

## 19. Malleefowl (Ngaṅamara) as a flagship species for Indigenous Land Management in the Great Victoria Desert of WA, with notes on new sites & implications for Ngaṅamara distribution

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### **Abstract**

Malleefowl (Ngaṅamara) has been an important element in the evolution of the Spinifex Land Management (SLM). Ngaṅamara has cultural significance to Spinifex People (Anangu living in the Great Victoria Desert of Western Australia) and is a traditional source of food, particularly Ngaṅamara eggs. More recently, Ngaṅamara has found significance as one of the primary vehicles through which indigenous rangers from SLM have engaged in threatened species surveys and monitoring. Survey has occurred through implementation of a track-based monitoring methodology using the Cybertracker Program, while monitoring has occurred through repeated visits to known sites and through installation of remote sensor cameras to monitor known nesting sites. As a result, rangers have located three nests (one known to be active in the last three years) contributing to six new records for Ngaṅamara in the Great Victoria Desert. In doing so, these records have filled vital gaps in the current and historical distribution of Ngaṅamara in Australia. Through these activities, rangers have not only gained practical skills in the use of GPS software and equipment but also knowledge of threatened species conservation and threat abatement processes. Ngaṅamara sightings have also provided a useful way of engaging the wider community in land management activities as community sightings are reported to rangers who then inform the survey program. This, in turn, has seen cultural knowledge of Ngaṅamara passed on from older to younger generations, thereby reinvigorating traditional conservative use of Ngaṅamara resources.

### **Introduction**

As Benshemesh (2008, p6) states “Malleefowl provide an opportunity for strategic investment as the species may be viewed as both an indicator species of the general condition of their habitat, and a flagship species that may engender support from the public on a range of conservation issues”. In the case of the Spinifex Land Management (SLM), both elements of this statement are true. The topic of this paper is the latter – Malleefowl as a flagship species for conservation by the public, in this case indigenous people from a remote community in the Great Victoria Desert of Western Australia.

This paper follows the timeline of evolution of SLM and highlights how Ngaṅamara has been a constant theme in this evolution from inception of the program to the current day – as SLM has grown, so too has the profile of Ngaṅamara in the Indigenous community of Tjuntjuntjara, one of the most remote in Australia, home to the Spinifex People and SLM.

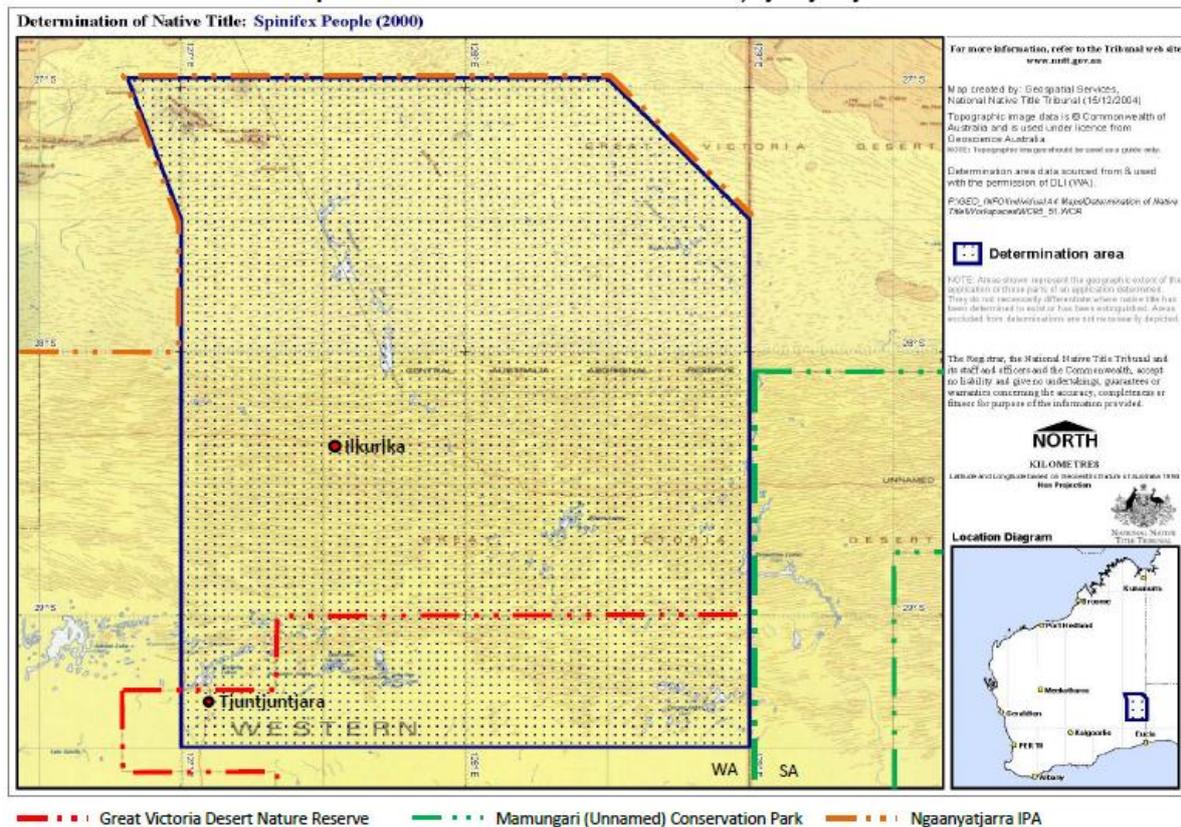
This paper also reports the results of survey and monitoring work that has been undertaken within and around the Spinifex Native Title Determination Area (Spinifex Country), implications of these results for the current and historic distributions of the species in Western Australia, as well as the suite of skills and knowledge developed by rangers through SLM.

