



Diprotodon

Diprotodons were the largest marsupials that ever lived. They existed from 1.6 million years ago until about 50,000 years ago (through most of the [Pleistocene epoch](#)). Diprotodon [fossils](#) have been found in many places across [Australia](#), including complete skulls and skeletons, as well as hair and foot impressions. More than one female skeleton has been found with a baby lying where it died while still in its mother's pouch. They inhabited open forest, woodlands, and grasslands, possibly staying close to water, and eating leaves, shrubs and some grasses. The largest were [hippopotamus](#)-sized: about three meters from nose to tail, standing two meters tall at the shoulder. The closest surviving relatives are the [wombats](#) and the [Koala](#). It is fancifully suggested that diprotodons may have been the inspiration for the legends of the [bunyip](#). [Cast of a diprotodon skeleton](#)

Theories on diprotodon extinction

Diprotodons, along with a wide range of other Australian [megafauna](#), became extinct shortly after humans arrived in Australia about 50,000 years ago. Three Theories have been advanced to explain the mass extinction.

Climate change

Australia has undergone a very long process of gradual aridification since it split off from [Gondwana](#) about 40 million years ago. From time to time the process reverses for a period, but overall the trend has been strongly toward lower rainfall. The recent [ice ages](#) produced no significant glaciation in mainland Australia but long periods of cold and very dry weather. It is suggested that lowered rainfall during the last ice age killed off all the large diprotodonts. Critics of this theory point out that the large diprotodonts had already survived a long series of similar ice ages and that there does not seem to be any particular reason why the most recent one should have achieved what all the previous ice ages had failed to do, and add that, in any case, the peak period of Climate change appears to have been 25,000 years after the extinctions. Finally, Critics point out that even during climatic extremes some parts of the continent always remain relatively exempt: the tropical north, for example, stays fairly warm and wet in all climatic circumstances; alpine valleys are less affected by drought, and so on.

Human hunting

The *blitzkrieg* theory begins with the observation that the extinctions appear to have coincided with the arrival of Human beings on the continent, notes that, in broad, it was the largest and least well-defended species that died out, and argues that the obvious

Diprotodons
thumb
<u>Scientific classification</u>
Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Subclass: Marsupialia
Order: Diprotodontia
Suborder: Vombatiformes
Family: Diprotodontidae
Genus: <i>Diprotodon</i>
<u>Species</u>
Diprotodon opatum
Diprotodon minor
Diprotodon loderi
Diprotodon annextans

explanation is that Human hunters killed and ate them; as happened with the [megafauna](#) of [New Zealand](#) and, at least in part, America; probably in the space of only a thousand years or so. Recent finds of Diprotodon bones which appear to display butchering marks lend support to this theory. Critics of this theory regard it as simplistic, argue that (unlike New Zealand and America) there is little direct evidence of hunting, and that the dates on which the theory rests are too uncertain to be relied on.

Human land management

The third theory also places humans at centre stage, but as indirect rather than direct agents of change. It draws a link between the known land-management and hunting practices of modern [Aboriginal](#) people as recorded by the earliest European settlers before Aboriginal society was devastated by European contact and disease; regular and persistent burning off to drive game, open up dense thickets of vegetation, and create fresh green regrowth for both people and game animals to eat; and the sudden increase in ash deposits at the time that people first arrived in Australia. By changing the landscape with fire, this theory argues, the first Human settlers destroyed the ecosystem on which large marsupial fauna depended.

Conclusion

These Theories are not mutually exclusive. Although they are hotly and sometimes acrimoniously debated by specialists, few would argue that it is necessary to choose one single explanation for the extinction of many different animals in a wide range of different environments, from tropical to temperate, from desert to rainforest. Secondly, each of the three proposed mechanisms is broadly supportive of the other two, and often it makes little difference which one is regarded as the *primary* cause. For example, if burning an area of fairly thick forest and thus turning it into a more open, grassy environment is considered likely to impact on the viability of a large browser (an animal that eats leaves and shoots rather than grasses), the reverse is equally true: removing the browsing animals (by eating them, or by any other means) within a few years produces a very thick undergrowth which, when a fire eventually starts through natural causes (as fires tend to do every few hundred years), burns with greater than usual ferocity. The burnt-out area is then repopulated with a greater proportion of fire-loving plant species (notably eucalypts, some [acacias](#), and most of the native grasses) which are unsuitable habitat for most browsing animals. Either way, the trend is toward the modern Australian environment of highly flammable open sclerophyllous forests, woodlands and grasslands, none of which are suitable for large, slow-moving browsing animals—and either way, the changed microclimate produces substantially less rainfall.

[Category:Prehistoric mammals](#) [Category:Vombatiforms](#) de:Diprotodon nl:Diprotodon

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