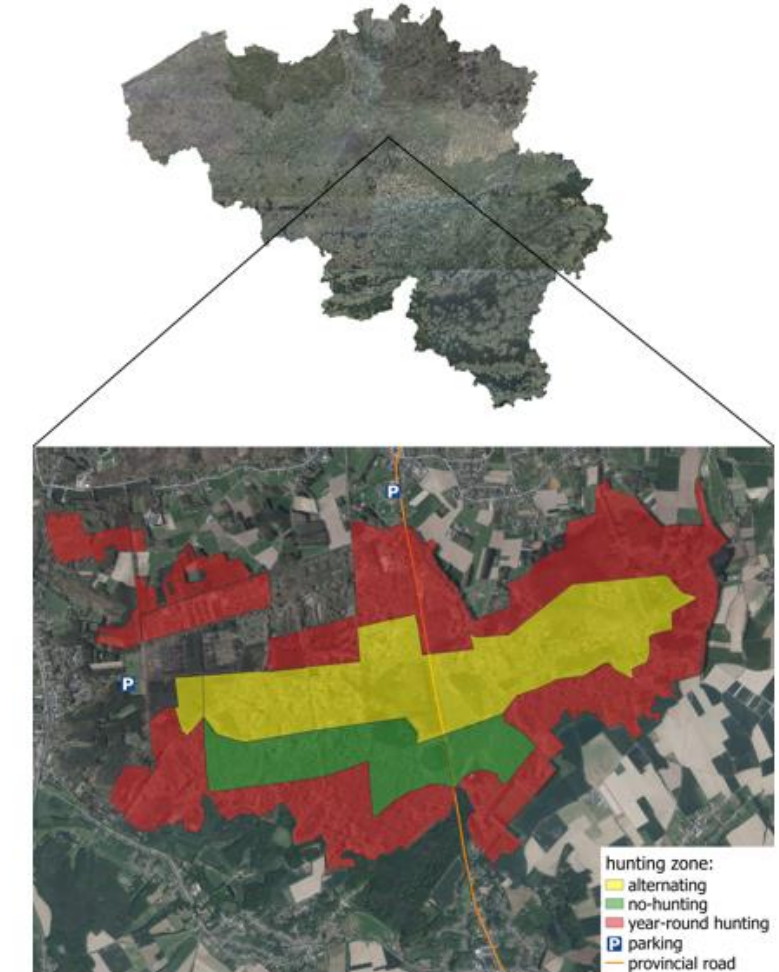
# Miel Cnuts – Msc

- Use of CT to study effect wild boar - management

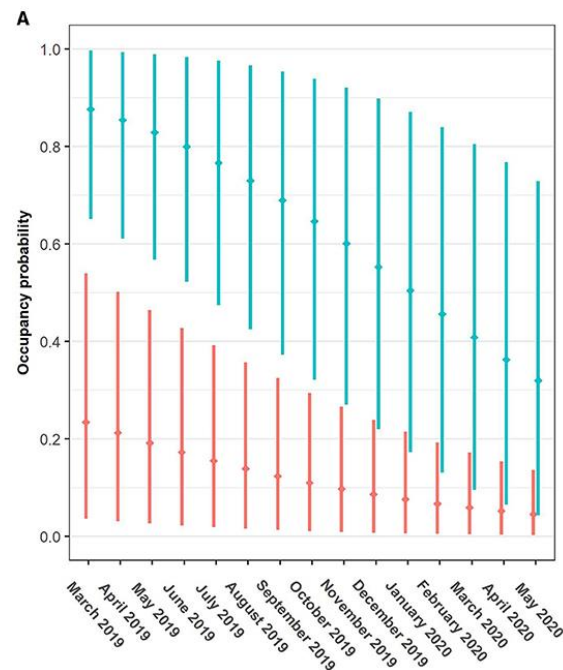
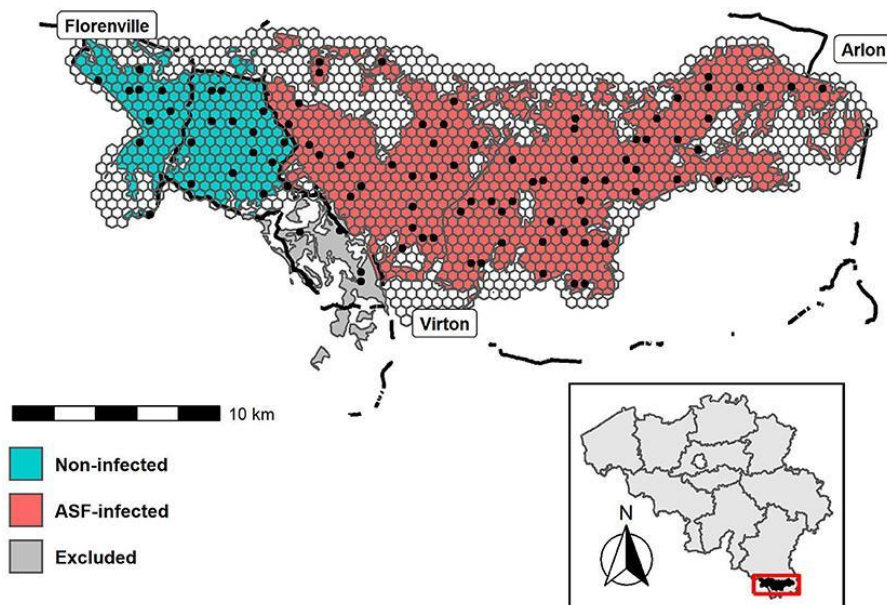


