Department of **Biodiversity, Conservation and Attractions**

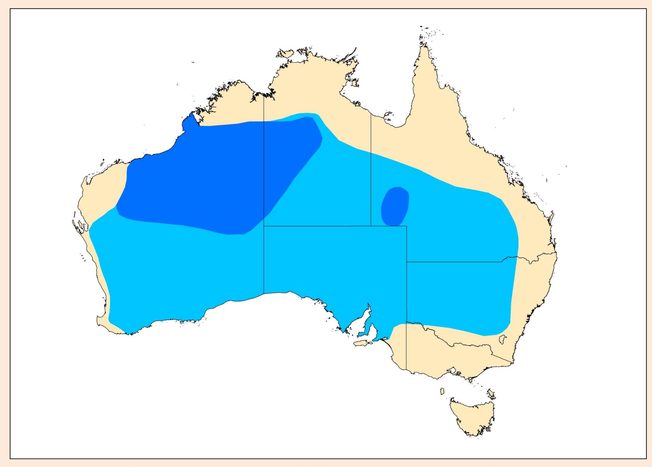
GOVERNMENT OF WESTERN AUSTRALIA

Conservation and Management of the Bilby
Projects in Partnership with Traditional Owner Rangers

The greater bilby (*Macrotis lagotis*). *Photo - Jiri Lochman*

The greater bilby is a burrowing marsupial that was once widespread across most of mainland Australia. Since European colonisation, the introduction of the cat and fox, changed fire regimes, the degradation of bilby habitat through pastoralism, introduced herbivores, and clearing of habitat, the range and abundance of greater bilbies have contracted and decreased severely, and bilbies have disappeared from at least 80% of their former range. The bilby is listed as Vulnerable in Western Australia, nationally and internationally under the IUCN Red List.

The bilby has high culturally and iconic significance to Australians, and has an important ecological role in arid environments as an ecosystem engineer through the beneficial digging and soil turn-over that bilbies create. The Department of Biodiversity, Conservation and Attractions have initiated a number of research and management projects in which partnerships with Traditional Owner Rangers are a key component.

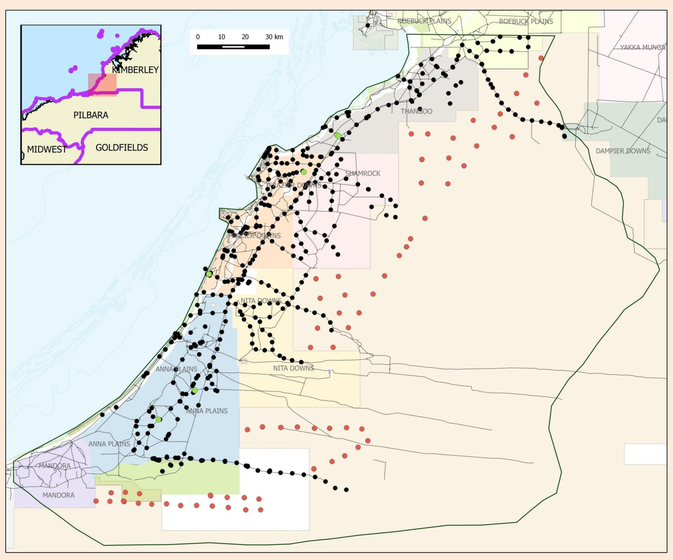


Historic (■) and current (■) distribution of the greater bilby.

La Grange Bilby Survey

In the Kimberley, to the southwest of Broome, Karajarri and Nyangumarta Rangers, Yawuru Country Managers and the Department of Biodiversity, Conservation and Attractions are completing one of the largest and most intensive bilby surveys undertaken. The 3.6 million hectare La Grange area contains significant wild bilby populations extending from the Great Sandy Desert, through Pindan woodlands to the coastal sand dunes on Eighty Mile Beach.

Rangers have surveyed 439 plots for bilby sign, with 216 of these plots revisited to measure imperfect detection that occurs with such occupancy surveys. Rangers and staff have sampled DNA from three key populations to measure abundance (number of animals) within these populations. Occupancy and habitat distribution modelling is being undertaken that will inform and provide context for environmental impact assessment processes.



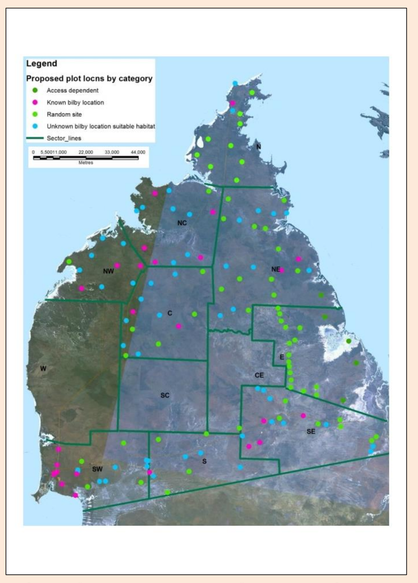
Sign plot surveys completed in the La Grange area.

