# **Muskrat catches in Flanders 1991-2018**

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**Resource Citation**: IPT > Citations > Resource citation. Leave empty until the paper is accepted by editor.

**Resource Citation**:

## Abstract

IPT > Basic metadata > Description

The Research Institute for Nature and Forest (INBO) has been collecting and analyzing muskrat catch data since 1991. These data are provided by the different management actors: the Flemish Environment Agency, Rattenbestrijding Oost-Vlaanderen (RATO vzw), provincial and municipal trappers and Polders and Wateringen. This dataset represents all catches of muskrats made in Flanders and neighboring regions between 1991 and 2018. It contains almost 450 000 records. This dataset is being published as part of the Life MICA project.

## Keywords

IPT > Keywords: all keywords

Muskrat, invasive alien species , occurrence, observation, Life

## Data published through

http://dataset.inbo.be/ dataset-shortname

The occurrence datasets are available at: GBIF:

## Rationale

IPT > Additional metadata > Purpose

Muskrat catch data are collected by the Research Institute for Nature and Forest (INBO) to monitor muskrat populations and the efficiency of their management in Flanders. Management has been going since 1938 and although some data collection happened before 1991 (e.g. Geeraerts-Bracops (1974)) it is only from this point forward that all catches were collected systematically per month and per municipality. Since management was and is spread over different management actors (the Flemish Environment Agency, Rattenbestrijding Oost-Vlaanderen (RATO vzw), provincial and municipal trappers and Polders and Wateringen) data needed to be integrated to get a full view of the status of muskrat populations in Flanders and their management. More recently this dataset has also been used to report on the management of Invasive Alien Species of Union Concern (Regulation (EU) 1143/2014).

## Collection

IPT > Collection Data > Collection

The collection metadata for the resource includes the *Collection Name* ; *Collection Identifier*; *Parent Collection Identifier* and the *Specimen preservation method*

### Curatorial units

Enter the counts of curatorial units covered by the resource. You may enter the count as a range or as a value with an uncertainty. Examples of units include skins, sheets, pins, boxes, jars.

Add *Method Type* Between and ; and *Unit Type*

None

## Taxonomic coverage

IPT > Taxonomic coverage > Description

The dataset only contains occurences of muskrat (*Ondatra zibethicus*).

### Taxonomic ranks

IPT > Taxonomic coverage > Ranks

**Kingdom**: *Animalia* **Class**: *Mammalia* **Order**: *Rodentia* **Family**: *Cricetidae*

## Geographic coverage

IPT > Geographic coverage > Description

Flanders is one of the three administrative regions in the country of Belgium, located in the centre of Western Europe. The Flemish region is situated in the north of the country and covers an area of 13,522km² (44,29% of Belgium). Belgian has a temperate maritime climate that is influenced by the North Sea and the Atlantic Ocean with substantial precipitation in all seasons. The summer is moderate and the winters are mild. The two main geographical regions of Flanders are the coastal plain in the North-West and the Central plain, further inland. With 470 inhabitants/km², Flanders is one of the most densely populated areas of Europe. The three major rivers are the River Yser, the River Scheldt, and the River Meuse. All rivers in Flanders flow into the North Sea, but only the River Yser drains directly into the sea within the jurisdiction of Flanders.

### Geographical method optional

Geographical method is not provided in the IPT metadata as such.

### Bounding coordinates

IPT > Geographic coverage > Coordinates

-90° to 90° latitude, -180° to 180 longitude

Flanders: 50.68 to 51.51 latitude, 2.54 to 5.92 longitude.

## Temporal coverage

IPT > Temporal coverage

1992-01-01 to 2018-12-31

## Dataset

### Dataset description

*Technical description of how the dataset was built. Does not appear in the IPT metadata.*

Data were submitted by the different management actors on either a monthly or yearly basis. Initially these submission where done by mailing the monthly numbers which were then digitalized in Excel spreadsheet. Since the early 2000’s all management actors have switched to submitting their catches in Excel spreadsheets.

The occurrence data from the VIS database are extracted, standardized, and published as two separate Darwin Core Archives: one for inland waters and one for estuarine waters. The main rationale behind this is that both datasets cover different habitats, differ in sampling strategies and methods, and are curated by different scientists. Nevertheless the data model used for inland waters and estuarine waters is identical and can be easily merged: together these datasets represent a complete overview of fish distribution in Flanders from late 1992 to the end of 2012. In 2013 a new set of sampling locations was defined and the data collected since then is currently only available upon request.

