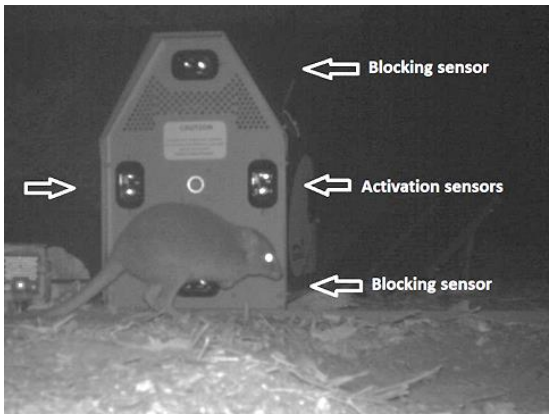
Fact Sheet

How the Felixer works

The Felixer takes advantage of the unique body shape and gait of a cat, as well as their fastidious nature of cleaning themselves.

Felixers are placed in strategic locations in sensitive habitats. Placements are selected by the chance of a predator using the location as a thoroughfare. Since cats are known to use roads, trails and dry creek beds to travel in search of prey, such locations were selected for the Pilbara trials near rocky outcrops where northern quolls are likely to live.

The Felixer uses lidar (light detection and ranging) sensors to determine when an animal crosses in front of the device. If the bottom sensor is interrupted, the animal is deemed too small to be a cat or fox (for example, the Woylie shown in the image below). Conversely, if the top blocking sensor is interrupted, the animal is too large. Between these two ranges, an advanced algorithm supported by artificial intelligence is enacted to determine if the species is a target species. Since there are no Australian native animals with the same size, shape and gait as cats and foxes, there is a high success rate of successful identification. If the algorithm deems the animal to be a target species, then a gel laced with 1080 bait is sprayed onto the animal, whereby it becomes lodged in its fur.



In testing, Dr Read has been able to show that cats sprayed with the gel will then lick their fur and in turn ingest the 1080 poison, which is most toxic to non-native species. In the rare case that a non-target species such as a kangaroo is sprayed with the gel, then it is unlikely that they will lick it off. If they do ingest the poison, it is unlikely they will be adversely affected since Australian native species have a natural tolerance to 1080.

Each Felixer is weather proof, solar powered and designed to be left in situ for months at a time. The device captures a photograph of every target and non-target detected and can operate in total darkness. In order to attract more targets, each device also has speakers that periodically play recordings of animals that introduced predators are likely to hunt such as birds and mice. The artificial intelligence supporting the algorithm for identifying species will be continuously developed based on the data gathered from each of the Felixer units deployed during this two year research program.

The Felixer was invented by John Read in consultation with South Australian engineering consultants Applidyne Australia Pty Ltd, who manufactured the prototype Felixers and develop its software. Read's Ecological Horizons consultancy received funds to develop the Felixer from many organisations including Foundation for Australia's Most Endangered Species Ltd, Sporting Shooters Association of Australia, the Ian Potter Foundation and the Australian and South Australian Governments. The commercialisation of Felixers will now be managed by start-up not-for-profit company Thylation, which is supported by FAME, Bush Heritage Australia, Save the Bilby Fund and other environmental philanthropists.

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