



Australian Heritage Database

Places for Decision

Class : Natural

Identification

List: National Heritage List
Name of Place: Ku-ring-gai Chase National Park, Lion, Long and Spectacle Island Nature Reserves
Other Names:
Place ID: 105817
File No: 1/13/016/0003
Nomination Date: 13/12/2005
Principal Group: Temperate environments

Status

Legal Status: 15/12/2005 - Nominated place
Admin Status: 25/10/2006 - Assessment by AHC completed

Assessment

Recommendation: Place meets one or more NHL criteria
Assessor's Comments:
Other Assessments: :

Location

Nearest Town: Bobbin Head
Distance from town (km):
Direction from town:
Area (ha): 14928
Address: Ku-ring-gai Chase Rd, Bobbin Head, NSW 2074
LGA: Ku-ring-gai Municipality NSW
Hornsby Shire NSW
Pittwater Municipality NSW
Warringah Shire NSW
Gosford City NSW

Location/Boundaries:

About 15000ha, Bobbin Head Road, Bobbin Head, comprising Ku-ring-gai Chase National Park, Lion Island Nature Reserve, Long Island Nature Reserve and Spectacle Island Nature Reserve.

Assessor's Summary of Significance:

Ku-ring-gai Chase National Park and Long Island, Lion Island and Spectacle Island Nature Reserves contain an exceptional representation of the Sydney region biota, a region which is recognised as a nationally outstanding centre of biodiversity. The place contains a complex pattern of 24 plant communities, including heathland, woodland, open forest, swamps and warm temperate rainforest, with a high native plant species richness of over 1000 species and an outstanding diversity of bird and other animal species. This diversity includes an outstanding representation of the species that are unique to the Sydney region, particularly those restricted to the Hawkesbury Sandstone landform. The place is an outstanding example of a centre of biodiversity.

Draft Values:

<i>Criterion</i>	<i>Values</i>	<i>Rating</i>
A Events, Processes	The Sydney region contains an outstanding concentration of biodiversity and is recognised as a centre of biodiversity when compared to other areas across Australia. Ku-ring-gai Chase National Park, Long, Lion and Spectacle Island Nature Reserves contain an exceptional representation of the Sydney region biota with high species richness across many groups and a representative range of ecosystems. The place contains a complex pattern of 24 plant communities, including heathland, woodland, open forest, swamps and warm temperate rainforest and is important for its species richness, with over 1,000 native plant species in a wide array of families including heaths (Epacridaceae), wattles (Mimosaceae), grevilleas and banksias (Proteaceae) and members of the eucalypt family (Myrtaceae). The place also has an outstanding diversity of birds and other animal species notably perching birds (Passeriformes), including the families scrubwrens (Acanthizidae), honeyeaters (Meliphagidae), Australasian robins (Petroicidae) and fantails, drongos and monarchs (Dicruididae). The place exemplifies the biodiverse Hawkesbury Sandstone environment and is an outstanding example of a centre of biodiversity (Benson & Howell 1994, Braby 2000, DEH 2006a, DEH 2006b, NSW NPWS 2002 and Thomas and Benson 1985).	AT
A Events, Processes	Ku-ring-gai Chase National Park, Long, Lion and Spectacle Island Nature Reserves contain an outstanding representation of the species that contribute to the high endemism value of the Sydney region (NSW NPWS 2002, DEH 2006a, DEH 2006b), in particular, those restricted to the Hawkesbury Sandstone landform.	AT

Historic Themes:

Nominator's Summary of Significance:

Ku-ring-gai Chase National Park is the second oldest national park in Australia and the oldest national park established primarily for nature conservation (NPWS 2005a). It is one of the top ranking biodiversity reserves.

Ku-ring-gai Chase National Park is one of a number of sandstone national parks in the Sydney region that form part of one of the two temperate hotspots for plant endemism and richness in temperate Australia (the other being south-west Western Australia).

Ku-ring-gai Chase National Park (Sydney Basin) is recognised as a species rich area on a national scale. The Sydney map sheet is the most species rich region in Australia for birds and within the top 1% for species richness (and in some genera, endemism) of several families and genera of plants.

Ku-ring-gai Chase National Park is within the top 5% of areas important for eucalypts in terms of species richness, structural representation, primitive species and endemism.

Ku-ring-gai Chase National Park has been identified as one of Australia's richest and significant terrestrial and freshwater biodiversity hotspots for a number of different groups of species, ranked third in Australia behind the Daintree and Wet Tropics.

Ku-ring-gai Chase National Park is ranked in the top ten natural heritage hotspots identified for its importance for Gondwanan or primitive species.

Ku-ring-gai Chase National Park is an important adjunct to the Blue Mountains as a world heritage property for eucalypt diversity.

