



Muskrat

(*Ondatra zibethicus*)

Managing muskrats in the Somme department

Departmental river and maritime agency

- The agency became part of the operational and infrastructure-maintenance directorate of the departmental council as of 1 January 2008.
- The agency works on the public river and maritime domain of the Somme department, i.e. 720 hectares comprising 120 kilometres of waterways and tow-paths as well as 30 km of natural rivers and discharge channels.
- The main missions include:
 - management of visits to and activities in the river domain (river tourism and traffic, fishing, boating, hiking, etc.);
 - maintenance and work on the banks;
 - maintenance and upgrading of structures;
 - IAS management by an "IAS unit" that traps rock doves and European rabbits, manages invasive alien plant species along the Somme canal (Japanese knotweed, water primrose, summer lilac, giant hogweed, garden balsam and goldenrod) and controls muskrats.
- Contacts: David Dhennin - d.dhennin@somme.fr, head of the Canal operating and infrastructure service, Somme departmental council;
- Jean-Louis Derosière - jlderosiere@somme.fr, head of the IAS unit.

Intervention site

- The Somme department comprises over 1 000 kilometres of river, 6 000 hectares of water bodies and a wide array of highly diverse wetlands. The basin of the Somme River spans the entire department. The river begins in the Aisne department and flows to the Somme Bay.
- The IAS unit operates in part in the public river and maritime domain, which is simply the river basin from Sourmont to the estuary.
- For muskrats, the unit also works in sectors outside the domain on tributaries to the Somme, on the Bresle and Authie Rivers (two coastal rivers just outside departmental limits) and on the Marquenterre area (low-lying fields, ditches, etc.).
- On the other hand, the unit is not responsible for other types of water bodies (public and private marshes, ponds).



1. The basin of the Somme River and the hydrographic network of the Somme department.

Disturbances and issues involved

- Muskrats have very few predators in France, with the exception of humans, foxes and skunk, which explains their very wide dispersion
- **Impacts on the environment**
 - The animals dig burrows, leading to the collapse of river banks.
 - They can also reduce plant cover.
 - Muskrats compete with native species such as the European water vole.
 - They are also predators of native species (amphibians and anodonta (freshwater mussels)).
- **Impacts on agriculture and vegetable farming**
 - The animals occasionally eat crops.
- **Impacts on structures**
 - The damage to river banks can weaken structures (dikes, bridges).
 - Muskrats eat the bark of willow trees planted on the banks.
- **Impacts on health**
 - The animals can pollute fresh waters with their urine and feces, creating a risk of transmission of diseases (leptospirosis and echinococcosis) to humans and livestock.
 - These disturbances resulted in the signing of a prefectural order on 28 June 2007, listing muskrats among "pests" in the Somme department.

Interventions

- In managing muskrats in the Somme department, the IAS unit decided in favour of a highly regulated technique, trapping. Trapping activities must be declared annually in each town hall.
- Human resources and equipment:
 - four professional trappers including one general purpose (maintenance of river equipment, operations);
 - the trappers each work a separate geographic sector except along the Somme canal where they work together;
 - three 4-wheel drive vehicles are used;
 - a motorised boat is available.
- Two types of trap are used:
 - category-1 traps (declaration in town hall required, but no certification), e.g. cage traps with plant bait;
 - category-2 traps (require certification), e.g. conibear traps, steel-jaw traps.
- Trapping is carried out throughout the year. Sites are selected depending on the number of animals present.
- The abundance of muskrats is determined according to the damage done to banks.
- Traps are checked daily before noon in compliance with the applicable regulations.



2. Burrows dug into a bank.

Results and assessment

■ Results for 2012

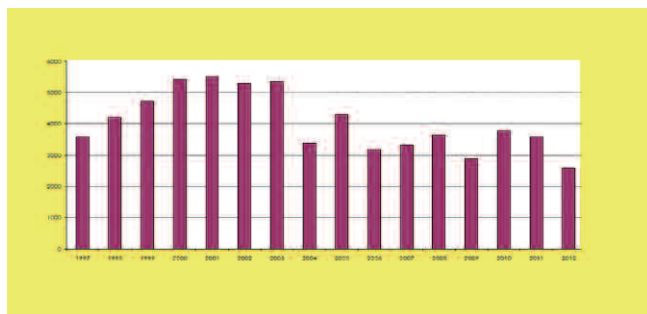
- Traps were laid approximately 10 000 times.
- A total of 2 594 muskrats were captured.
- Quantitative capture data has been collected since 1997. The number of captures varies from one year to the next, depending on several factors, including the reproductive success of the species, weather conditions, hydrological (water-level) conditions and possible access to areas by trappers. It should be noted that the number of trappers can also vary from one year to the next.

