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A BEAVER FROM NORTH-EASTERN ITALY (*CASTOR FIBER*: CASTORIDAE, RODENTIA).

UN CASTORO NELL'ITALIA NORD-ORIENTALE (*CASTOR FIBER*: CASTORIDAE, RODENTIA).

Riassunto breve - Gli Autori riferiscono della presenza di un primo castoro *Castor fiber* nell'Italia nord-orientale. L'esemplare sembra per ora essere solo, come prima conseguenza dell'espansione naturale delle popolazioni reintrodotte in Austria. Esso frequenta 6-7 km di corsi d'acqua tributari del Danubio nel Comune di Tarvisio (Provincia di Udine, Italia nord-orientale).

Parole chiave: *Castor fiber*, Italia nord-orientale, Austria, Reintroduzione, Espansione naturale.

Abstract - The Authors refer about a first beaver *Castor fiber* in north-eastern Italy. At present the specimen seems to be alone, probably the first result of the natural spreading of Austrian reintroduced populations. It dwells in 6-7 km river stretches of small tributaries of Danube drainage system from the Municipality of Tarvisio (Province of Udine, north-eastern Italy).

Key words: *Castor fiber*, north-eastern Italy, Austria, Reintroduction, Natural spreading.

Introduction

In Italy and in large parts of Europe the extinction of the Eurasian beaver (*Castor fiber* LINNAEUS, 1758) had been due to hunting for fur and meat, and to the extraction of a special oil produced by its peri-anal glands, the so called castoreum, utilized in the pharmacopoeia and perfume industry (DJOSHKIN & SAFONOV 1972; FREYE 1978).

In north-eastern Italy the Holocene presence of beaver is well documented (ESU & KOTSAKIS 1989). In Julian Pre-Alps it was ascertained at least up to Tardiglacial times thank to sub-fossil bone remains (LAPINI et al. 1996; ROWLEY-CONWY 1996; LAPINI 2018). They were collected under a Mesolithic shelter located along the left banks of the River Natisone/Nadiza, near the village of Biarzo (Julian Pre-Alps, San Pietro al Natisone, Udine) (GUERRESCHI 1996). Sub-fossil remains from the neighbouring Friulian Plain date back at least up to 500 years b. C. (RIEDEL et al. 2006).

Its extinction in Italy probably dated back to XVI Century (AMATUS LUSITANICUS 1553; GESNER 1558; ALDROVANDI 1637). More detailed information had been indicated by DJOSHKIN & SAFONOV (1972), NOLET (1996), that refer the extinction to 1541. This date is probably disputable (Masseti, pers. comm.), but has been currently indicated as the extinction date of Italian beavers (HALLEY et al. 2012).

Anyway the species had survived in Italian Po Valley at least up to XVI Century (AMORI 1993), in Slovenia

up to the XVII-XVIII Century (KRYŠTUFEK 1991) and in Croatia to the end of XIX Century (HALLEY et al. 2012).

The lost of European beavers caused the biologic simplification and impoverishment of many European River-ecosystems. Beaver, indeed, is able to increase the bio-diversity of the river courses that attends, thanks to its dams systems, that create small ponds and standing waters particularly full of life.

For these reasons the species has been recently reintroduced in many European countries (NOLET et al. 1996), sometimes with various subspecies (GRAF 2009; GRAF & PETUTSCHNIG 2014), in some cases with north-american beavers (Finland).

Various reintroduction programs reported the species to few kilometers from Italy, both in Switzerland (Canton Ticino: Minnig et al., 2016) and in Austria (River Gail Valley: both in Villach, Feistritz a. d. G. and Hermagor districts: LAPINI 2018), where the species has been reintroduced between the 70s and 90s of the twentieth century (GRAF 2009; HALLEY et al. 2012; GRAF & PETUTSCHNIG 2014).

In Slovenia the species has returned in 1999, probably thanks to the natural spread of Croatian reintroduced populations (HALLEY et al. 2012).

At the end of October 2018 G. Busettini, hunter from Tarvisio Hunting District (Tarvisio Municipality, Udine Province) noted some possible signs of beaver presence. On 18th 2018, moreover, Daniele Vuerich, of the Forestry Service of the Administration of the Region



Fig. 1 - The first debarking willow (*Salix* sp.) photographed in Tarvisio Forest (Udine Province). 18th, November, 2018, photo D. Vuerich/CFR (Forestry Service of the Administration of the Region Friuli Venezia Giulia).
- Il primo salice (*Salix* sp.) scortecciato fotografato nella Foresta di Tarvisio (Udine). 18 novembre 2018, foto D. Vuerich/CFR (Corpo Forestale della Regione Friuli Venezia Giulia).

Friuli Venezia Giulia, photographed a strange deeply debarking willow (*Salix* sp.) in the same forest of the Municipality of Tarvisio. From this very close pic (Fig. 1) this debarking seemed could be attributed to ungulate damage, but the field verification of November, 22th, 2018, indicated that they were surely signs of beaver activities.

This paper refers about the first preliminary beaver survey in north-eastern Italy.

Methods.

In the most frequented places by beavers we used a set of 5-6 camera traps to obtain photo and video recording, in order to count them.