Ku-ring-gai Chase National Park and the associated reserves have great cultural and spiritual importance for Indigenous Australians. This importance lies both in its general landscape, and in the many Aboriginal sites found in the area. There are more than 800 Aboriginal sites remaining in the Ku-ring-gai Chase National Park today and a significant amount in the associated reserves. These relics of the area's rich, living Aboriginal culture include rock engravings, burial sites, axe grinding grooves and places that show evidence of Aboriginal occupation such as middens and shelters (NPWS 2005a, NPWS 2002).

Ku-ring-gai Chase National Park and the associated reserves are also known for their breathtaking scenery and as a large natural area in the Sydney metropolitan area providing an escape from the city (Higgins et al. 1986, Cronin 2000, NPWS 2002, NPWS 2005a).

The natural and cultural heritage of Ku-ring-gai Chase National Park and the associated reserves and their location within the Sydney metropolitan area, provide significant opportunities for education and research (NPWS 2002).

Ku-ring-gai Chase National Park and the associated reserves provide a refuge from the city for a large number of rare, uncommon and threatened fauna, flora and ecological communities (NPWS 2002, NPWS 2005a).

Ku-ring-gai Chase National Park contains important historic sites associated with early recreational use, transport, navigation and defence (NPWS 2002, NPWS 2005a).

Ku-ring-gai Chase National Park and the associated reserves are listed on the Register of National Estate. The national park is listed for its aesthetic value, for its scientific importance as a remnant of the natural environment of Sydney and for its abundance of Aboriginal sites. Lion Island is listed because it provides important breeding habitat for a number shearwaters and little penguins; Long Island for its unique and diverse vegetation; and Spectacle Island for its particularly diverse vegetation (NPWS 2002).

Description:

Ku-ring-gai Chase National Park has been a conservation area since 1894. It is located within the Sydney metropolitan area, approximately 20 kilometres north of the centre of Sydney and receives over 2 million visitors a year. The National Park includes Barrenjoey Head, the site of an early customs house and a lighthouse complex with two cottages. Lion Island (8 hectares) is situated just inside the entrance to Broken Bay and is entirely included in the nature reserve. Long Island is situated near the town of Brooklyn. Most of the island (73 hectares) is included in the nature reserve while a small area at the eastern end of the island is managed by the State Rail Authority and includes a railway tunnel and several buildings. Spectacle Island (36 hectares) is situated near the junction of the Hawkesbury River and Mooney Mooney Creek and is entirely included in the nature reserve (NSW NPWS 2002).

Covering an area of 14,882 hectares, Ku-ring-gai Chase National Park is located on the dissected Hornsby Plateau near the centre of the sedimentary Sydney basin and demonstrates a range of landscapes, including drowned river valley estuaries, steep sandstone cliffs and plateaus (Thomas & Benson 1985). Lion Island, Long Island and Spectacle Island Nature Reserves are all located in the lower Hawkesbury River close to Ku-ring-gai Chase National Park.

Three major sedimentary formations dominate the geology within the area namely, Wianamatta shale, Hawkesbury sandstone and Narrabeen Group sandstones and shales. These formations were created during the early Jurassic and late Triassic (approximately 190 to 225 million years ago). The last major rise in sea level occurred during the Holocene and drowned the valleys of Cowan, Coal and Candle and Smiths Creeks to form the current foreshore. This rise in sea level also resulted in several peaks becoming islands, including Lion, Long and Spectacle Islands.

The place is within the Hawkesbury-Nepean catchment, an area with a very rich and distinctive assemblage of species that thrive on poor soils (Benson et al 1996, NSW NPWS 1996). The non-tree component is especially rich and contributes the major part of the plant biodiversity (Benson et al 1996). The place includes a complex pattern of vegetation communities such as heathland, woodland, open forest, swamps and warm temperate rainforest. The attributes and distribution of the vegetation communities within the National Park are strongly related to geology, soil, drainage and aspect. Species from the Proteaceae family are common in the understorey of the Hawkesbury sandstone (Howell and Benson 2000). Wet heathland occurs over Wianamatta shale platforms that remain on some ridge tops. The Narrabeen shales found in gullies and sheltered valleys support open forest communities of taller trees including some rainforest species.

The vegetation communities of most conservation significance in the place are those that are poorly reserved elsewhere (Thomas and Benson 1985). These tend to be associated with uncommon or remnant geological features or specific habitats and therefore tend to be small in area. Of special interest is the vegetation found on Wianamatta Shale that is generally open forest with dominant species being common name silvertop ash (*Eucalyptus sieberi*), myrtle wattle (*Acacia myrtifolia*) and spiny bossiaea (*Bossiaea obcordata*). The diatrema vegetation communities at Campbells Crater and Smiths Crater along with the vegetation growing on volcanic dykes at West Head are other products of unusual underlying geology. Three ecological

communities listed on the New South Wales Threatened Species Conservation Act 1995 are also present, namely Duffys Forest, Pittwater Spotted Gum Forest, and Sydney Coastal River-flat Forest.