### **Background**

#### *Spinifex Country and Spinifex People*

The Spinifex People are the holders of a native title determination over 5.5 million hectares of land in the Great Victoria Desert of Western Australia – the Spinifex Native Title Determined Area, or Spinifex

Country as it is better known (Figure 1). The remote community of Tjuntjuntjara is the on-country population centre of the Spinifex People and, at 700 km northeast of Kalgoorlie, is one of the most remote communities in Australia.



**Figure 1.** Location of Spinifex Country, Tjuntjuntjara and Ilkurka.

Spinifex Country is dense with culturally significant sites and Tjukurpa (broadly – but inadequately – a combination of business, law and religion; Cane 2002). Owing to Spinifex People’s comparatively recent contact history (the last family ‘came in from the bush’ in 1986), maintenance of traditional ways of life and connections to country, Spinifex People are in the unique position of maintaining the vast majority of cultural knowledge. The prevailing land use within Spinifex Country is subsistence hunting and gathering, as well as maintenance of cultural obligations to country. Spinifex People still retain a vast, active body of ecological knowledge.

Spinifex Country spans a transition in ecosystems from the northern edge of the Nullarbor Plain through the salt lakes and sand hills of the Great Victoria Desert, and into the foothills of the Central Ranges. Spinifex Country remains overwhelmingly in pre-European condition and extent, and contains threatened fauna species and endemic flora with localised distributions, including: Princess Parrot, Southern Marsupial Mole and *Grevillea ilkurka*. Suitable potential habitat also exists for a number of other threatened fauna species including Sandhill Dunnart, Great Desert Skink, Greater Bilby and Black-flanked Rock Wallaby.

Of course, a significant element of the suite of extant threatened fauna species occurring in Spinifex Country is Malleefowl, or Nganamara to Spinifex People.

### *Spinifex Land Management*

Spinifex Land Management is the natural and cultural resource management arm of Pila Nguru Aboriginal Corporation (Pila Nguru). Pila Nguru was established in 2001 to hold native title rights and interests on trust on behalf of Spinifex People.

Spinifex Land Management was established in 2011 following receipt of Caring for Our Country funding for the *Keeping Desert Country Healthy Project*. The emergence of Spinifex Land Management and receipt of Australian Government funding merely formalised what Spinifex People had been doing for countless generations – looking after country for all its inherent value and managing those values sustainably.

