

Early Australian

ABSOLUTE TIME PERIOD: c. 40,000 B.P.–50,000–7000 B.P.

RELATIVE TIME PERIOD: Precedes Late Australian.

LOCATION: Sahul, consisting of Australia, including islands, and New Guinea, and portions of the now submerged continental shelf.

IMPORTANT SITES: Lake Mungo, Malangangerr, Mussel Shelter, Rocky Cape South and North, Kenniff Cave, Purritjarra.

CULTURAL SUMMARY

Environment

Climate. Early Australian represents the period prior to the arrival of the sea at close to its present level (+/– 1 m). Before about the last glacial maximum, the climate was one of higher absolute rainfall, slightly cooler temperatures, and lower evaporation rates than today. Sea levels fluctuated but were usually substantially lower than today, reaching –130 + 10 m at 20,000 years B.P. The glacial maximum, peaking c.18,000–14,000 B.P., was much drier and cooler than the previous phases and today. Absolute rainfall was as much as half that of the previous period, but potential evaporation

rates were higher. Sea level reached a low point of –150 m about 18,000 years ago, and at that time the northern coast lay approximately 1,200 km farther north than today. The terminal Pleistocene/early Holocene saw temperatures increase to approximately their present levels, and rainfall increased.

Topography. Covering mainland Australia, Tasmania, New Guinea, close offshore islands, and the continental shelf exposed at lower sea levels. Generally low-lying country (much of the country under 600 m) with only small local relief in many areas. Mountain chains extend down the eastern side of the continent, including Tasmania, and across New Guinea. During periods of low sea level, a large (165,000 km³ with a maximum depth of 15–20 m) a fresh-brackish water lake formed in the Gulf of Carpentaria.

Geology. River basins and plateaus composed of sedimentary rocks and metasediments dominate the landscape, with volcanic rocks most common in the mountainous east. Silcrete, chert, quartzite, and quartz are the most abundant rocks available for artifact manufacture. Flint is available along the southern coast, and minor obsidian outcrops were used in the northeast of mainland Australia.

Biota. Much of the continent is covered with spinifex and tussock grasslands and savanna woodlands. In

more coastal regions, sclerophyll woodlands and rainforests are found. Montane areas may additionally contain communities such as *Nothofagus* forests, peat swamps, or alpine heath/grasslands. Terrestrial fauna is dominated by distinctive marsupials such as macropods (kangaroos, for example), possums, and small carnivores. A variety of bats, rats, reptiles, and birds is also present and were consumed by humans. Extinct genera, representing animals of large size, such as diprotodontids and large macropods (e.g., *Protemnodon*) were also present during the timespan of human occupation. In coastal waters, abundant animal forms include fish, mollusks, and large marine mammals such as dugong and dolphin. It has been suggested that coastal biomass was low for an extended period following the marine transgression, although the regional uniformity of this pattern has been much debated.

Settlements

Settlement System. *Homo sapiens* colonized the Australian continent more than 40,000 years ago, although there is extensive debate as to whether humans arrived as early as about 55,000 B.P., or as late as 40,000–45,000 B.P. This debate hinges on different opinions as to the veracity of alternative radiometric dating techniques, as well as different opinions on the existence of taphonomic processes. Claims for substantially earlier occupation have now been shown to be spurious. Uncertainty about the date of colonization makes reconstructions of the first settlement systems tenuous. For instance, if colonization took place prior to 40,000 B.P., we know of so few sites that discussions of settlement are entirely theoretical. If colonization took place shortly before 40,000 B.P., then most areas of the continent, as well as Melanesia, were inhabited at approximately the same time, although dating uncertainties make it impossible to evaluate the actual rate of colonization within Australia.

Although it is possible that early settlement may have focused on coastal resources, there is growing evidence of occupation in arid and semiarid inland landscapes. Lake Mungo is the most famous example of inland occupation, but hundreds of sites now reveal Pleistocene occupation in a diverse range of landscapes. Settlement is not continuous in all landscapes. In the glacial uplands of Tasmania, humans abandon the region permanently in the terminal Pleistocene. In some arid landscapes, entire regions were abandoned during the glacial maximum, whereas in some regions with favorable resource bases, occupation continued throughout the glacial maximum. Perhaps the best example of the

latter pattern has been documented at Puritjarra, where human occupation is visible by 22,000 B.P. and occasional visits to the site by mobile foragers are suggested to have continued throughout the glacial maximum, because of the availability of permanent water nearby.