There are over 1,000 plant species recorded from the place (NSW NPWS 2002), including several species protected under the NSW Threatened Species and Conservation Act 1995: Caley's grevillea (*Grevillea caleyi*), Bynoe's wattle (*Acacia bynoeana*), a shrub (*Haloragodendron lucasii*), a shrub (*Persoonia hirsuta*), a shrub (*Persoonia mollis* spp. *maxima*) and a shrub (*Asterolasia elegans*). Additionally the following species have been listed as vulnerable: a shrub (*Kunzea rupestris*), a shrub (*Darwinia biflora*), Camfield's eucalypt (*Eucalyptus camfieldii*), an orchid (*Cryptostylis hunteriana*) and a shrub (*Tetratheca glandulosa*) (NSW NPWS 2006a).

The place is recognised as containing a rich vertebrate fauna, a reflection of the diversity of vegetation communities and habitats in the area and the Park's location in one of the most diverse parts of Australia, the Sydney basin. There are over 160 species of avifauna recorded. There are 28 mammals recorded in the park and reserves of which 11 are bats. The herpetofauna (reptiles and frogs) is diverse with about 62 species record, including about 20 species of frogs. There is also a rich though poorly recorded invertebrate fauna, including over 100 species of butterfly and moths (NSW NPWS 2002; DEH 2006b; Ku-ring-gai Council 2005).

There are 13 animals found in the place listed under the NSW Threatened Species and Conservation Act 1995. Regionally significant populations of several fauna species occur within the National Park including the spotted-tailed quoll (*Dasyurus maculatus*), the southern brown bandicoot (*Isodon obesulus obesulus*), the koala (*Phascolarctos cinereus*), and the eastern bent-wing bat (*Miniopterus schreibersii*) (NSW NPWS 2002).

Lion Island, at the entrance to Broken Bay, provides breeding habitat for several *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) listed Marine and Migratory bird species; including the wedge-tailed shearwater (*Puffinus pacificus*), the sooty shearwater (*Puffinus griseus*) and the little penguin (*Eudyptula minor*) (DEH 2006a). The breeding colony of little penguins on Lion Island has been the subject of long term research (Rogers et al 1995; Knight and Rogers 2004). Almost all breeding little penguins in the Sydney region are to be found on Lion Island, and long term studies have shown the reproductive success to be higher and more stable than populations at other locations.

The place is an important scientific and educational resource used by many universities and research institutions in the Sydney Region. Pollen and charcoal analysis from South Salvation Creek Swamp provide an indication of the change in species composition over the last 6,000 years and records from moist scrublands and swamps within the place indicate that they may be representative of a cycle of swamps built up, scoured and destroyed and reformed over thousands of years.

Extensive evidence of Aboriginal use and occupation occurs in the place, with over 800 sites or locations with physical evidence of Aboriginal use recorded (NSW NPWS 2002, NSW NPWS 2006b). Shell middens along the foreshore are the most common type of evidence recorded. Other evidence includes rock engravings and

paintings, grinding grooves, stone arrangements, burials and occupation sites. No systematic survey has been undertaken across the park, and it is likely that additional sites occur within the park.

The Great Mackerel rock shelter has been excavated within the park. Dates for the site range from $3,670 \pm 150$ to 220 ± 120 Before Present (McDonald 1992a). McDonald suggests that the art in this shelter was made from 600 years ago until just prior to contact. Attenbrow also states that temporal changes in the proportions of the dominant shellfish were documented at Great Mackerel Beach, near the estuary mouth, where radiocarbon determinations indicate the shell-bearing layer extends from about 560 to 220 years ago (Attenbrow 2002:68).

Rock art within the place has been investigated by McDonald (1994) as part of a broader analysis of rock art in Sydney Basin. Specific features of the Sydney Basin rock art include: pecked intaglio motifs, interpreted as being a 'residual Panaramittee' assemblage (predating the majority of art and occupation in the Sydney region); shelter art sites present in large numbers across the entire sandstone landscape, while engraving sites are more geographically confined, with a dense core of engraving sites in the central coastal area; and a small number of engravings found on vertical boulders in close proximity to major waterways. There are striking similarities in the motif preferences of both art forms, as well as several major differences (e.g. marine depictions in engravings but not in the shelter art). Stylistic differences in both engravings and paintings across the region may demonstrate the nature of contacts between language groups. There was generally less stylistic homogeneity in pigment art than engravings; however the Ku-ring-gai area was a sharp contrast, as it had a core and highly homogenous engraving assemblage while the pigment art was highly heterogenous. There is no evidence for a change in motif forms over time, with the exception of change from early to later style engravings.

The mainland areas of the park include wharves associated with recreational use as well as walking tracks, such as that built to Perry's Lookout on Pittwater, and roads. The two main roads are from North Turramurra to Bobbin Head (1901) and from Mount Colah railway station to the Bobbin Head road via a causeway (1903). There are also roads to Illawong and Apple Tree Bay.

