

Status of the Eurasian otter (*Lutra lutra*) in Switzerland

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ABSTRACT

Between the late 19th and early 20th century, the Eurasian otter had been persecuted in Switzerland as a nuisance animal. Federal funding was provided in order to eradicate the species. Additionally, habitat alterations and environmental pollutants played an important role in the decline of the species throughout the 20th century. The last signs of otter presence were found in 1989, after which Switzerland was devoid of wild otters until 2009 when an otter was detected by an automatic camera in a fish pass. Since then, several individuals have been observed in different regions of Switzerland. In two areas, otters have already reproduced successfully. The federal office for nature protection has launched a national working group to coordinate ongoing initiatives concerning otters between different stakeholders.

Keywords: *Lutra lutra*, status, distribution, Switzerland.

EXTINCTION: A NATIONAL ERADICATION PROGRAMME

The Eurasian otter (*Lutra lutra*) was widespread in Switzerland until the mid-19th century. At that time, the population was estimated to consist of more than 1,000 individuals (Weber, 1990). In 1888, the Swiss government launched a fishery bill, which aimed to eradicate the otter – and other fish predator species – using bounty payments for dead otters. The state also organized courses for otter hunters, provided otter traps for free and even employed state hunters. This eradication programme was so successful that, by 1917, 2,000 otters had been killed and the species was considered rare across Switzerland. A nationwide survey in the 1950s (Krebser, 1959) estimated the population of 100 individuals. In 1952, the species was finally protected by the federal hunting law. Nevertheless, the population continued its decline and by 1975 only some 15 animals remained. At this time, a reintroduction programme was established with eight individuals from Bulgaria being released into the Schwarzwasser river catchment. However, the project failed as a sustainable population could not be established, nor did they reinforce the remaining few individuals in other regions (Weber et al., 1991). In 1989, the last signs of an otter (spraints) in Switzerland were found around Lake Neuchâtel on the Swiss plateau (Weber, 1990). From then on, Switzerland was officially ‘otter free’.

Although direct persecution played an important role in the decline of otters in Switzerland until the early 20th century, habitat alterations and environmental pollutants may have also been major drivers from the 1940s onwards. The landscape was altered massively with watercourses being canalized, diverted underground or used for hydropower generation. This resulted in a loss of habitat and had a negative influence on the abundance of prey.

THE RETURN OF THE OTTER TO SWITZERLAND

In the late 1990s, the otter started to recover in neighbouring countries. This initiated new national surveys by the Foundation Pro Lutra, first along the borders of Switzerland (Kranz et al., 2008) and few years later also along large rivers of Switzerland. While no otter presence was noted in 2010 (Kranz and Poledník, 2012), the national survey in 2016 revealed several areas with otter presence (Weinberger, 2017). The first survey of smaller watercourses in Switzerland was conducted in 2017 as a Citizen Science project called ‘Otterspotter’, coordinated by Pro Lutra and local WWF branches. It focuses on the detection of otter presence within small rivers and streams in the cantons of Bern and Solothurn (Weinberger et al., 2018). The survey shall be repeated every two years. However, a large contributor to the knowledge of otter presence in many parts of Switzerland still remains chance observations by trail cameras set up for other projects by canton game wardens or by the general public.

RHEINE CATCHMENT

Thirty years after the last signs of an otter in Switzerland, an individual was spotted again in 2009. An automatic camera in a fish pass on the river Rheine in

the canton of Grisons recorded an otter hunting for fish (No. 1 in Figure 1. NB: All numbers in the following text refer to the numbers in Figure 1). Another otter, most likely the same animal, was registered again in 2010 in the same fish pass but no signs could be found thereafter.

In 2013, a plausible observation of an otter was made near Buchs in the canton of St Gallen (No. 2).

In February 2015, otter spraints were found in Cazis in the canton of Grisons on the river Rheine (No. 1). Since then, otter signs have been found in this area over a 40-km reach.

RHONE CATCHMENT

In December 2011, tracks in the snow were found on the river Trient in the canton of Valais near the French border to the Haute-Savoie (No. 3). While no more signs of otter presence were detected in the Swiss part along the border, several spraints were detected on the French side over a period of eight months.