Sub-Area

- Meerdaal forest
- Heverlee forest
- Dijle valley



- PhD in collaboration UHasselt/KUL – Martijn Bollen
  - A Statistical Framework for Camera Trap Data Analysis in Ecological Research



## Managing African Swine Fever: Assessing the Potential of Camera Traps in Monitoring Wild Boar Occupancy Trends in Infected and Non-infected Zones, Using Spatio-Temporal Statistical Models

Martijn Bollen<sup>1,2,3\*</sup>, Thomas Neyens<sup>2</sup>, Maxime Fajgenblat<sup>2,4</sup>, Valérie De Waele<sup>5</sup>, Alain Licoppe<sup>5</sup>, Benoît Manet<sup>5</sup>, Jim Casaer<sup>3</sup> and Natalie Beenaerts<sup>1</sup>

<sup>1</sup>Centre for Environmental Sciences, UHasselt – Hasselt University, Hasselt, Belgium

<sup>2</sup>Data Science Institute, UHasselt – Hasselt University, Hasselt, Belgium

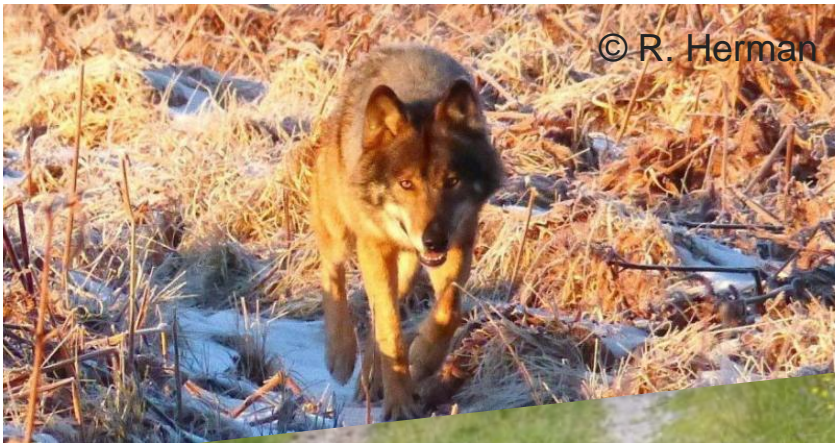
<sup>3</sup>Research Institute Nature and Forest, Brussels, Belgium

<sup>4</sup>Laboratory of Aquatic Ecology, Evolution and Conservation, KU Leuven – Leuven University, Leuven, Belgium

<sup>5</sup>Department of Natural and Agricultural Environment Studies, Public Service of Wallonia, Gembloux, Belgium



