



The unique and extensive biodiversity of Kakadu National Park is suffering from the direct impacts of feral pigs including reduced water quality, and predation of freshwater turtles and frogs. However, their impacts to other native species, including the Magpie Goose and the endangered Alligator Rivers Yellow Chat (*Epthianura crocea tunneyi*) are largely unknown.



During the dry season, vast areas of floodplains are damaged by feral pigs due to their rooting behaviours as water becomes scarce. Repeatable and effective methods are needed to assess feral pig damage over time, track changes in the health of Country and determine benefits, or lack of benefits, resulting from feral pig control efforts.

This Floodplain Pig Damage Study is one of 15 high value projects selected to support the delivery of the Park Australia's Kakadu Threatened Species Strategy 2014-2024.

This project aims to:

- demonstrate the value of aerial imagery collected by drone as a tool for assessing the damage that feral pigs are causing to floodplains.
- measure environmental damage following targeted feral pig control activities to determine benefits arising from feral pig removal
- assess the cost effectiveness of pig control and the benefit to natural values such as magpie goose and yellow chats.
- develop a long-term, ranger and Traditional Owner led monitoring program of floodplain health, and
- increase engagement between Parks Australia staff and Traditional Owners and two-way knowledge sharing with researchers to learn more about the innovative use of technologies, such as thermal cameras and artificial intelligence image processing, to assess the health of Country.

Drones can be an economical and useful tool to measure the extent and degree of feral pig damage over targeted sites on floodplains. In September 2021 and August 2022, drone surveys were conducted over two study sites on the Menassi floodplain and on South Alligator floodplain near Anthill Point to assess feral pig damage over time. Both floodplains were selected as they are being heavily damaged by feral pigs. The South Alligator floodplain site is a significant site for the Yellow Chat. High resolution imagery was captured by drone pilots from the Department of Climate Change, Energy, the Environment and Water's Supervising Scientist Branch and the Environmental Research Institute of the Supervising Scientist (ERISS).

Several thousand pigs were removed across the Kakadu floodplains in October 2022 by a broad aerial culling operation. Further pig culling occurred in November 2022 in a focal area between the West and South Alligator Rivers, with funding from Office of the Threatened Species Commissioner. Drones were used between May and September 2023 at both sites to determine whether the intensive removal of feral pigs has reduced feral pig damage on both floodplains through the dry season. The analysis of images captured by drones can then be used to guide feral pig management decisions to protect Country, understand habitat usage by native animals in the floodplains and areas of significance to species including magpie geese, turtles and the Yellow Chat.

Benefits from undertaking impact monitoring of floodplains as well as population surveillance of native and feral species using drones will be extended to the wider community to build support for regular, ongoing and extensive feral pig control.



Photos obtained from Kakadu National Park's Threatened and Significant Species Program Annual Report 2021-22.