The park was originally established under management by the Ku-ring-gai Chase Trust. Properties originally purchased or managed by the Trust include 'The Basin' on Pittwater (purchased 1915), 'Beechwood Cottage' (erected in 1882), 'Bobbin Inn' as well as jetties, boatsheds and a swimming enclosure.

A number of observation posts and other defence emplacements were constructed at West Head. Between 1924/1925, a small replica of the Great Sphinx was carved out of sandstone near Turramurra. The monument is flanked by two small pyramids inscribed in memory of AIF comrades who died during World War I.

Analysis:

Comparative analysis

Claims

The nominator claims that the Ku-ring-gai Chase National Park, Lion Island, Long Island and Spectacle Island Nature Reserves (the place) have national heritage values under criteria a. (Indigenous, historic), b. (Indigenous, natural), c. (Indigenous, historic, natural), d. (natural), e. (historic), g. (Indigenous) and i. (Indigenous). Criterion f. was considered during the assessment process but there was insufficient evidence that any values under this criterion were of outstanding significance. These claims are addressed below and considered in a national context using ANHAT analysis, expert opinion and available literature.

Criterion (a) - *The place has outstanding heritage value to the nation because of the place's importance in the course, or pattern of Australia's natural or cultural history.* The nominator claims that the place has a strong sense of cultural history for Australia, and that the areas rich Aboriginal heritage combined with its record of early European use, demonstrates its importance in the course of pattern of Australia's history. The nominator claims that Ku-ring-gai Chase National Park is the second oldest national park in Australia and the oldest national park established primarily for nature conservation, and that it contains important historic sites associated with early recreational use, transport, navigation and defence and has a history of colonial activity, including farming and as a convict haven.

Indigenous Values

There is evidence of Aboriginal occupation and use of the place dating from at least 7,400 years ago. The place contains over 800 Aboriginal sites, over 350 of which are well documented (NSW NPWS 2002, NSW NPWS 2006b).

The range of archaeological sites in the place appear typical of those found in coastal environments in the Sydney region and more broadly along the coast of New South Wales: for example at Mangrove Creek valley to the northwest of Ku-ring-gai Chase National Park; Port Jackson; Bass Point on the NSW South Coast; and the NSW Central Coast (Bonhomme and Buzer 1994, Smith et al. 1990, Attenbrow 2002).

Although the place was used by Aboriginal people, the use appears no more significant than that in other parts of the Sydney Basin, the NSW coast or nationally.

On this basis it is concluded the place does not have outstanding Indigenous heritage value under criterion (a).

Historic Values

The establishment of Royal National Park in 1879 as Australia's first national park is considered to be a defining event because it marked the beginning of a new form of protected area in Australia and the beginning of an extensive nationwide system of national parks.

The nominator's claim that Ku-ring-gai Chase is Australia's second national park is not supported as Belair in South Australia was dedicated in 1891, three years before Ku-ring-gai Chase was established. Being the third national park or conservation reserve in Australia is not considered to be of outstanding value to the nation.

The nominator also claims that it is the oldest national park established primarily for nature conservation. Both Royal National Park and Belair National Park were

reserved for public recreation. On the available evidence, Ku-ring-gai Chase appears to be the earliest remaining reserve established primarily for nature conservation, albeit in the narrow sense of protection of native vegetation. In later periods, the management of Royal National Park changed to incorporate a greater emphasis on nature conservation (Goldstein 1976 pp 162-170, Mosley, 1999; Bean 2002). While the establishment of the first reserve for the protection of native vegetation and hence for nature conservation is considered significant, there is insufficient information available to suggest that the establishment of Ku-ring-gai was causal in establishing other reserves primarily for nature conservation. In the context of ground breaking events related to the environment and conservation movement throughout Australia and over time, the establishment of Ku-ring-gai Chase is not considered to be of outstanding value to the nation. The establishment of Royal National Park is considered to be of greater significance.

In relation to the nominator's claims that the place contains important historical sites, it is noted that there are many areas around Sydney which display sites associated with early colonial farming and convict activity. There is also evidence of early recreational use in both the Blue Mountains dating from the 1880s (MUSECAPE Pty Ltd and D. Beaver (1999) and in Royal National Park. Public works undertaken in the 1920s and 1930s were a common phenomenon across Australia and the range and nature of these works is difficult to quantify. Nevertheless, similar works at North Head, Manly, demonstrate the common nature of such works in the Sydney region (National Heritage listing AHDB No 105759). The Barrenjoey Lighthouse and the associated cottages at Barrenjoey Head are entered in the RNE (AHDB No 2940) and listed in a Local Environment Plan by Pittwater Local Government Area. However, this lighthouse complex was not identified in the Department's thematic study Australia's Transport and Communications and is one of a number of such lighthouses erected along Australia's coastal shipping routes. Information about coastal defences in the Sydney region has been well documented by the Sydney Harbour Federation Trust and by the NSW NPWS in reserves surrounding Port Jackson and the outer Sydney suburbs. The latter include North Head (NHL entry AHDB No 105759) and CHL listings for Middle Head and Georges Heights (CHL entry AHDB NO 105541). The North Head Area assessment for the National Heritage List concluded that the World War Two coastal defences in the Sydney region do not have National Heritage values based on the available evidence.