The core of Spinifex Land Management are the Spinifex Rangers – five young Anangu men from Tjuntjuntjara working part-time (3 days per week). Spinifex Rangers are funded until the end of June 2017 through round one of the Biodiversity Fund (Australian Government).

### ***Ngan̄amara as a vehicle for engagement in threatened species work***

Through the coincidental timing of a few fortunate events, Ngan̄amara became a flagship species for the threatened species work undertaken by Spinifex Land Management and was the driver for not only threatened species surveys and monitoring, but also in raising community awareness in the work being done by Spinifex Rangers, as well as instilling a sense of pride on behalf of the rangers in land management activities they were carrying out and the fact it was part of a much bigger, national picture.

#### *A Conspicuous Beginning - Ngan̄amara & Caring for Our Country funding arrive in Spinifex Country*

Ngan̄amara appeared on the land management scene in Spinifex Country in September 2011 just after Pila Nguru and Spinifex Land Management received their first Caring for Our Country grant through Central Desert Native Title Services and Rangelands NRM as part of the *Keeping Desert Country Healthy Project*. This project was aimed at engaging Indigenous people in remote communities in land management work, principally through fire management and threatened species surveys.

As the fledgling Spinifex Land Management team was driving to a remote cultural site to erect a water tank and feeder roof (shed tank) and meet with funding body staff to discuss the project, two Ngan̄amara darted across the disused exploration track. The lead vehicle, in a fleet of about eight, came to a sudden stop amid a flurry of sand and dust, opening and slamming doors, and shouts directing Senior Traditional Owners (STO) in the direction the birds scurried.

One Senior Traditional Owner set about following the tracks of the birds with younger Traditional Owners hot on his tale, keen to learn (and maybe sample an egg or two). No nest was found after about half an hour searching but a flame of interest was lit – the project hadn't even started and already it had its first threatened species.

Over the coming days another series of tracks were discovered in the vicinity of the shed tank (50 km from the first Ngan̄amara site described above), knowledge of Ngan̄amara was passed from older to younger generations in a culturally appropriate context and all involved were excited about the project.

#### *The Ngan̄amara Connection*

As Spinifex Land Management grew from a casual program based on funds filtered through a number of organisations into a permanent one with its own significant amount of funding, so too did the profile of Ngan̄amara as a symbol of the land management program and an interactive point of connection between the wider community and the program itself on a number of levels – threatened species conservation in both scientific and traditional senses, as well as traditional use of Ngan̄amara eggs. The connection between the Tjuntjuntjara community and Spinifex Land Management provided a foundation for engagement with the community on other threatened species (e.g. Greater Stick-nest Rat (Tjuwalpi), Great Desert Skink (Tjakuṛa) and Brush-tail Possum (Wayuṛa).

An example of the above was exhibited on two obvious occasions in 2013 when community members travelling from other communities advised rangers employed in the land management program they had seen Ngan̄amara and that the rangers should go and have a look. Rangers instigated surveys at both sites resulting in two confirmed records of Ngan̄amara in Spinifex Country. One of these sites contained tracks, feathers and a large, circular digging. The Ngan̄amara connection had clearly been made.

### *Surveys to on-going monitoring*

Throughout 2012 Spinifex Land Management surveyed 18 plots (plus six repeat visits to plots containing Ngan̄amara and other threatened species sites) using a track-based monitoring (TBM) methodology discussed below. Out of 18 plots, Ngan̄amara was recorded in three (16.7%). Additional Ngan̄amara sites were also known previously and were added to the monitoring program that could now be established due to the securing of additional funding.

This funding arrived mid-2012. At the same time, the Australian Feral Camel Management Project provided a swag of motion-sensor cameras and a vote was held as to where to put the first one. The unanimous verdict was at Site 2: Ilkurika – Southeast (described below), the site where Ngan̄amara conspicuously appeared in September 2011. Ngan̄amara tracks had also been recorded during subsequent visits to the site. Cameras were placed at two other Ngan̄amara sites for on-going monitoring.

Thus, the community was now taking an active role in monitoring of threatened species, taking the Ngan̄amara connection to another level.