AGOUTI



© R. Herman



© SPW

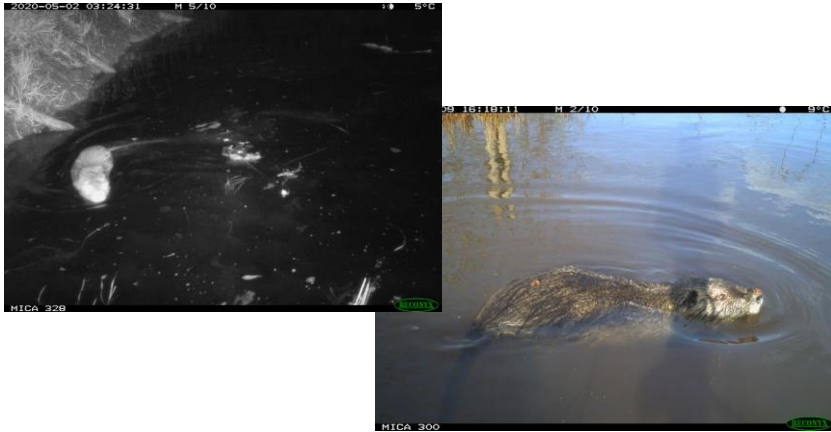


 **Wallonie**  
service public  
SPW

 **Vlaanderen**  
is wetenschap

  
BELGIUM

# IAS – management



Coypu



Muntjac



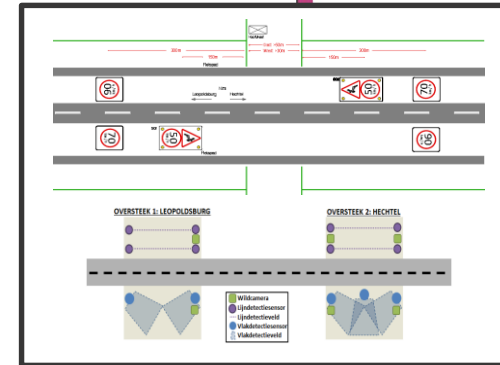
**MICA**  
Management of Invasive Coypu  
and muskrat in Europe



Muskrat



# Other management monitoring





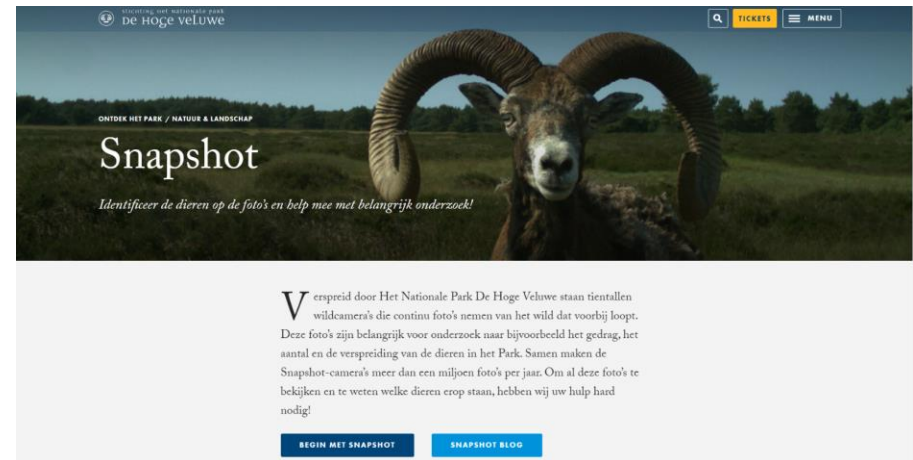


# Broadening the scope both topics and species

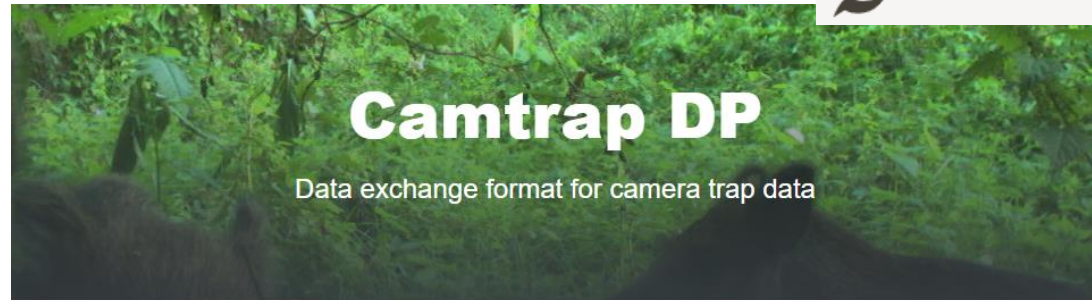
- Ecology of native species
  - Presence
  - Distribution
  - Habitat use
- Management of native species
  - Trends <- numbers, population growth, disease management
  - Distribution <- landscape of fear, human – wildlife interactions
- Management of IAS
  - Presence
  - Control

