Evaluating safety and effectiveness of a single dose immunocontraceptive vaccine for fertility control in the invasive alien species coypu (*Myocastor coypus*)

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INTRODUCTION

Myocastor coypus is an acquatic rodent native to South America which was imported for fur farming into Europe, Asia, Africa and North America.

In recent years, ecological, hydraulic and economic problems caused by coypus have been increasing rapidly in several countries, including Italy. Negative impacts are mainly due to its burrowing activity and feeding behaviour and include undermining of flood protection structures, such as river banks and dykes and therefore increased risk of floods, as well as agricultural damage, mainly on corn and sugar beet.

In order to mitigate these impacts and to test an an innovative approach, alternative to culling, we proposed an European Union-LIFE project (LIFEGREEN4BLUE) aiming to carry out a pilot trial to evaluate the short-term effectiveness of a single dose of the immunocontraceptive GonaCon™ (USDA-APHIS Wildlife Services) in captive coypu.

STUDY AREA

The area of origin of experimental animals is the plain within the Bologna and Ferrara provinces (IT). This area, representative of the Po valley, as well as other European plains, overexploited and threatened by the presence of many invasive alien species as *Myocastor coypus*, is one of the most endangered territory for biodiversity conservation, as highlighted in the Prioritised Action Framework for Natura 2000 published by Emilia Romagna Region.

METHODS

8 sexually mature female and 2 male coypus were housed in purpose-built pens. After a period of acclimatization, animals were assigned to Treatment and Control groups. On February 1st, 2024, treatment females were administered with a 1 mL single dose of GonaCon.

Forty-five days after vaccination females of both Treatment and Control groups have housed with nonvaccinated males. No differences in behaviour and adverse injection site reaction have been observed between vaccinated and untreated coypu so far.

The effect of GonaCon™ will be assessed by measuring anti-GnRH antibody titres, hormone profiles and by ultrasound scans of the females to detect pregnancies.