Muskrat captures in 2012. Source ADFM.

Mois	Musk rats trapped in the public river and maritime domain	Musk rats trapped outside of the public river and maritime domain	Total per month
January		457	457
February		345	345
March		314	314
April	53	34	87
May	30		30
June	80	26	106
July	32		32
August			0
September		9	9
October	25	287	312
November	67	512	579
December		323	323
Annual total	287	2 307	2 594



Muskrats trapped per unit of effort from 1997 to 2012.



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3. A muskrat captured in a cage trap.

■ Assessment of Jean Louis Derosière, trapper and head of the IAS unit

- On the whole, the number of trapped muskrats has decreased.
- The decrease in the number of muskrats in the Somme department is linked to the increase in the red fox (*Vulpes vulpes*) population.
- Captures have increased from September to March and particularly from November to March, the reproductive season.

■ Difficulties encountered

- The safety distances for category-2 traps (more than 200 metres from homes and 50 metres from public roads) were a major constraint, particularly along the Somme canal.
- Volunteer trappers rarely worked on private properties and on ponds and lakes, most likely given the insufficient financial incentives.
- It was difficult to access the banks of certain rivers and ditches not maintained by local residents.

Information on the project

- An annual report on muskrat management is drafted and distributed to partners (departmental territorial and maritime agency, Somme hunting federation and the National agency for hunting and wildlife).
- Information on the trapping campaigns is included in the declarations to each town hall.
- Training is provided to volunteers on the equipment used to trap muskrats, e.g. for the game wardens of the Somme fishing federation.

Outlook

- The presence of new invasive alien species in the hydrographic network is monitored:
 - information is relayed to the managers of the hydrographic network;
 - personnel are trained to recognise the species by the Bailleul national botanical conservatory.

Note on applicable regulations

- The species may not be introduced into the natural environment (ministerial decree dated 30 July 2010).
- Possession of the species is subject to an authorisation (ministerial decrees dated 10 August 2004).
- The species is listed among those that may be hunted (ministerial decree dated 26 June 1987).
- The species is considered a pest throughout continental France (ministerial decree dated 24 March 2014).
- The species is harmful to plants and must be controlled (ministerial decree dated 31 July 2000, modified by ministerial decree dated 25 August 2011).
- The conditions for the control of coypu and muskrat populations were set by decree dated 6 April 2007.
- Trapping conditions for animals declared as pests were set by decree dated 27 June 2009, modified by the decree dated 13 December 2011.

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For more information

- Internet site of the Somme hunting federation:
<http://www.fdc80.com/20-la-fdc80/45-le-piegeage.html>
- Internet site of the National union of certified trappers:
<http://www.unapaf.com/pieges.php>
- Meresse G. 2008. La lutte contre le Rat musqué dans la Somme. État des lieux, proposition. Rapport de stage, 48 pp.
- ADFM, 2013. Évolution des captures de rat musqué par l'unité "gestion des espèces invasives" du Conseil général.
- ADFM, 2013. Indicateurs de lutte contre les espèces invasives 2012.
- Boidin R. 2012. L'agence départementale fluviale et maritime. La lutte contre les espèces invasives et la maintenance des équipements de loisir, 29 pp.
- Présentation « Régulation du Rat musqué *Ondatra zibethicus* par le Conseil général de la Somme », séminaire Onema-Cemagref « Gestion des espèces invasives en milieu aquatique », oct. 2010.
- Document de France nature environnement : « Ragondin, Rat musqué, stop au poison. Les alternatives à l'utilisation des anticoagulants en milieu naturel ».
- Presentation of the Somme river basin on the site of the Somme basin management board:
<http://www.ameva.org/?q=content/lebas-sin-versant/>