The data are standardized to Darwin Core with a custom SQL view (figure 10) on the original VIS database. The Darwin Core terms (<http://rs.tdwg.org/dwc/terms/>) in the dataset at the time of publication are: occurrenceID, type, language, rights, rightsholder,datasetID, institutionCode, collectionCode, datasetName, ownerInstitutionCode, basisOfRecord, informationWithheld,catalogNumber, recordedBy, individualCount, samplingProtocol, samplingEffort, eventDate, habitat, locationID, continent,waterBody, countryCode, verbatimLocality, verbatimLatitude, verbatimLongitude, verbatimCoordinateSystem, verbatimSRS,decimalLatitude, decimalLongitude, geodeticDatum, coordinateUncertaintyInMeters, identifiedBy, scientificName, kingdom,taxonRank, scientificNameAuthorship, vernacularName, and nomenclaturalCode.

The data are dedicated to the public domain under a [Creative Commons Zero waiver](http://creativecommons.org/publicdomain/zero/1.0/). We would appreciate it if you follow our [norms for data use](https://github.com/LifeWatchINBO/norms-for-data-use) and notify the corresponding authors of the respective dataset if you use the data, especially for research purposes.

* **Object name**: title
* **Character encoding**: UTF-8
* **Format name**: Darwin Core Archive format
* **Format version**: 1.0
* **Distribution**: http://dataset.inbo.be/ dataset-shortname
* **Publication date of data**: yyyy-mm-dd of first publication
* **Language**: IPT > Basic metadata > Resource language
* **Licenses of use**: http://creativecommons.org/publicdomain/zero/1.0/ & norms
* **Metadata language**: IPT > Basic metadata > Metadata language
* **Date of metadata creation**: yyyy-mm-dd of first publication
* **Hierarchy level**: Dataset
* **Object name**: VIS - Fishes in inland waters in Flanders, Belgium
* **Character encoding**: UTF-8
* **Format name**: Darwin Core Archive format
* **Format version**: 1.0
* **Distribution**: http://dataset.inbo.be/vis-inland-occurrences
* **Publication date of data**: 2013-12-20
* **Language**: English
* **Licenses of use**: http://creativecommons.org/publicdomain/zero/1.0/ & https://github.com/LifeWatchINBO/norms-for-data-use
* **Metadata language**: English
* **Date of metadata creation**: 2013-12-20
* **Hierarchy level**: Dataset

### Additional information

IPT > Additional metadata > Additional information

Length and weight measurement data of the individual fishes, absence information, occurrence data since 2013, as well as abiotic data of the sampling points (pH, temperature, etc.) are not included in the Darwin Core Archives and are available upon request.

### Usage norms

Norms on how to use the data. Does not appear in the IPT metadata. Or a link to the Lifewatch github repo on usage and norms should be provided, or provide norms and usage guidelines in text.

Give credit where credit is due

As is common practice in scientific research, cite the sources you are using. Researchers, volunteers, and personnel have invested a lot of time and effort in creating and publishing the biodiversity information you are using, and they deserve credit for their work. For scholary publications, follow the citation practices that apply or the [GBIF best practices on data citation](http://www.gbif.org/resources/2381). In any other context, include at least a link to the original dataset if technically feasable (e.g. http://dataset.inbo.be/bird-tracking-gull-occurrences).

Be responsible

Use the data responsibly. The data are published to allow anyone to better study and understand the world around us, so do not use the data in any way that is unlawful, harmful, or misleading. Understand that the datasets are subject to change, errors, and sampling bias. Read the metadata to better understand the scope and original intent of the dataset.

Respect the data waiver

To help you [make greater use of the data](http://www.canadensys.net/2012/why-we-should-publish-our-data-under-cc0), we try to dedicate all our data to the public domain under a [Creative Commons Zero (CC0)](http://creativecommons.org/publicdomain/zero/1.0/)waiver. Do not provide false or misleading information about the open status of the data.

Get in touch

Get in touch! We are always interested to know how you have used or visualized the data, or to provide additional information and data. It helps both of us reach a wider audience and could be the start of a great collaboration. Our contact information can be found in the metadata or you can reach us at [@LifeWatchINBO](https://twitter.com/LifeWatchINBO). You can also report dataset issues via [GitHub](https://github.com/LifeWatchINBO/data-publication-guidelines/blob/master/datasets.md).

## Discussion optional

Discussion of the dataset. Does not appear in the IPT metadata. A discussion is optional in a data paper.