Nyangumarta and Karajarri Rangers planning bilby surveys.

Karajarri Rangers documenting an active bilby burrow by the beach.

Conservation and Management of the Bilby on the Dampier Peninsula

Yawuru Country Manager Pius Gregory collecting DNA samples used for population monitoring.



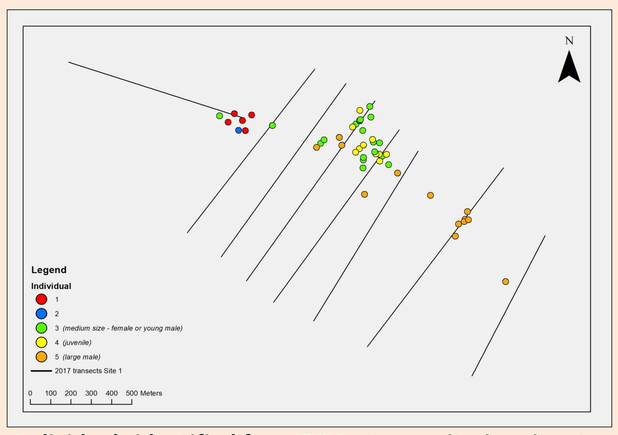
Sign plot surveys on the Dampier Peninsula.

In a large collaborative project on the Dampier Peninsula, north of Broome, Nyul Nyul, Nyikina Mangala, Bardi Jawi, Goolaraboolo and Jabirr Jabirr Rangers, Yawuru Country Managers and Department of Biodiversity, Conservation and Attractions staff are undertaking yearly surveys of bilby occupancy. The Dampier Peninsula contains the northern-most known wild populations of bilbies. Management of threats will be implemented at key populations, and monitoring of abundance using genetic techniques will provide measures that inform on the effectiveness of management at these populations.

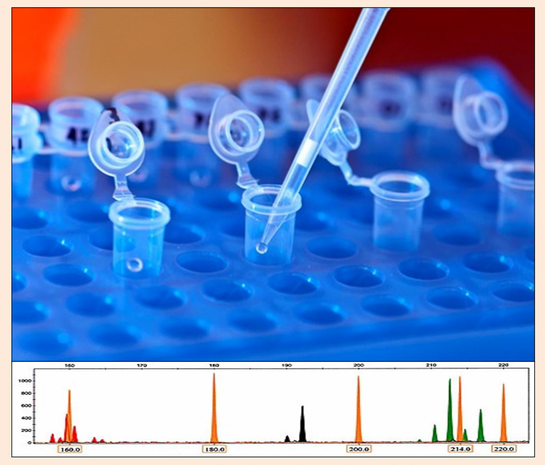
Bilby Monitoring at Kiwirrkurra

Kiwirrkurra Rangers collecting DNA samples used for population monitoring

Kiwirrkurra Rangers, Desert Support Services, Desert Wildlife Services and the Department of Biodiversity, Conservation and Attractions have partnered to monitor bilby numbers using genetic techniques at sites where traditional hunting for feral cats occurs. The technique, developed by the Department, uses DNA extracted from bilby scats to identify individuals and accurately monitor numbers of animals.



Individuals identified from DNA at a monitoring site at Kiwirrkurra in the Gibson Desert.



The monitoring technique involves laboratory processing and analysis of DNA.

Conservation and Management of the Bilby in the Pilbara

Yandeyarra Rangers survey areas where bilbies have been excavating bush onions.

Research is being undertaken to understand the distribution, and demographics of bilbies in the Pilbara, which is providing information for appropriate management to ensure the persistence of this species.

In a partnership with the Yandeyarra Rangers and Greening Australia, recent field surveys discovered the western-most known wild population of bilbies. Plans for joint management of threats and monitoring are underway to ensure the persistence of these populations at the western edge, and prevent further range contraction.

In other areas of the Pilbara, students at the Nullagine Community School participate in monitoring of bilbies as part of their science curriculum, and members of the Warralong Community are involved in bilby monitoring.

Students from Nullagine Community School learn how to operate remote cameras and collect DNA samples.

Bilby Reintroduction and Management at Matuwa

In partnership with Martu Rangers, bilbies have been successfully reintroduced to Matuwa, a 250,000 ha Indigenous Protected Area (IPA) co-managed with the Department of Biodiversity, Conservation and Attractions.

Staff and Rangers participate in annual introduced predator and fire management, and stock have been excluded from the IPA. This management has enabled the bilby population to successfully expand without the need for predator proof fencing.

Bilby being reintroduced back into Matuwa. *Photo – Judy Dunlop.*

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Fortescue Metals Group, Millennium Minerals, Roy Hill, the Western Australian State Government through Royalties for Regions, the Department of Primary Industries and Regional Development and Main Roads WA provided funding for these projects. The Kimberley Land Council, Environs Kimberley and WWF assisted in facilitating Kimberley projects. Frank Morris volunteered much time assisting on projects.