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## Science and Research Projects

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### Evaluation of fertility control to manage over abundant wildlife - WM0406

#### Description

Defra has the policy objective of ensuring that safe, effective and humane methods are available to resolve conflicts between wildlife and the interests of conservation, agriculture and rural communities. Furthermore, public concerns regarding lethal control methods place increasing constraints on management options. Against this background there is the urgent need for more benign methods for reducing overabundant wildlife populations. Fertility control has the potential to offer long-term, effective and humane approaches to reducing population size and growth. Significant progress has been made in recent years in the development of fertility control agents such as DiazaCon and Nicarbazin for birds and single-dose immunocontraceptive vaccines for mammals. Immunocontraceptive vaccines act by inducing antibodies that interfere with the reproductive proteins or hormones essential for reproduction e.g. vaccines targeting Gonadotropin Releasing Hormone (GnRH) and Porcine Zona Pellucida (PZP). Avian contraceptives act by reducing egg laying or egg hatchability and, like immunocontraceptives, are not species-specific. Both avian and mammalian contraceptives have been successful in reducing fertility experimentally in a wide spectrum of species. However, the duration of induced infertility and the potential side effects of fertility control agents on animal behaviour, physiology and welfare, as well as practical, cost-effective systems to deliver these agents to target species have not been thoroughly assessed. A notable exception is a Defra-commissioned study (Project WM306) that has recently developed a suite of methods to assess potential side effects of the GnRH vaccine on the behaviour, physiology and welfare of captive wild boar. By building on the results and expertise obtained in project WM306, this study aims to develop cost-effective systems to deliver fertility control agents to target populations, to investigate the long-term effectiveness and possible side effects of the GnRH vaccine on captive and free-living wild boar and of an avian contraceptive on captive Rose-ringed parakeets, and to establish requirements for evaluation of population level effects of applying a fertility control techniques. Wild boar and parakeets will be used as model examples of reintroduced (wild boar) or introduced (parakeets) mammalian

and avian species which have the potential to impact on a variety of human activities and conservation interests in the UK. In addition the project will develop and evaluate species-specific delivery of an oral GnRH vaccine in a model target species. Provided that the project demonstrates that contraceptives can significantly reduce the reproductive output of individuals of the model species with acceptable effects on their physiology, behaviour and welfare, and that specificity of delivery systems can be achieved, the results of this study will be a major advance towards practical application of fertility control as an effective and benign tool to manage overabundant or expanding populations of birds and mammals in the UK.

#### **Objective**

1. Investigate the long-term effectiveness and possible side effects of the GnRH vaccine on captive wild boar
2. Assess the effectiveness and potential side effects of GnRH vaccine on individual free-living wild boar
3. Evaluate the effectiveness and potential behavioural and welfare effects of one avian contraceptive in the Rose-ringed parakeet as a model species
4. Develop cost-effective systems to deliver fertility control agents to target species
5. Establish requirements for evaluation of population level effects of fertility control agents

#### **Time-Scale and Cost**

**From:** 2005

**To:** 2008

**Cost:** £993,336

#### **Contractor / Funded Organisations**

[Central Science Laboratory](#)

#### **Keywords**

[Environmental Protection](#)

#### **Fields of Study and Contacts**

[Wildlife Management](#) - <mailto:e.environment@defra.gsi.gov.uk>