On this basis it is concluded the place does not have outstanding historic heritage value under criterion (a).

Natural Values

While the nominator makes no specific claims for Natural values against this criterion, there is evidence that the place has a high level of significance at the national level based on species richness and diversity.

Analyses using ANHAT of bird, mammal, frog, reptile, plant and invertebrate taxa at the national level reveal that the Sydney Basin is outstanding at a national scale for species richness and endemism for a wide range of taxa (DEH 2006b). Endemism within the Sydney basin is mostly regional rather than highly localised, as many species are restricted to the Hawkesbury sandstone area. Analyses show that the Sydney area (Sydney 1:100,000 map sheet) has consistently higher species richness

across taxonomic groups than other parts of the Sydney Basin (DEH 2006b) and that Ku-ring-gai Chase National Park, together with Royal National Park and Blue Mountains National Park, represents most of this regional biodiversity (DEH 2006b).

The place contains an outstanding concentration of biodiversity with 24 plant communities, over 1,000 native plant species and 100 species of moths and butterflies (Braby 2000, Thomas and Benson 1985, Benson and Howell 1994 and NSW NPWS 2002). Plant families that are particularly rich in the heaths and woodlands of the place are Epacridaceae (southern heaths), Mimosaceae (wattles and allies), Myrtaceae (eucalypts and myrtles) and Proteaceae (grevilleas and their relatives) (DEH 2006b). The place is also particularly important for perching birds (Passeriformes). Within the Passeriformes the following families, many characteristic of the Hawkesbury sandstone environment, are also regarded as nationally significant for species diversity and endemism in the Sydney region and are well represented in the place: Acanthizidae (scrubwrens, thornbills and allies), Meliphagidae (honeyeaters and Australian chats), Petroicidae (Australasian robins) and Dicrodidae (fantails, drongos and monarchs) (DEH 2006b). Although some of the apparent species richness can be attributed to survey bias (the place has been well surveyed because of its location surrounded by Australia's largest city), the place is recognised as a centre of biodiversity when compared to other temperate areas across Australia and is second only to Royal National Park in coastal temperate eastern Australia for diversity of perching birds (Passeriformes) (NSW NPWS 2006a; DEH 2006b).

On this basis it is concluded the place has outstanding natural heritage value under criterion (a).

Criterion (b) - The place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.

The nominator claims that the 800 Aboriginal sites present in the place contain evidence of the traditional way of life of the local Aboriginal people, and that as little was recorded by early Europeans about the local Aboriginal people the relics present in the area are extremely rare. The nominator also claims that the place acts as a refuge for wildlife from the city, is a remnant of the natural environment of Sydney, contains several rare and uncommon flora and fauna species as well as ecological communities.

Indigenous Values

There is evidence of Aboriginal occupation and use of the place dating from at least 7,400 years ago. Of the over 800 Aboriginal sites recorded from the place over 350 have been well documented with the majority located on Lambert Peninsula (NSW NPWS 2002, NSW NPWS 2006b, pers comm Chris McIntosh 2006).

The range of archaeological sites in the place appear typical of those found in coastal environments in the Sydney region and more broadly along the coast of New South Wales: for example at places such as Mangrove Creek valley to the northwest of Ku-ring-gai Chase National Park; Port Jackson; Bass Point on the NSW South Coast; and the NSW Central Coast (Bonhomme and Buzer 1994, Smith et al. 1990, Attenbrow 2002). The place is not outstanding at a regional or national scale.

On this basis it is concluded the place does not have outstanding Indigenous heritage value under criterion (b).

Natural Values

An analysis revealed that the Sydney area (Sydney 1:100,000 map sheet) contains 27 EPBC Act listed threatened species (DEH 2006a), many of which have also been recorded from other conservation reserves in the Sydney Basin. Of the 27 EPBC listed species located within the Sydney area, about 23 (6 species of animals, 17 species of plants) have been recorded within the place (DEH 2006a, Benson and Howell 1994, NSW NPWS Atlas 2006a, NSW NPWS 2002). No EPBC listed ecological communities occur in the place. Further analysis revealed that there are over two hundred other places in Australia with twenty or more EPBC species and that the place could not be considered outstanding in this respect (DEH 2006b). While the place is important for the conservation of the species present it is not considered outstanding at a national scale.

On this basis it is concluded the place does not have outstanding natural heritage value under criterion (b).

Criterion (c) - The place has outstanding heritage value to the nation because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history.