A first preliminary beaver survey was then performed, searching for tracks and signs of *Castor fiber* activities along rivers and lakes (tree erosions, dams,



Fig. 2 - Beaver trunk-erosions. Above: fresh erosions; below: older erosions. November, 25th, 2018, Photo L. Lapini.
- Tracce di erosione da castoro. Sopra: erosioni fresche; sotto: erosioni più vecchie. 25 novembre 2018, foto L. Lapini.

scats and footprints) of Tarvisio Municipality, in order to understand both their provenience and their number.

Recent signs of tree erosion are easy to see with binoculars because they are whitish, but older signs are no so clearly evident. They must to be searched walking along rivers and lakes, examining the cut-surface of all trunks and branches cut and abandoned on the banks of water basins. The erosion pattern of beaver erosion is quite typical (Fig. 2), like as the wood chipboard-like aspect of its scats.

Each site of ascertained presence has been geo-referenced (Latitude and Longitude), but in the present paper -for conservation purposes- these data are represented following the ETRS 1989 LAEA 10x10 km Cartographic Grid System.

Preliminary results and provisional remarks

The distribution of tracks and signs of beaver presence in the drainage system of the Municipality of Tarvisio seems to indicate its provenience from Austria, probably

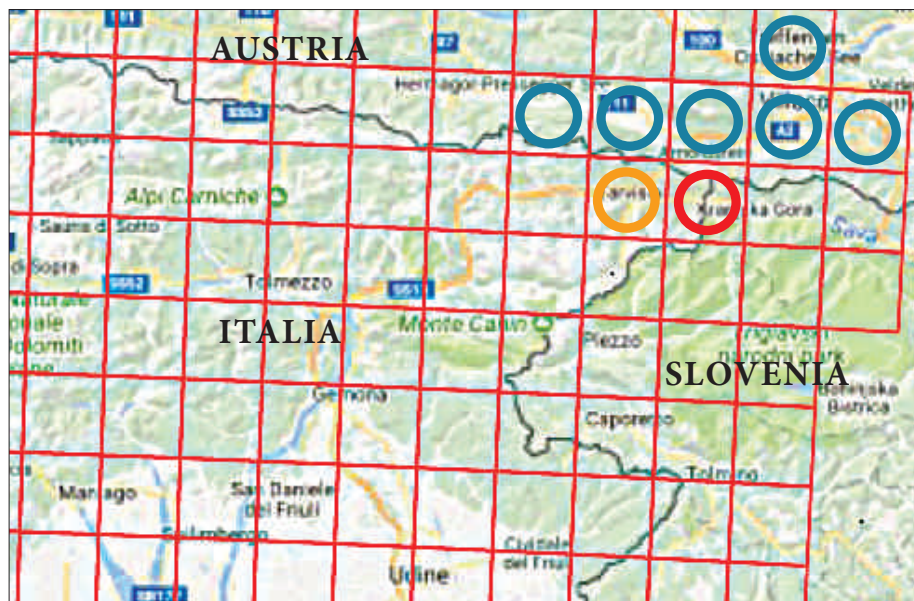


Fig. 3 - Distribution of the beaver in north-eastern Italy (ETRS 1989 LAEA Cartographic 10x10 km System). Orange: tracks and signs; Red: present occurrence of at least one specimen (this paper). Blu: Austrian ascertained presence (data from GRAF 2009; GRAF & PETUTSCHNIG 2014; LAPINI 2018).
- Distribuzione del castoro nell'Italia nord-orientale (Sistema Cartografico ETRS 1989 LAEA 10x10 km). Arancione: Tracce e segni di presenza; Rosso: presenza attuale di almeno un animale (questo lavoro). Blu: dati di presenza in Austria (dati da GRAF 2009; GRAF & PETUTSCHNIG 2014; LAPINI, 2018).



Fig. 4 - *Castor fiber* from Tarvisio Forest (Udine), November, 22th, 2018 (Photo R. Pontarini/Progetto Lince Italia).
- *Castor fiber* nella Foresta di Tarvisio (Udine), 22 novembre 2018 (foto R. Pontarini/Progetto Lince Italia).

due to the natural spreading of Austrian reintroduced populations (Fig. 3). At present the first Italian beaver seems to be alone (Fig. 4). This statement seem to be quite sure, since it was never possible to observe signs or photo-trapping records of more specimens together.

The recorded beaver, anyway, has already arrived near to Italian Slovenian border, where it attended a first attempt to build a small beaver dam, mostly cutting *Salix*, *Corylus*, *Betula*, and other small riverine trees.

Dam construction has been started on the small emissary of a little pond due to the filling of a second world-war anti-tank ditch.

In this zone, anyway, beaver activities up to now seems to be extended in a stretch of more than two kilometers.

Camera-trapping monitoring revealed that in these environments beaver was not exclusively nocturnal. Its activities, indeed, sometimes start before the sunset, while in the morning they may last after sunrise.

It is surely too soon to evaluate the conservative importance of the described situation, but it surely demonstrate that the beaver can autonomously comes back in Italy, passing in the vertical rocky Canyon of the River Slizza (named "Orrido dello Slizza"). This is the

only way to colonize Italian territory coming from the reintroduced Austrian population.

The Eurasian beaver (*Castor fiber*) is a new entry in the Checklist of Italian Mammals, at present almost done by Theriologic Italian Association (AtIt). Protected by the EU Habitat Directive 92/43, the Eurasian beaver is listed in the All. II and IV of this Directive, like the otter (*Lutra lutra*), with which coexists in the drainage system of Tarvisio Municipality. It must be surely enclosed in the official list of Italian Protected Mammals.

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