### ***Survey and Monitoring of Ngan̄amara in Spinifex Country***

#### *Methods*

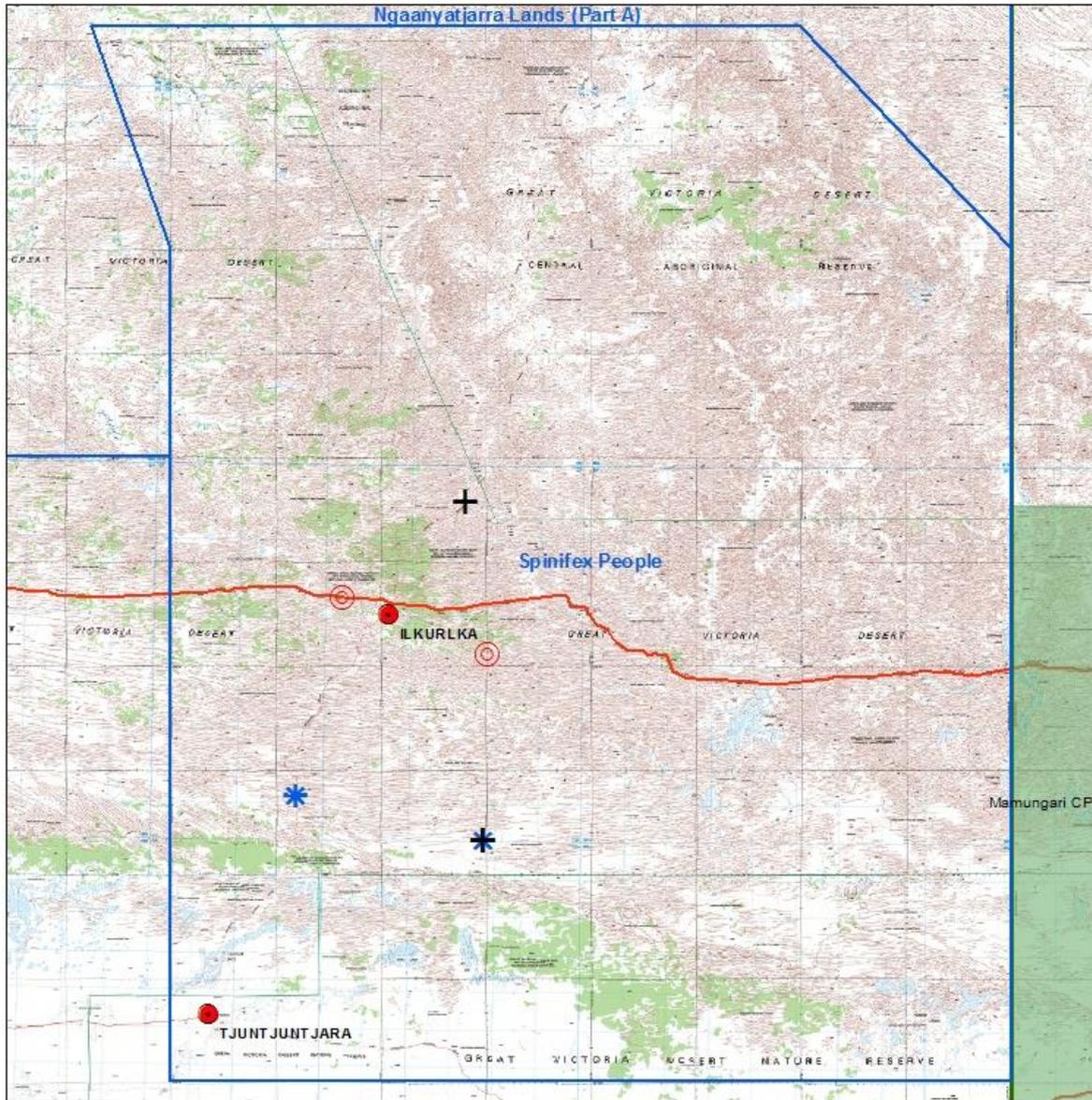
Survey for Ngan̄amara undertaken by Spinifex Rangers utilised the track-based monitoring (TBM) methodology as outlined in Southgate & Moseby (2008) and Moseby, Nano & Southgate (2009). The TBM methodology has been widely used by indigenous ranger and land management groups in the arid zone for a number of years and has provided a considerable amount of meaningful data on the distribution of threatened and invasive species which has been used to inform management to varying degrees.