The nominator claims that the place contains extensive evidence of the Guringai people's way of life and is an important place for the education of their children. The nominator claims that the place contains important historic sites associated with early recreational use of the park, and with transport, navigation, and defence. The nominator claims that the place has scientific significance as it is an example of the natural environment of the Sydney region prior to European occupation.

Indigenous Values

There is evidence of Aboriginal occupation and use of the place dating from at least 7,400 years ago. The place contains over 800 Aboriginal sites, 350 of which are well documented (NSW NPWS 2002, NSW NPWS 2006b), which local Aboriginal people value as part of their heritage.

The range of archaeological sites in the place appear typical of those found in coastal environments in the Sydney region and more broadly along the coast of New South Wales: for example at Mangrove Creek valley to the northwest of Ku-ring-gai Chase National Park, Port Jackson, Bass Point on the NSW South Coast, and the NSW Central Coast (Bonhomme and Buzer 1994, Smith et al. 1990, Attenbrow 2002).

While the place is of significance to the Aboriginal people of the Sydney region in providing a cultural and spiritual connection to the past and in providing a place for the education of younger generations, there is no evidence that it is of outstanding national significance. Other areas within the Sydney Basin are considered to have a comparable regional importance (eg. Royal National Park, Blue Mountains), and other areas within Australia are considered to have a comparable or greater national importance (eg. Kimberley and Kakadu). Although the place was used by Aboriginal people, the use appears no more significant than that in other parts of the Sydney Basin, the NSW coast or nationally.

On this basis it is concluded the place does not have outstanding Indigenous heritage value under criterion (c).

Historic Values

These values are more appropriately assessed under criterion (a) so have been addressed there.

Natural Values

Within the Sydney Basin there are extensive areas of natural vegetations in excellent condition with similar characteristics to those in the place including Royal National Park, Blue Mountains National Park and Wollemi National Park.

No evidence could be found in published literature that suggested that the place was more outstanding than these other areas either at a regional or national scale as a bench-mark for the nature of pre-European vegetation communities nor that the place has more significantly influenced the understanding of the natural environment of Australia than any other natural environment in Australia. By reason of its proximity to Sydney, the place has been subject to great research effort, however Ku-ring-gai has this attribute in common with a number of similar natural areas close to research institutions including the Watagan forests near Newcastle, Royal National Park in Sydney, the forests of the Darling Scarp near Perth, the Otway Ranges near Melbourne and Black Mountain in the ACT. In context, it is difficult to establish any of these localities as nationally significant.

On this basis it is concluded the place does not have outstanding natural heritage value under criterion (c).

Criterion (d) - The place has outstanding heritage value to the nation because of the place's importance in demonstrating the principle characteristics of a class of Australia's natural or cultural environments.

The nominator made no specific claims for Indigenous values against this criterion but as there are values present they have been assessed. The nominator claimed that the place has outstanding natural heritage value because it acts as a refuge for wildlife from the city and is a large, relatively intact remnant of the natural environment of Sydney.

Indigenous Values

There are a number of regions in Australia where engraving and pigment art are contemporary, or partially contemporary, components of a single art assemblage. They include: the Sydney Basin (McDonald 1994); the Laura region (Cole *et al* 1995); the Chillagoe region (David and David 1988); Wardaman country (David *et al* 1999); the Koolburra Plateau (Flood 1987); and the Victoria River District (McNickle 1991). Each of these regions displays different patterning in terms of the proportion of pigment art to engraved art, the specific techniques used (e.g. painting, drawing, pecking, pounding, incising), colour, the range and number of motif types (at a site and regional level) and stylistic changes over time.

The place lies within the Sydney Basin rock art region which is defined by the extent of the Hawkesbury sandstone (McDonald, 1994). The art comprises both rock

engraving and pigment art sites. While the engravings and pigment art show some stylistic differences due to the different techniques used, McDonald (1994) found that they represented different manifestations of the same art tradition.

Although the place contains some of the key characteristics of the Sydney Basin rock art assemblage, such as large and extensive engraving sites, examples of vertical engravings along the Hawkesbury River and the earlier residual-Panaramittee style engravings, it contains proportionally fewer rock shelters with pigment art. Better examples of these are located to the north-west of the place, in the Mangrove Creek catchment and Mt Yengo area.

The place does not exemplify the range and diversity of engraving and pigment art sites of the regional rock art style in the Sydney Basin.

On this basis it is concluded the place does not have outstanding Indigenous heritage value under criterion (d).

Natural Values

Within the Sydney Basin there are extensive areas of natural vegetation in excellent condition with similar characteristics to those in the place including Wollemi National Park, Blue Mountains National Park, Berowra Valley Regional Park, Bouddi National Park and Brisbane Water National Park (Benson & Howell 1994, DEH 2006b). Some of these areas, including Wollemi National Park, cover enormous areas of natural vegetation and are much larger than the Ku-ring-gai Chase National Park.

