DIGIFARM PROJECT: Wildlife on farms

Background

Broadscale agriculture has resulted in widespread clearing of native vegetation and loss of habitat for native fauna.

Increasingly primary producers are seeing value in ecosystem services provided by native fauna. These include insect control by native birds and insects as well as pollination of crops by native insects.

In recent decades attempts have been made to preserve remaining vegetation and in some cases replant areas with species that provide suitable habitat for indigenous species.

Management strategies such as linking areas of remnant vegetation and fencing off watercourses and areas of remaining native vegetation to encourage survival of populations of native animals.

Retention of standing dead trees and logs will also assist as will careful use of pesticides to avoid drift along with control of introduced weed and animal species.

Time controlled grazing (e.g., rotational grazing) will also assist in the survival and regeneration of native plant species that provide food and habitat for native animals.

How does it work?

Camera monitoring was carried out on one commercial farm on the southern Liverpool Plains near Bundella near Quirindi and another commercial enterprise in the Maules Creek area near Narrabri.

Motion activated infrared cameras were set up on fence posts near timbered areas and water sources in paddocks in the absence of stock.

At one site near a creek over approximately two and a half months 42 separate sightings of kangaroos were recorded and five each of foxes and pigs and one wombat.

Apart from kangaroos very few native animals were captured in the photographic record.

Pros/cons

The equipment used was reliable and simple to operate. The technique can only be used when stock are absent from the area monitored and so is more suited to time controlled grazing situations.

There is a considerable time requirement to process the images collected particularly where there are large numbers of one species such as kangaroos.

Remote cameras by their nature are most effective for detecting mammals and to a lesser extent birds and generally not suitable for detecting reptiles and frogs.

Farmer/advisor experience using the technology

In this exercise the lack of diversity in wildlife found was no surprise to those involved. In this regard the project has emphasised the impact of agriculture on local wildlife. It must be remembered that a relatively small number of cameras were used in this exercise. For a more thorough survey a larger number of cameras would be required and a greater level of planning needed to site cameras and plan appropriate statistical methods to analyse data. One landholder commented that the data "confirmed our belief in the lack of diversity of native wildlife"

What's next?

Collaboration with ecologists is advisable to ensure the location of cameras in areas most likely to be used by wildlife. Machine learning applications may in the future allow the processing of images to be automated which would result in a significant time saving for landholders. If used properly there is potential to record changes in the species mix over time. As well determining the presence of animals, use of cameras can also be used to document some aspects animal behaviour although that did not occur in this study.

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