Using the TBM methodology, 2 hectare plots are searched for a set period of time based on the number of searchers. Presence (and absence) of species is based on tracks and other signs (scats, burrows, diggings, etc.). Other data collected includes tracking conditions (suitability of tracking surface, wind, strength of shadow, etc.) as well as a description of the vegetation across the plot.

Where a species of interest, predominantly Ngan̄amara in this case, has been recorded as present at a site, monitoring has occurred using two methods: repeat visits using TBM methodology and establishment of motion-sensor cameras. The method used was determined by the type of sign indicating the presence of Ngan̄amara.

#### *Ngan̄amara Sites in Spinifex Country*

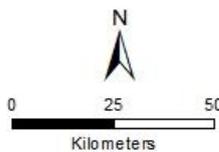
Ngan̄amara has been recorded at five sites in Spinifex Country. Figure 2 indicates the location of these sites. Two of these sites are nests, one of which was recently active when discovered in October 2010 (Figure 3). A further two sites are sightings of live birds, both of which are accompanied by scratchings/excavations. Live birds were also captured by motion-sensor camera in May and September 2013 (Figure 4). Tracks were also observed at these times.



Map Production: DEWNR, Alinytjara Wilurara Region  
 Data Source: DEWNR/RAW Region, Topographic and Administrative Data - From various State government departments  
 Map Datum: GDA 94  
 Date: 02/09/2014

**Legend**

- Place Names
- ✱ Birds, tracks and scratching
- Nest
- + Tracks only
- Native Title Areas
- Conservation Parks
- Main Roads



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**Malleefowl in the Spinifex Region**



**Figure 2.** Location of known Ngaṃamara observations recorded by SLM in Spinifex Country.



**Figure 3.** Nganamara nest recently active in October 2010. Note transition in vegetation from spinifex to Mulga. Photo: Karl Brennan.



**Figure 4.** Images containing Nganamara captured at the same site in May 2013 (L) and September 2013 (R).

Unfortunately each time a bird was caught on camera at this site a feral cat was also caught in images that followed. This latter site was last visited in May 2014. No tracks were recorded. The fifth site comprises tracks observed by a Senior Traditional Owner in September 2011. One repeat visit did not observe any tracks or other sign of Nganamara at this site.

A brief history of each site since first recorded by Spinifex Land Management, as well as an outline of subsequent observations, are presented in the table in Appendix 1.

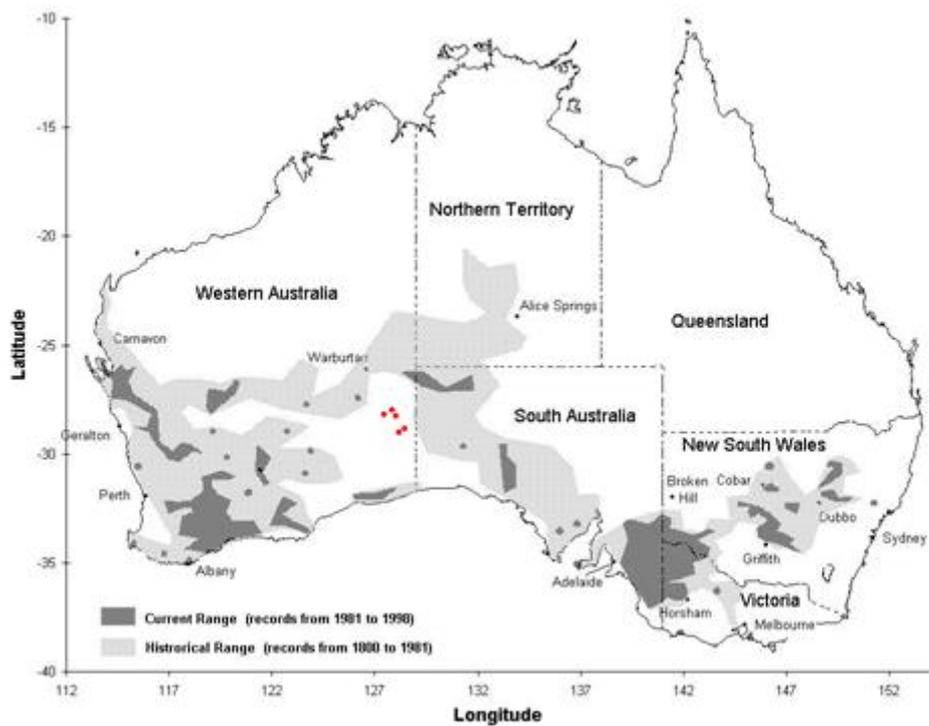
### ***Implications for Current & Historic Distribution of Nganamara***

