

Feral Pigs and Volcanoes: A Hot Topic

BACKGROUND

Evacuations of small holdings due to volcanic activity in the late 1990's led to the establishment of feral pig populations on Montserrat, West Indies. The Centre Hills in Montserrat are a global biodiversity hotspot with high levels of endemism. Feral pigs have a direct environmental impact through predation, feeding on plants, seed dispersion, and soil disturbance.



November 2009: the Soufriere Hills Volcano has been erupting since 1995. Two thirds Montserrat have no public access due to volcanic activity. Photo: Henry Odbert, MVO

AIMS

1. To monitor distribution and relative abundance of feral pigs in the Centre Hills
2. To design and implement an Action Plan to mitigate the impact of feral pigs in the Centre Hills

METHODS

We established a network of 23 motion-activated camera traps over an area of 21 km². For each camera, pictures taken within 15 minutes of one another were defined as a single pig visit. We placed 2 additional cameras in the South, one at an abandoned rice mill that pigs visited regularly to feed on rice and another at a feeding station we provided. Data were expressed as number of visits/camera/100 days.



Montserrat is part of the Leeward Island chain, West Indies. Human population ~5000. Total area 102 km²



The Centre Hills support key endemic species

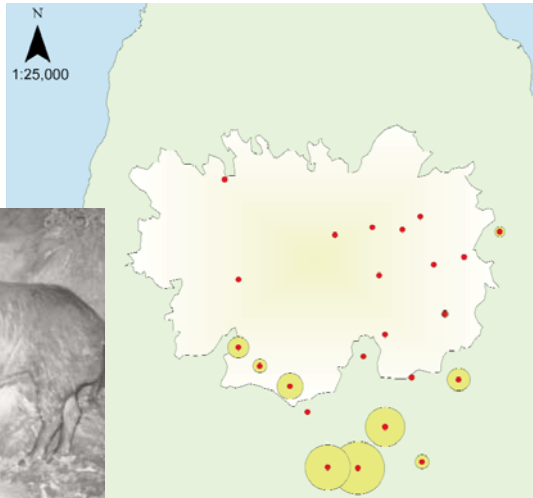


Figure 1. Feral pig distribution and relative abundance in and around the Centre Hills. Camera locations (red dots) with the proportional number of feral pig visits/camera/100 days (yellow circle)



Feral pig are locally hunted to provide food

RESULTS

From July 2009 to February 2010 we obtained 1,998 active camera days. Pigs (n=56 visits) were recorded on the main monitoring network, with an average of 4.63(±SD 8.46) visits/camera/100 days (Fig. 1). 13 cameras did not record any feral pig visits. The rice mill recorded the majority of pig visits [216 visits/100 days]. The most active camera within the Centre Hills boundary recorded 8 visits/100 days. Pigs are concentrated in the South where there is no public access due to ongoing volcanic activity.

DISCUSSION

Pig activity is low in the middle of the Centre Hills. However, population expansion or volcanic eruptions may lead to increased feral pig incursions into the Centre Hills. Eradication is unfeasible due to access restrictions to the South. In February 2010, a workshop with stakeholders including NGO's, Government agencies, hunters and landowners concluded that:

- Ground shooting with dogs and trapping will be undertaken to control feral pigs
- Monitoring using the camera traps will continue to measure the effect of removal of pigs



Authors

Richard Bunting¹
buntingr@gov.ms

Giovanna Massei²
giovanna.massei@fera.gsi.gov.uk

Lavern Rogers-Ryan³
Sugoto Roy²
James Millett⁴

Addresses

¹ Department of Environment,
Government of Montserrat

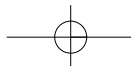
² The Food and Environment
Research Agency,
Sand Hutton, York,
YO41 1LZ. UK.

³ Physical Planning Unit,
Government of Montserrat

⁴ Royal Society for the Protection
of Birds

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Reducing the impact of feral livestock in and around the Centre Hills

Lloyd Martin¹, Giovanna Massei², Sugoto Roy², Sarah Sanders³

¹ Department of Environment, Montserrat, ² Food & Environment Research Agency, UK, ³ RSPB, UK

The importance of the Centre Hills

The Centre Hills are the largest intact forest area on Montserrat and host endangered, endemic species of global biodiversity importance such as the Montserrat Oriole, *Icterus oberi*, Montserrat Orchid, *Epidendrum montserratense*, the Montserrat Galliwasp, *Dipoglossus montisserati* and the Mountain chicken *Leptodactylus fallax*.

Other species include 795 plants, 1,241 invertebrates, 2 frogs, 2 snakes, 5 lizards, 10 bats and 10 breeding birds.

The total economic value of the Centre Hills is estimated at £1 million/year.



Impact of livestock

Since the volcanic eruptions in the '90s, the number of loose goats and feral pigs in the Centre Hills increased dramatically.

Livestock and pigs' devastating effects on other islands include:

- Predation on globally threatened species
- Destruction of native plants - evolved in the absence of ungulates-
- Dissemination of non-native, fast-spreading plant species such as guava
- Consumption of the native *Heliconia caribaea*, causing loss of Montserrat oriole nests and territories
- Negative impact on tourism
- Pollution of water courses and damage to infrastructures
- Prevention of forest regeneration
- Soil erosion

Aims of the Project

The purpose of the project, to be completed in April 2011, is to establish a sustainable, locally managed programme to minimise the destructive impacts of feral livestock in and around The Centre Hills. Specific aims are:

- Obtain baseline distribution and numbers of feral livestock
- Derive baseline information on reproduction and diet of pigs
- Undertake public surveys to assess attitudes to feral livestock
- Identify and evaluate management options (e.g. eradication, culling, fencing, tethering) to mitigate human-livestock conflicts
- Implement action plan and review livestock policy
- Raise awareness on Montserrat and in the Caribbean about the impacts of feral livestock on biodiversity and livelihoods



For more information please contact sarah.sanders@rspb.org.uk