Settlement structure varies between regions in response to differences in resource abundance and distribution. Sites often cluster around resources such as water and stone material and are consistent with settlement systems based on mobile foraging.

Housing. Many Pleistocene sites have been found in rock shelters, but it is likely that in many landscapes this is a product of preservation and discovery. Open sites located on river banks or lake margins often consist of small middens or sparse artifact scatters with no indication of campsite structure (although hearths are sometimes observed) and no features that might suggest the construction of housing. The absence of archaeological information for housing is most likely to reflect the problems of preservation.

Population, Health, and Disease. Population size and distribution have proved extremely difficult to determine, and views of demographic trends have polarized into two models: (1) an early population dispersion and rapid increase until carrying capacity is reached, and (2) a very slow population increase prior to the Holocene. Skeletal markers reveal that health was generally good, with low levels of anemia, parasitism, and infectious diseases.

Economy

Subsistence. Early Australian subsistence involved a range of foraging practices, presumably involving plant food staples supplemented by hunting. One feature of subsistence practices is the focus on a single resource. This focus is displayed differently in each region, such as fishing for golden perch at the western New South Wales lake systems or the spearing of red-necked wallabies in glacial Tasmania. Arguments that the Pleistocene hunters of Australia were unable to exploit inland resources and were “coastally adapted” have been discarded in light of these dedicated exploitation patterns.

Considerable effort has been spent on the question of human involvement in the extinction of the marsupial megafauna. Although many archaeologists have argued in favor of human culpability in these extinctions, using the familiar idea that the human colonizers encountered naive animals and preferentially hunted them, not

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a single “kill” site has been located, and climatic change seems a more likely explanation for the disappearance of these large animals. It therefore seems that hunters preferred to target smaller, more abundant game involving less risk.

Wild Foods. Plant food staples are poorly documented, presumably because of preservational factors, and their exploitation is revealed mainly by grindstones. Archaeological sites contain much evidence of hunting. In coastal landscapes, the primary wild animal foods include mollusks (particularly mussels, oysters, and cockles) and fish. In inland landscapes, a variety of animals was hunted, including kangaroos, possums, freshwater fish and eels, snakes, lizards, freshwater turtles, and freshwater mollusks.

Industrial Arts. The basis of access or prohibitions on production and use of material culture is unknown. Production of some items requires a high degree of skill, but it is unclear whether anything approaching craft specialization existed.

Utensils. Poor preservation of organic artifacts has impeded a detailed reconstruction of the tool kit, but it is now clear that a wide range of utensils was manufactured and employed, at least since 35,000 B.P. (the record prior to that time being extremely limited). Stone artifacts are the most abundant utensils preserved, archaeologically. Many were held in the hand and used to cut or scrape, but some specimens were hafted, such as the edge-ground axes found at Malangangerr and other northern sites dating to more than 20,000 B.P. Wooden utensils are rarely preserved, but depictions in rock art reveal instruments such as boomerangs, spears, and spear throwers. Such wooden items are actually preserved in waterlogged deposits of terminal Pleistocene age and are inferred at earlier time periods from skeletal pathologies such as weapon injuries or activity-induced joint damage. Fishing nets have also been inferred from the restricted size ranges of fish in the middens at lake systems in Western New South Wales.

Ornaments. Although ornaments have not been preserved in abundance, there are sufficient examples to demonstrate they were widely employed and at least in some instances well made and ornate. In the period after about 30,000 B.P., there are examples of preserved ornaments from most parts of the continent. The best-known instances include numbers of neatly finished bone beads from Mandu Mandu creek rock shelter in the northwest, and stones “pendants” from Devil’s Lair

cave in the southwest. However, these ornaments are not as elaborate as in the Late Australian Tradition. In the terminal part of this tradition, painted rock art in Northern Australia depicts elaborate headdresses, skirts or belts, armbands, and baskets.

Trade. Movement of materials such as ocher over distances of 100–200 km are documented in the archaeological record, but given the inferred low population densities and large territory size, this does not necessarily indicate trade between groups. Although it is likely that trade between adjacent groups took place, there is no evidence for formal long-distance trade networks of the kind observed historically. As indicated by the minimal quantities of nonlocal materials in Pleistocene archaeological sites, even trade between existing groups may often have been at a low level.