Five out of six observations presented here are considered to be valid. Observations of Nganamara presented here were considered to be valid if one or more of the following were provided:

- Observation by Senior Traditional Owners\*
- Nest present
- Photo of track confirmed (by ecologist and/or Senior Traditional Owner)
- Photo of individuals.

The observations fill vital gaps in the current distribution of Nganamara and, by logical extension, the historic distribution of the species. Figure 5 indicates the location of records from Spinifex Country in relation to the currently accepted known distribution of Nganamara.

These records for *Nganamara* increase the current and historical range of the species significantly, if not on a national scale then, at least, in the Great Victoria Desert.

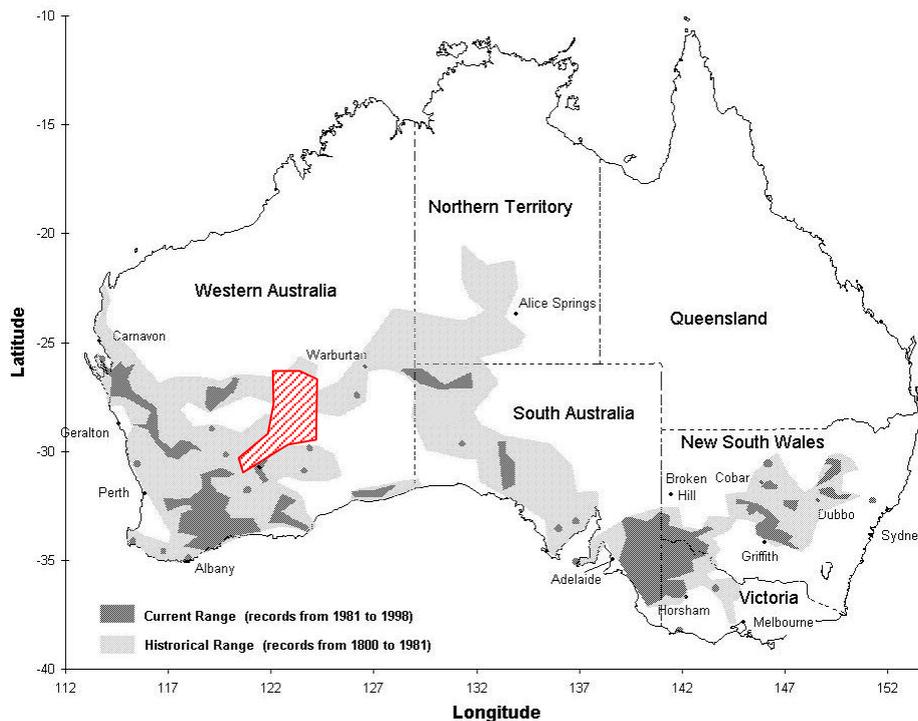


**Figure 5.** Location of records from Spinifex Country in relation to the currently accepted known distribution of *Nganamara* (adapted from NMRT website; reproduced with permission).