# Software development

- Goals
  - Tools for calculating densities
  - Artificial intelligence
    - Species recognition
  - Citizen Science
    - Snapshot
  - Standardized export
    - Standard
    - Export of
      - Data
      - Images



# Export



- Standardization
  - Agouti
  - Trapper
  - eMammal
  - Wildlife Insights
- Hosted
  - Biodiversity Information Standards (TDWG)

**Camera Trap Data Package** (or **Camtrap DP** for short) is a community developed data exchange format for camera trap data.

## Usage

A Camtrap DP is a **Frictionless Data Package** that consists of:

File	Description
<code>datapackage.json</code>	Metadata regarding the data package and camera trap project.
<code>deployments.csv</code>	Table with camera trap <b>deployments</b> .
<code>media.csv</code>	Table with <b>media</b> files captured by the camera traps.
<code>observations.csv</code>	Table with <b>observations</b> based on the media files.

# Export



OCCURRENCE DATASET | REGISTERED NOVEMBER 13, 2020

## MICA - Muskrat occurrences collected by RATO in East Flanders, Belgium

Published by Research Institute for Nature and Forest (INBO)

Van Moer K • Broens D • Cartuyvels E • Adriaens T • Baert K • Devisscher S • Neukermans A • Huysentruyf F

DATASET PROJECT METRICS ACTIVITY DOWNLOAD HOME PAGE

3,153 OCCURRENCES 3 CITATIONS

MICA - Muskrat occurrences collected by RATO in East Flanders, Belgium is an occurrence dataset published by the Research Institute for Nature and Forest (INBO). It is part of the LIFE project MICA, in which innovative techniques are tested for a more efficient control of muskrat and coypu populations, both invasive species. This dataset contains muskrat trap captures. Here it is published as a standardized Darwin Core Archive and includes for each occurrence record an occurrenceID, date, locatio... More



Project ID: LIFE18 NAT/NL/001047

Publication date: October 22, 2021

Metadata last modified: October 22, 2021

Hosted by: Research Institute for Nature and Forest (INBO)

License: CC0 1.0

How to cite DOI 10.15468/5fp996

100% With taxon match

100% With coordinates

100% With year



Search

Upload Communities

Log in Sign up

October 21, 2021

Dataset Open Access

## MICA - Muskrat and coypu camera trap observations in Belgium, the Netherlands and Germany

Cartuyvels, Emma; Adriaens, Tim; Baert, Kristof; Broens, Dimitri; Casser, Jim; Devisscher, Sander; Donckers, Dennis; Fritz, Heiko; Huysentruyf, Frank; Lodewijck, Jan; Maistrelli, Claudia; Neukermans, Axel; Sloommaekers, Dan; Van der beeck, Danny; Desmet, Peter

MICA - Muskrat and coypu camera trap observations in Belgium, the Netherlands and Germany is a camera trap observations dataset published by the Research Institute of Nature and Forest (INBO). It is part of the LIFE project MICA, in which innovative techniques are tested for a more efficient control of muskrat and coypu populations, both invasive species. The dataset contains camera trap observations of muskrat and coypu, as well as many other observed species.

Data in this package are exported from the camera trap management system Agouti (<https://agouti.eu>) and formatted as a Camera Trap Data Package (Camtrap DP).

### Files

Files are structured as a Frictionless Data Package. You can access all data in R via <https://zenodo.org/record/5590881/files/datapackage.json> using datapackage.

- datapackage.json**: technical description of the data files.
- deployments.csv**: camera trap deployments. Includes `deploymentID`, start, end, location and camera setup information.
- media.csv**: media files (images/videos) captured by the camera traps. Associated with deployments (`deploymentID`) and organized in sequences (`sequenceID`). Includes timestamp and file path.
- observations.csv**: observations based on the media files. Associated with deployments (`deploymentID`) and sequences (`sequenceID`). Observations can mark non-animal events (camera setup, human, blank) or one or more animal observations (`observationType` = `animal`) of a certain taxon, count, age, sex, behaviour and/or individual.

