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## Science and Research Projects

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### Towards Practical Application of Emerging Fertility Control Technologies for Wildlife Management - WM0408

#### Description

Traditionally resolution of conflicts between human and wildlife interests has often involved lethal control to reduce problem wildlife populations. However, lethal control has always had its limitations, the acceptable methods are becoming fewer, public opposition is often pronounced and this approach has direct impacts on the conservation of the species concerned. Fertility control offers an alternative approach that would add another method to the toolbox of available approaches to resolve such conflicts. Furthermore, in some circumstances fertility control may have some inherent advantages over culling including:

1. Infertile animals remain in the population, thus potentially contributing to density-dependent feedback that constrains recruitment and survival hence slowing population recovery. Fertility control could be very effective at maintaining populations at acceptable levels after they have been reduced by culling.
2. Culling can result in increased movement and contact between individuals resulting in increased risk of disease transmission. Fertility control would, in principle, cause less short-term social perturbation than culling and thus be less likely to increase disease transmission.
3. Fertility control could reduce problems specifically associated with breeding activity such as burrow and nest construction or expansion.
4. Fertility control might encourage long-term dispersal and divorce arising from reproductive failure in species exhibiting site and mate breeding fidelity thus reducing local breeding populations.
5. Fertility control could potentially reduce vertical transmission of disease (mother to offspring) which may reduce the probability of disease maintenance within a wildlife population.
6. Fertility control might increase the body condition and general health of infertile animals thereby reducing their susceptibility to disease and thus reducing disease transmission and incidence.

Interest and research into fertility control for wildlife is on the increase including a recent three year Defra funded project (WM0406) to develop fertility control

methods for wildlife. This work has been carried out in collaboration with international efforts on this topic which have led to a number of important breakthroughs in fertility control technology (FCT). The international partnerships have involved institutions from around the world including the National Wildlife Research Center, USA; Talwar Research Institute, India; University of Vienna, Austria; Landcare Research, New Zealand; Central Science Laboratory, UK and Forest Research, UK. This research programme is at the leading edge of innovation and yet has already delivered a number of tools including:

1. An immunocontraceptive vaccine of proven effectiveness (GonaCon™) in a range of mammal species (minimum of three years infertility after a single vaccination) and safety (no negative side-effects with respect to welfare). This is immediately available for studies in the UK, under Home Office A(SP)A Licence, of free-living population level effects in species suited to capture, vaccination and release (e.g. wild boar, urban badgers).
2. Proof of concept of a potentially orally active mammalian immunocontraceptive GnRH vaccine construct.

#### **Objective**

The project. Key objectives are:

- 1) Evaluate population consequences of applying single-shot GnRH immunocontraceptive vaccine by injection to key target species
- 2) Develop immunocontraceptive vaccine for oral delivery
- 3) Develop and evaluate species-specific systems to deliver oral vaccines to key target species

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

**From:** 2008

**To:** 2011

**Cost:** £814,994

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

[Central Science Laboratory](#)

#### **Keywords**

[Environmental Protection](#)

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

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