This is, in part, a reflection of a paucity of survey effort in the Great Victoria Desert region. For example, Benshemesh (2007) reported that there were less than ten scientific records of *Nganamara* (Malleefowl) from the Great Victoria Desert in the last decade up to 2007. In 2012, a survey conducted by Brennan *et al.* (2012) added one record to this list – the *Nganamara* nest pictured in Figure 3.

Brennan *et al.* (2012) also report that Brennan *et al.* (2009) and MBS Environmental (2009) did not record *Nganamara* during a large-scale survey of the Neale Junction Nature Reserve but did report recent records from both Plumridge Lakes Nature Reserve and a proposed gold mine nearby. *Nganamara* (Malleefowl) are present also in the *Anangu-Pitjantjatjara* Lands of north-western South Australia (Benshemesh 1997, Nesbitt *et al.* 2001, Robinson *et al.* 2003).

Combining this information with records from Spinifex Country presented here, and Senior Spinifex Elders knowledge of the species current and historic distribution, makes a worthy case for expanding the historic range of *Nganamara* in the vicinity of Great Victoria Desert and surrounds (Figure 6).



**Figure 6.** Current and historical range of Malleefowl across Australia as per National Malleefowl Recovery Team website. Red shaded area indicates potential expansion of historical range based on sightings presented here and Spinifex People’s knowledge of Ngan̄amara distribution (adapted from NMRT website; reproduced with permission).

Spinifex Country, and the Great Victoria Desert generally, remain markedly under-surveyed. Additional survey work conducted by SLM and others associated with possible mining developments will no doubt continue to fill in the gaps of Ngan̄amara distribution in the Great Victoria Desert of Western Australia.

### **Capacity Building & Skill Development**

The occurrence of Ngan̄amara in Spinifex Country, and the timely appearance of two birds prior to the beginning of a threatened species project (the first funded land management activity in Spinifex Country), provided a connection between Spinifex Rangers and an iconic threatened species.

This connection, combined with meaningful employment and the opportunity to get out on-country, created a productive space within which An̄angu from Tjuntjuntjara gained skills in the use of a number of pieces of technology including GPS, rugged laptop computers, rugged handheld PDAs, motion-sensor cameras as well as software packages including Cybertracker and Microsoft Excel (rangers analyse images from motion sensor cameras on return to Tjuntjuntjara).

Rangers have also gained knowledge of traditional use of the species and the role of Ngan̄amara in Spinifex Tjukurrpa. For example, people traditionally ate Ngan̄amara eggs but not adult birds, while some eggs were always left to hatch. In addition, an individual Spinifex person would own the rights to collect eggs from a particular nest.

This wide-ranging capacity building, skill development and enhancement of knowledge are all linked to Ngan̄amara, a visible threatened species in Spinifex Country. If not for the sighting, cultural knowledge and timely discoveries of tracks (to maintain people’s interest) then knowledge of threatened species work wouldn’t have been as easy to facilitate.

## **Summary**

In summary, Ngan̄amara has been integral to development of the Spinifex Land Management program and has been there from the start. The presence and timely appearance of the species in Spinifex Country has accelerated development of SLM and Spinifex Rangers, and has been a constant theme in the program and one that has captured interest of Spinifex Rangers and the Spinifex community in Tjuntjuntjara.

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**Appendix 1.** Record of activities at each Nganamara site within Spinifex Country.

Site	Observation Type	Pre-2010	2010	2011	2012	2013	2014
FMSP02a	Live birds, scratchings, tracks	-	-	2 birds sighted  Fresh tracks	Fresh track (> 2 days)  Linear & circular scratching	2 birds captured on camera (+ cat)  Fresh track + scratching	No sign
FMSP02b	Live birds, tracks	-	-	-	Old track (>7 days)  Cat track observed	1 bird captured on camera (+ cat)	-
FMSP06	Tracks	-	-	Fresh tracks	-	No sign	-
FMSP13	Live birds, scratching	-	-	-	Birds (3) sighted + scratching	-	-
Nest (Warru Rd)	Nest	-	Nest found with egg shell	-	No activity	No activity	No activity
Nest (Anne Beadell Hwy)	Nest	Long disused nest next to road	No activity	No activity	No activity	No activity	No activity