This dataset was collected using infrastructure provided by INBO and funded by Research Foundation - Flanders (FWO) as part of the Belgian contribution to LifeWatch. The data were collected as part of the MICA project, which received funding from the European Union's LIFE Environment sub-programme under the grant agreement LIFE18 NAT/NL/001047. The dataset was published with funding from Stichting NLBIF - Netherlands Biodiversity Information Facility.

Preview

259

views

177

downloads

See more details...

Indexed in



### Publication date:

October 21, 2021

### DOI:

### Keyword(s):

camera trap biology mammals Agouti  
Camtrap DP frictionlessdata

### Related identifiers:

Source of  
10.15468/5fb6ze (Dataset)

### Communities:

Agouti - A platform for managing wildlife camera trapping projects  
Research Institute for Nature and Forest (INBO)  
LifeWatch Belgium  
NLBIF  
Open science lab for biodiversity

### License (for files):

Creative Commons Zero v1.0 Universal



# Artificial Intelligence



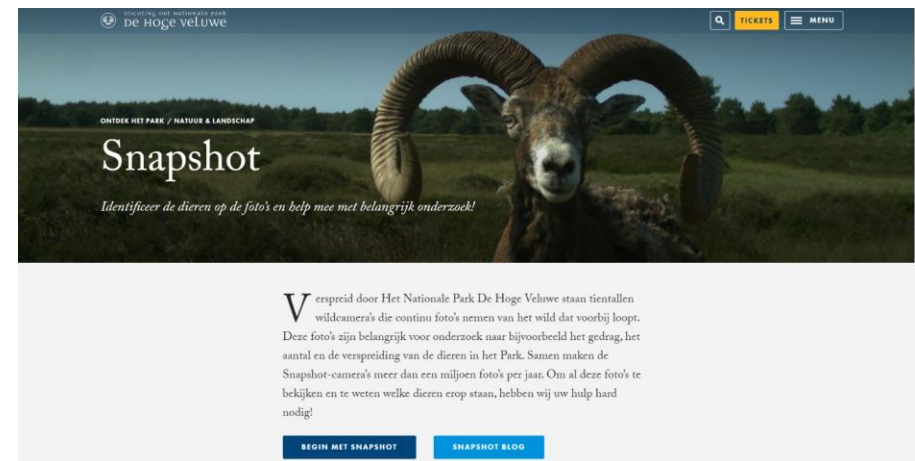
## Onafgeronde Fotoseries

Total results: 225

Meetpunt	Begin	Einde	Fotoreeksen	Voortgang	
B_HS_val 3_meander ANB	02/10/2020 00:08	02/11/2020 07:21	108	<div style="width: 56%; background-color: #0070C0;"></div> <div style="width: 33%; background-color: #70AD47;"></div> 56% 33%	Annotheren Al is klaar ..
B_ML_val 01_vrouwkeshoek	04/03/2021 01:45	01/04/2021 07:47	248	<div style="width: 30%; background-color: #0070C0;"></div> <div style="width: 45%; background-color: #70AD47;"></div> 30% 45%	Annotheren Al is klaar ..
B_ML_val 04_Roeselaerekreek	10/11/2020 19:34	08/12/2020 09:12	280	<div style="width: 3%; background-color: #0070C0;"></div> <div style="width: 43%; background-color: #70AD47;"></div> 3% 43%	Annotheren Al is klaar ..
B_ML_val 03_De Val	03/03/2021 23:32	01/04/2021 08:10	227	<div style="width: 40%; background-color: #0070C0;"></div> 40%	Annotheren Al is klaar ..

# Software development

- Goals
  - Citizen Science
    - Snapshot
    - => on hold
      - AI
      - No budget
  - Tools for calculating densities



**MAMMALNET**  
WATCH WILDLIFE FOR SCIENCE



RESEARCH INSTITUTE  
NATURE AND FOREST



Interuniversity Institute for Biostatistics  
and statistical Bioinformatics



**MAMMALNET**  
WATCH WILDLIFE FOR SCIENCE



Contact : jim.casaer@inbo.be