In November 2013, an otter was observed on the river Rhone in the canton of Geneva. From March to December 2014, an individual was photographed regularly by a trail camera in the same area (No. 4), after which the animal disappeared. The presence of an otter was not registered again in that region until October 2018. While there are no verified observations between 2014 and 2018 in the canton of Geneva, two plausible observations had been made in the adjoining Lake Geneva during that time (No. 5).

PO CATCHMENT

In August 2012, an adult male otter was killed by a car in Tovo (I) near the Swiss border (No. 6). In May 2013, an adult male was killed in Prato in the canton of Ticino (No. 7). In November 2016, fresh spraints were found on the river Ticino near Quinto in the canton of Ticino (No. 7). Since then, no further otter signs have been found by the cantonal authorities.

INN CATCHMENT

In June 2017, an adult male otter was killed by a car near the river Inn in Enntbruck (A) near the Swiss border (No. 8). By September 2017, otters had naturally recolonized the river Inn in the canton of Grisons. An otter was first detected by a trail camera at Samedan (No. 9). Just a month later, a female otter with her cub was photographed in the area by a trail camera. This was the first record of natural reproduction of wild otters in Switzerland since their eradication in 1989. A year later, in November 2018, a second reproduction with two cubs was recorded near Samedan. As no otter presence had been detected in the systematic surveys of 2010 and 2016, these otters must have arrived following the national surveys (Kranz and Polednik, 2012; Weinberger 2017). Since April 2018, otter spraints have also been found regularly on the river Inn near Scuol (No. 10).

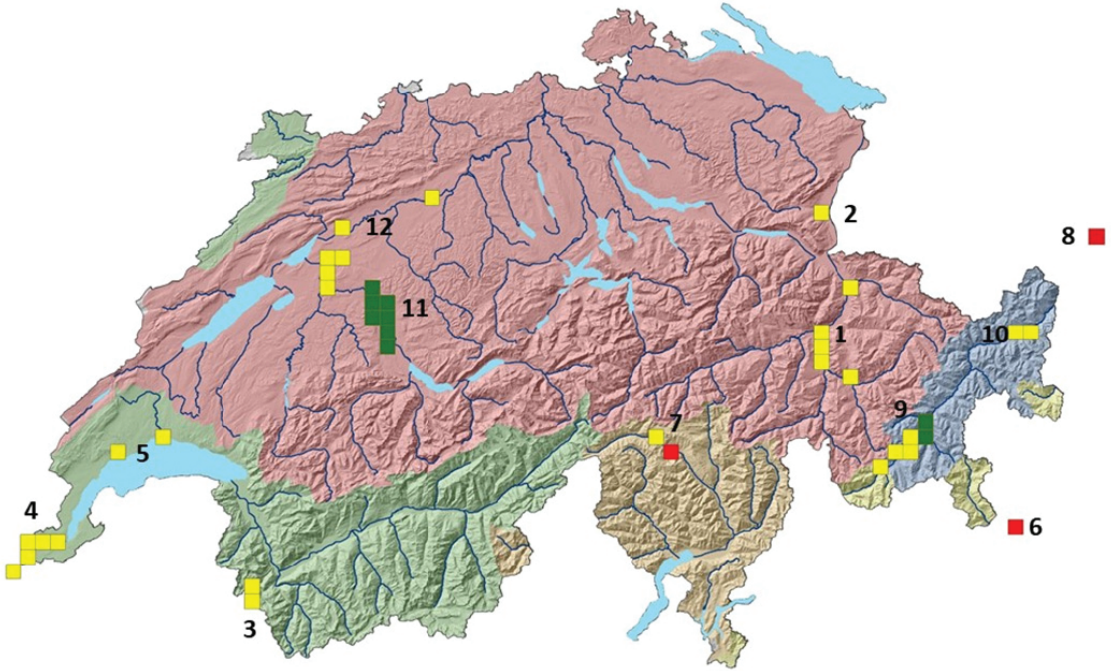


Figure 1 Otter presence in Switzerland and neighbouring countries since 2005, presented in a 5×5 -km grid. *Yellow cells*: confirmed otter signs (photos from trail cameras, spraints and plausible observations). *Green cells*: confirmed reproduction. *Red cells*: road kills. *Red surface*: Rheine catchment; *green surface*: Rhone catchment; *blue surface*: Inn catchment; *yellow surface*: Ticino/Adda/Adige catchment. The numbers refer to the text above. Background: swisstopo.