## History of the dataset optional

History of the dataset does not appear in the IPT metadata. The history of the dataset section is optional in a data paper.

## Methodology

### Study extent description

IPT > Sampling methods > Study extent

Muskrats were introduced in 1928 in Belgium as a fur animal. As early as 1938, its eradication was ordered, making the muskrat control program one of the longest standing control programs for any organism in Belgium. Since then, there have been many different actors and control methods, and today the control is still spread over several management actors and public authorities.

In 1991 control was organized at the municipal level, many of whom hired private firms to control muskrats (Stuyck, 2002). Catches, bait use, effort and bycatches (most of the time) were submitted monthly to Landelijke Waterdienst /AMINAL - afdeling Water by mail. Muskrat control in Flanders was regionalized and strongly professionalized at the end of the 1990's. For-profit trapping and the fur trade of muskrats was banned. The Flemish Environment Agency became responsible for controlling muskrats on all streams under Flemish regional jurisdiction. They are complemented by other management actors, such as provincial and municipal trappers, Rattenbestrijding Oost-Vlaanderen (RATO vzw) and Polders and Wateringen.

Before 2000, baits infused with rodenticides were used to control muskrats. These catches were seldom registered as animals could not be recovered. It is therefore likely that reported catches up until this point in time are an underestimation. Since 2000, Flanders has banned the use of rodenticides for muskrat control and the control is performed purely mechanical using various types of traps. These traps will be laid out either at fixed distances close to the regional borders as a passive control mechanism or they will be placed where traces of muskrat presence are reported as active control mechanisms (Verbeylen & Stuyck 2002). These traps are controlled minimally each week but at high densities it is more likely that a trapper will check them each day. The date of an observation is therefore the date that the animal was retrieved from the trap.

### Sampling description

IPT > Sampling methods > Sampling description

Trapping techniques used in Flanders are described in the best practice of Stuyck (2016).

### Quality control description

IPT > Sampling methods > Quality control

### Method step description

IPT > Sampling methods > Step description: all steps

## Project data

### Project title

IPT > Project data > Title

### Personnel

Combination of IPT > Basic metadata > Resource contact/Resource creator/Metadata provider, IPT > Associated parties, andIPT > Project data > Personnel.

* **Principal investigators**:
* **Resource contact, resource creator, point of contact**:
* **Metadata provider**:
* **Content providers**:
* **Developer**:
* **Processors**: Dimitri Brosens, Peter Desmet

### Project title

Life MICA, Muskusratonderzoek in kader van optimalisatie van bestrijding

### Personnel

* **Principal investigator**: Emma Cartuyvels, Jan Stuyck
* **Resource contact, resource creator, metadata provider, point of contact**: Emma Cartuyvels
* **Content providers**: Emma Cartuyvels, Jan Stuyck
* **Developer**:
* **Processors**: Dimitri Brosens, Sander Devisccher

### Funding

IPT > Project data > Funding

### Funding

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## Acknowledgements

Does not appear in the IPT metadata.

The authors would like to thank all the different management actors: the Flemish Environment Agency, Rattenbestrijding Oost-Vlaanderen (RATO vzw), provincial and municipal trappers and Polders and Wateringen for providing the data and continuing to improve the quality of data collected. We also thank everybody who contributed to the creation of these datasets and paper, including [GBIF](http://www.gbif.org/).

## References

IPT > Citations > Bibliography

### references cited within the metadata

Geeraerts-Bracops, M. (1974). De strijd tegen de muskusratten. Informatiedossier n° 3. Gemeentekrediet-Leefmilieu, België.

STUYCK, J. (2002). De muskusrat, Ondatra zibethicus, in Vlaanderen: introductie, verspreiding en... een jarenlange bestrijding. BULLETIN DE L'INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE BIOLOGIE, 72, 241-246.

Stuyck, J. (2016). Code voor goede praktijk voor het vangen van de muskusrat, Ondatra zibethicus, in Vlaanderen. Implementatie van Europese Overeenkomst inzake internationale normen voor de humane vangst van dieren met behulp van vallen. Brussel: Instituut voor Natuur- en Bosonderzoek.

### references based on this dataset

### references describing the dataset

1. Affiliation. See IPT > Basic metadata > Resource contact/Resource creator/Metadata provider and IPT > Associated parties for contact information. ↩
2. Research Institute for Nature and Forest (INBO), Kliniekstraat 25, 1070, Brussels, Belgium ↩