No evidence could be found in the published literature that suggested that the place was more outstanding as an example of a large natural area or wildlife reserve than these other areas, either at a regional or national scale.

On this basis it is concluded the place does not have outstanding natural heritage value under criterion (d).

Criterion (e) - The place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.

The nominator claimed that the place has outstanding aesthetic values as a result of the views of waterways, bushland and parts of Sydney.

Historic Values

A methodology to establish a threshold for aesthetic values has been developed in the Department's thematic study *Inspirational Landscapes* (Crocker and Davies 2005). Against the indicators in this methodology, the place is not considered a powerful or uncommon landscape nor has it defined images which have shaped national perceptions. The Hawkesbury River and its islands do have some aesthetic values which stem from the dramatic environment created by the drowned river system and sandstone ridges extending into the coastal areas of Pittwater, Barrenjoey Head and the Chase. The landscape of the place (urban features and bushland intersected by steep sandstone bluffs and other features) is characteristic of landscapes throughout the Sydney basin, notably around the metropolitan area. This landscape is particularly well developed in the cliff lines of Sydney Harbour, notably around the Heads, and is

more famously associated with the deeply incised plateau of the Blue Mountains. Similar landscape features occur along other major rivers in the basin used for recreational purposes, notably Lane Cove and the Nepean River, and the nominated area cannot be considered of unusual significance in this respect. Contemplative views into and out of the place and across the Hawkesbury River and its islands form part of a large number of such views in the Sydney region and in other coastal areas of Australia.

While the place is significant for the Sydney community, there is no evidence that it is of outstanding significance at the national level. On this basis it is concluded the place does not have outstanding historic heritage value under criterion (e).

Criterion (g) - The place has outstanding heritage value to the nation because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

The nominator claimed that the place has outstanding Indigenous values under this criterion because of the pre-European use by the local Aboriginal people, because of the cultural and spiritual connection to the past for Aboriginal people living in Sydney today, and for its significance to Aboriginal people for the education of their children. These values are more appropriately assessed under criterion (i) so have been addressed there.

Criterion (h) - the place has outstanding heritage value to the nation because of the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history

The nominator made no specific claims for Historic values against this criterion, but the prominent role played by Frederick Eccleston du Faur in the conservation of the place is noted in the nomination and as there are values present they have been assessed.

Historic Values

Eccleston Frederic Du Faur was the key, private individual involved in the establishment of Ku-ring-gai Chase National Park in 1894 (discussed in detail under criterion (a)). Inspired by Yosemite State Park in the USA, Du Faur had initiated earlier unsuccessful attempts to see a similar park established in the Grose Valley. This succeeded in raising awareness of the aesthetic and conservation potential of the Blue Mountains. Du Faur's conservation and scientific activities were recognised through his election as a Fellow of the Royal Geographical Society of London in 1875.

Du Faur's contribution to conservation is not as nationally well-known nor as significant as many other prominent conservation figures in the nineteenth and twentieth century such as Henry Kendall and Bob Brown. Given he is most closely associated with the Art Gallery of NSW, it is also argued that the closest association with his life and works is with the Art Gallery rather than Ku-ring-gai.

On this basis it is concluded the place does not have outstanding historic heritage value under criterion (h).

Criterion (i) - The place has outstanding heritage value to the nation because of the

place's importance as part of Indigenous traditions.

The nominator claimed that the place has outstanding values as evidence of the traditional way of life of the original inhabitants, because of the cultural and spiritual connection to the past for Aboriginal people living in Sydney today, and for the education of their children.

Indigenous Values

While the place is of great significance to the Aboriginal people of the Sydney region in providing a cultural and spiritual connection to the past and in providing a place for the education of younger generations, there is no evidence that it is of outstanding national significance. Other areas within the Sydney Basin are considered to have a comparable regional importance (eg. Royal National Park, Blue Mountains), and other areas within Australia are considered to have a comparable or greater national importance (eg. Kimberley and Kakadu).

On this basis it is concluded the place does not have outstanding Indigenous heritage value under criterion (i).

History:

Early historical evidence indicates Ku-ring-gai Chase National Park, Lion Island, Long Island and Spectacle Island Nature Reserves fell within the boundaries of two local clans - the Garrigal people, who occupied an area around Broken Bay and the Terramerragal, who occupied an area around the Turrumurra area (NSW NPWS 2002, Attenbrow 2002). It is understood that these clans belonged to the Guringgai language group. Evidence for the past activities of these people is found at a number of sites in the park. They including shell middens, rock shelters, artefact scatters, grinding grooves, stone arrangements, burials, rock engravings, rock paintings and hand stencils (NSW NPWS 2002)

Within six weeks of his arrival at Port Jackson in 1788, Governor Arthur Phillip explored Brisbane Water and Cowan Creek. He commented on the friendliness of Aboriginal people in each of the bays and inlets who came out in their canoes to greet him (NSW NPWS 1996). In August 1788, Phillip and his party travelled overland to Pittwater and back, walking along Aboriginal tracks and exploring the southern shores of Pittwater and around McCarrs Creek.