UNINTENTIONAL INTRODUCTION IN THE RHEINE CATCHMENT

There has been a small otter population on the river Aare near Berne since 2005 (No. 11). During a flood in 2005, a pair of otters escaped from a zoo. Both otters were in the European breeding programme. The female gave birth to three cubs in the wild in 2006. All individuals, except for two cubs, died or were recaptured by the zoo by 2007 (Rosset 2007). Genetic analyses in 2007 revealed that the remaining cubs in the wild were a male and a female. However, only one individual remained in the region from 2007 to 2014. It thus came as a surprise in October 2014, when two cubs were detected by trail cameras. Since then, at least two females have reproduced repeatedly. In February 2018, the small population started to expand downstream with spraints detected in regions where in 2016 no presence was noted (No. 12, Weinberger, 2017, 2018).

LEGAL PROTECTION

In international terms, the species is protected by the Berne convention under Annex II. At a national level, the otter is protected by the Swiss hunting law.

Damages resulting from otter activity are reimbursed by the federal and cantonal authorities, but only if prevention measures have been applied previously. Prevention measures themselves are not compensated. Culling of otters is permitted to prevent intolerable damages if no prevention measures can successfully be applied. Professional game wardens within cantonal authorities are responsible for the application of the federal laws in the field. The federal hunting law requires a management plan for nationally protected species. However, as the otter has only recently returned, no management plan has yet been set up.

NATIONAL STRATEGY

The otter is poised to recolonize Swiss waterways from three different regions (Rhône catchment, Inn catchment and Po catchment). So far, mostly solitary individuals have passed through Switzerland or established territories. However, as the two reproductions on the Inn river demonstrate, recolonization can happen extremely quickly and is difficult to monitor. To anticipate and to obviate potential problems associated with the comeback of the otter, the federal office for the environment, FOEN, launched a national information centre in 2018 to coordinate the work already underway from cantonal authorities and Pro Lutra. Simultaneously, a national otter-working group including the crucial stakeholders was set up to address and discuss upcoming issues. The main goals of the FOEN strategy are:

- *monitoring the recolonization*: the monitoring already executed twice (Kranz and Poledník, 2012; Weinberger, 2017) will be expanded and repeated regularly.
- *genetic monitoring*: the genetic identification of otters in Switzerland will be intensified and coordinated with the neighbouring countries.
- *prevention measures*: exchanging with neighbouring countries about prevention measures, training of game wardens and establishing a network of trained people dealing with prevention measures.
- *future study*: different studies are planned such as the impact of the otter on reared local fish populations, optimizing monitoring methods and genetic analyses for individual identification, applying and refining of prevention measures.
- *road kills*: mitigating the danger for road kills.
- *river restoration*: integrating the otter in river restoration projects.

IMPLEMENTATION

The recent but rapid return of the otter has garnered national attention. Even before the recent set-up of the working group, Switzerland has been attentive to the otter and its situation in Europe. Since 1997, the Pro Lutra Foundation has been working towards the return of the otter to Switzerland. The foundation has initiated surveys in and around Switzerland (Kranz et al., 2008; Kranz and Poledník, 2012; Weinberger, 2017) and contributed substantially to the scientific work regarding habitat use of otters in the Alpine Arc (Weinberger, 2016;

Weinberger et al. 2019). Pro Lutra also examines new survey approaches, such as acoustic monitoring of otters (in collaboration with the University of Zurich) and wildlife detection dogs (in collaboration with Artenspürhunde Schweiz).

As with the return of any predator species, conflicts with human land and waterway use may arise. Information on the species, its requirements, distribution, and fish protection measures will be crucial in order to avoid escalating conflicts. Pro Lutra invests intensively in public outreach. Also, the foundation has released an extensive book on the Eurasian otter (Weinberger and Baumgartner, 2018).

In summary, the future investment of the national and cantonal authorities, the implementation of a national working group, a national information centre, the work of Pro Lutra and the coordination of all these initiatives, has set a solid foundation for a successful return of the otter to Switzerland. The engagement of all stakeholders means that the process can be closely monitored and enhanced where needed. This way, potential conflicts can hopefully be addressed and be solved in the early stages.

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