Sociopolitical Organization

Conflict. Conflict is demonstrated directly in skeletons with weapon injuries and in some rock art panels from Northern Australia where there are depictions of opposing groups of humans throwing spears. The nature of this violence, whether within or between groups, its intensity, and the means by which it was controlled are unknown.

Religion and Expressive Culture

Religious Beliefs. The recognition of an extended Pleistocene occupation of Australia has encouraged speculation of a similarly extended time-depth to Aboriginal identity and religion. These arguments have been advanced particularly in light of burials, such as those at Lake Mungo. Although elaborate burials of this kind clearly indicate the existence of ritual, perhaps religious, beliefs at 30,000 B.P., there is no basis for describing the nature of those beliefs or for asserting they were the same as those observed historically. Indeed, the archaeological evidence indicating the emergence of recent ritual systems in the Late Australian period may indicate that religious beliefs during the Pleistocene were different to an unknown extent.

Arts. Rock art, some of which may reflect ritual practices, is known from all regions of Australia. Production of this art varied greatly between regions, ranging from nonfigurative peckings to figurative painting to hand stencils.

Death and Afterlife. Elaborate burials involving a range of practices (including cremation and extended burial), and evidence for associated activities such as coating the body in ochre and/or deposition of grave goods, suggest complex views on death. The nature of these views is not known.

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SITE

Lake Mungo

TIME PERIOD: c. 45,000–7000 B.P.

LOCATION: Lake Mungo, western New South Wales.

MAJOR TRADITION: Late Australian.

DESCRIPTIVE SUMMARY

Local Environment

Lake Mungo is one of a series of connected extinct lake beds, known as the Willandra lakes. The locality often discussed as the "Lake Mungo" archaeological site is typically the southwest portion of the Lake Mungo lunette, incorporating the Mungo A and Mungo B surface scatters and the Mungo 1 burial (Shawcross 1998). This lunette, often called the "Walls of China," is a distinct feature in a flat landscape, made more obvious because erosion of the dune presents bright quartz sands to the casual visitor. Originally the lunette was 40 m high, and Bowler (1998) has revealed four stratigraphic units in the dune, named from oldest to youngest: Golgol, Mungo, Arumpo, and Zanci. Although the Golgol unit (>100,000 B.P.) is prehuman, archaeological materials are found in the Mungo (55,000–35,000 B.P.), Arumpo (35,000–22,000 B.P.), and Zanci (22,000–19,000 B.P.) units. Although the lake has been dry since that time, and lunette formation ceased, human occupation continued in the region.

Physical Features

Erosion of the lunette has exposed areas of the Mungo, Arumpo, and Zanci stratigraphic units.

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A variety of archaeological material is found within and lying on these sediments. Flaked stone artifacts, made primarily from silcrete available on the western side of the lake, and manuports are found throughout the cultural sequence (Shawcross 1998). Sandstone slabs with grinding surfaces are found throughout, although rare, but millstones distinctive of grass-seed processing are absent (Bowler 1998; Smith 1986). Fish remains in the form of otoliths and shells of the freshwater mussel (*Velesunio ambiguus*) are found in middens on the lunette, along with terrestrial fauna such as Euros (*Macropus robustus*), Eastern hare-wallabies (*Lagorchestes* sp.), rat kangaroos (*Bettongia* sp.), and bandicoots (*Perameles* sp.). Fragments of bone from megafaunal species are also found on the lunette, but none shows signs of human predation (Bowler 1998). Hearths are indicated by charcoal patches and burnt clay. Human burials, some containing large quantities of ocher, and disarticulated human bone fragments are also found in dune sediments. Interpretation of these materials is complicated by extensive deflation in some localities and by the existence of taphonomic processes producing differential preservation of body parts and taxa, and preferential survival of burnt bone.

Cultural Aspects

This is the oldest site known from Southern Australia, has evidence for occupation over an extended period, and has evidence for a wide range of activities. Lake Mungo is most famous for its evidence for early burial and ritual. Two famous burials on the site have often been referred to as Mungo I and Mungo III.

Mungo I, dated to approximately 26,000 B.P., consists of the remains of a young female who had been cremated (Bowler et al. 1970), whereas Mungo III was the extended burial of a male in which the body had been coated in powdered red ocher. These burials are indications of ritual, perhaps religious beliefs, at 30,000 B.P.

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