

# Faunal extinctions – where and why?

By Ian Abbott

**When the British settled Western Australia in 1829, the bird and mammal species present were the legacy of two opposing processes operating in geological time – extinction and speciation. After 180 years of European settlement, how do we sort out the potential factors involved in causing extinctions? Why is it necessary to know this?**

Bones in caves near Cape Leeuwin indicate the extinction of the koala and wombat in WA some 30,000 years ago and the occurrence of rock wallabies there 5,000 years ago. These extinctions probably resulted from a change in climate, possibly with the help of hunting by Nyongangars.

Since European settlement, people have colonised vast areas of WA, clearing native vegetation to provide shelter, food, energy and income. Livestock were introduced, some of which have become feral. Other animals such as rabbits and foxes migrated from South Australia.

Using all available information, we have been able to reconstruct where populations of each species are known to have disappeared (local extinction), map these and combine them into a single map showing the pattern for all species.

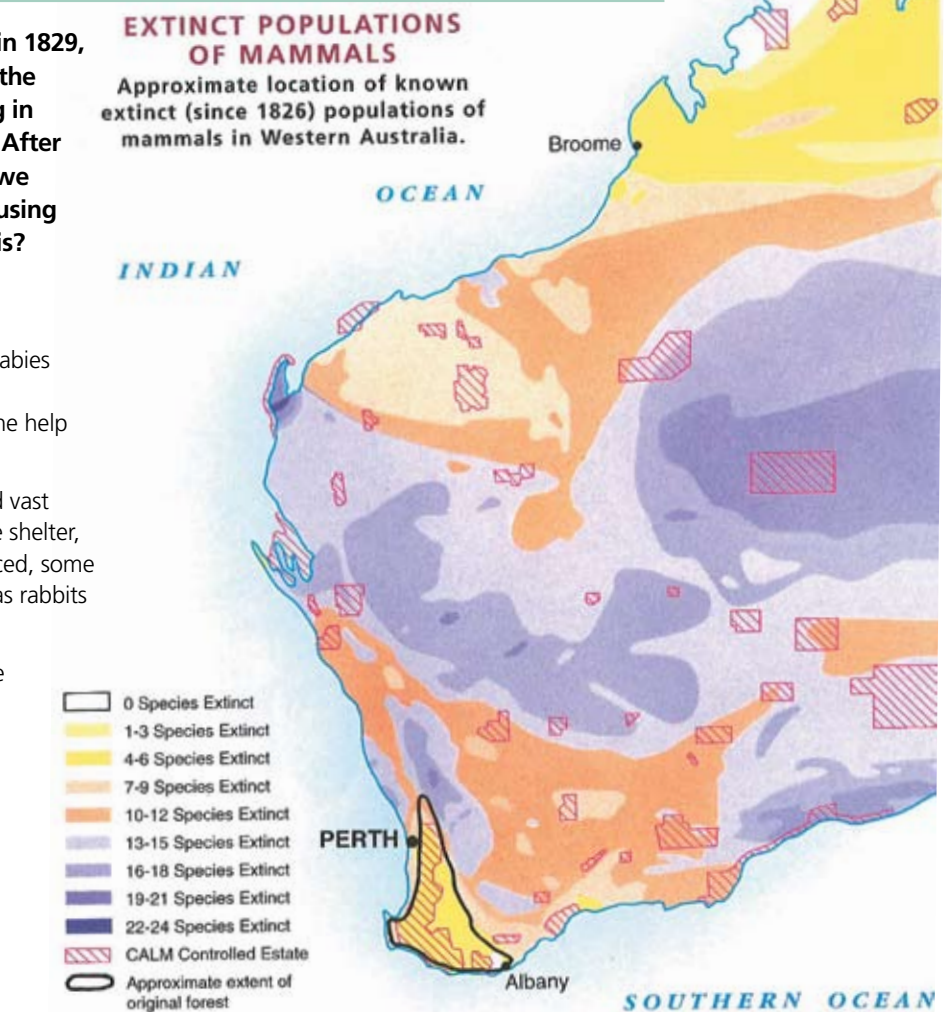
## Birds

Most local extinctions have been on the Swan Coastal Plain followed by the central wheatbelt (view map in Abbott 2009). This has resulted from native vegetation being destroyed to create the city and suburbs of Perth, and to grow crops and pasture. In much of the interior, extinctions have been few, even though many species are less common than before pastoralists occupied the land. The largest part of the south-west with the fewest extinct bird populations is the jarrah and karri forest.

## Mammals

Interestingly the pattern of mammal extinction is unlike that for birds and there is no single dominant cause (see map). Most mammal population extinctions have been in the least-settled parts of WA. The first wave of extinctions in 1880–1920 occurred in the western half of WA and was probably due to disease. The disease appears to have started around Shark Bay and spread quickly to the north, east and south to reach Albany by 1920.

The second wave of extinctions started soon after 1911 with the arrival of the fox from South Australia. Some populations recovered after the first wave of extinctions, only to succumb to predation by the fox. The prior arrival of the rabbit from South Australia in 1895 helped maintain large populations of foxes, thus intensifying predation of



native mammals. Although cats were feral throughout WA by 1890, observations in northern South Australia and southern Northern Territory in the 1920–30s reveal that the mammal fauna was intact there until the fox arrived in 1930.

The Canning Stock Route (Halls Creek to Wiluna) and the Nullarbor Plain still retained many native mammal species until the 1930s, even though the feral cat had been present for many decades. It seems that traditional mosaic burning by desert Aborigines helped buffer native mammals against predation by cats and foxes, for when Aborigines left the deserts for towns, fuel levels increased and subsequent lightning strikes caused extensive wildfires. These removed the shelter of native mammals, making it easier for cats and foxes to kill any surviving or re-colonising animals.

## Relevance to management

Knowledge of where extinctions have occurred means that once threats are diminished, DEC can attempt to restore original distributions with confidence. DEC staff have translocated numerous species to Peron Peninsula, Lorna Glen, Dryandra and elsewhere.

## More information

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