Governor Phillip and others described Aboriginal engravings at Broken Bay (Attenbrow 2002). These observers do not mention painted images and they provide no information about the role of the art in Aboriginal society. In 1789, during a second exploratory trip of Broken Bay by Phillip, the Aboriginal people were less welcoming. There was also clear evidence of Aboriginal deaths from smallpox, with skeletons and bodies in rock hollows along the harbour (Attenbrow 2002).

During subsequent conflict between Aboriginal people and white settlers in the upper reaches of the Hawkesbury, many Aboriginal people were displaced and moved to Pittwater. Skirmishes were also recorded in the Pittwater area during 1805. While many Aboriginal people had moved away by the 1840s, a few Aboriginal people were reported as still living in the western foreshores of Pittwater and in Ku-ring-gai Chase

in 1900 (NSW NPWS 1996).

In the early days of the colony the Ku-ring-gai area was used mainly for timber extraction and boat building. Soda ash, salt and shell lime were also collected and manufactured in the area. A navigation light on Barrenjoey Head (1855) was replaced in 1868 by the Stewart Towers and in 1881 by the present lighthouse designed by Colonial Architect James Barnet. A customs house also operated at Barrenjoey Head from 1843 to 1904. In the late 1870s, construction began on the railway to the Hawkesbury River. By the 1880s a number of boatsheds were in place and the Hawkesbury Railway Bridge (1886-1889) was completed (NSW NPWS 2002).

From the 1880s, there was concern about the loss of native vegetation and the degradation of bushland in and around Sydney. Eccleston Frederic Du Faur successfully lobbied the NSW Government to establish a park near Turramurra to protect native flowers from a rapidly expanding neighbourhood. The conservation area “Ku-ring-gai Chase” was established in 1894 covering 13,500 hectares and administered by the Ku-ring-gai Chase Trust with Du Faur as managing trustee from 1894 until his death in 1915 (Australian Dictionary of Biography 1972, NSW NPWS 2002).

Du Faur was an influential figure in colonial society being a government surveyor, the founder of the Art Gallery of NSW as well as the founder of Ku-ring-gai Chase conservation area. In the 1870s he conducted artists’ camps in the Blue Mountains promoting natural values, parts of which were already set aside for forest reserves and as water catchment areas.

The Pittwater area was closely associated with the writing of the Australian Constitution. In March 1891, the Drafting Committee (including Samuel Griffith, Edmund Barton, Charles Kingston and John Downer) revised the draft Constitution on board the paddlesteamer *Lucinda* when it anchored in The Basin. Although this 1891 draft was not implemented, it later served as the starting point for the Convention of 1897-98 (Deane 2000, Pittwater Council 2002).

In 1967, following 73 years of management by the Ku-ring-gai Chase Trust, the Chase was declared a national park under the NPWS Act 1967. Spectacle Island was dedicated as a reserve for public recreation in 1919 and as a nature reserve in 1972. In 1891 Long Island was reserved for public recreation and in 1972 became a nature reserve except for railway uses. Lion Island, dedicated as a fauna reserve in 1956, was also dedicated as a nature reserve under the NPWS Act 1967.

Condition:

Although large areas within Ku-ring-gai Chase National Park, Lion Island, Long Island and Spectacle Island Nature Reserves are in natural or near natural condition, the popularity of the park along with its location within an urban-fringe environment means that the conservation of the area requires considerable and ongoing management of weeds and pests, fire risk as well as other impacts caused by recreational activities.

The sections of the place where introduced plants cause the greatest problem are

along watercourses, in areas adjacent to urban development, in areas of past habitation and in some areas of high public usage (NSW NPWS 2002). Two hundred and thirty-six exotic plant species have been recorded within the park (Thomas and Benson 1985). A number of introduced animals have been recorded within the park with foxes (*Vulpes vulpes*) considered to cause the greatest impact (NSW NPWS 2002).

Over the past fifty years, most of Ku-ring-gai Chase National Park has been subject to a fire frequency of ten to fifteen years, particularly on the ridges and upper slopes. During this period the park has had on average ten small fires a year with extensive fires (over 500 hectares) occurring approximately twice a decade. A fire in January 1994 burnt almost half the park and it is estimated that only about 1% of the park contained vegetation that was more than twenty-one years old (NSW NPWS 2002 and Conroy 1996). A Fire Management Plan is currently in place for the National Park (NSW NPWS 2005).

The place also plays an important role in providing protection for a proportion of the lower Hawkesbury catchment area. Urban development surrounding the park has resulted in accelerated siltation and pollution of watercourses within the park which has led to increased weed growth. Recreational use of the waterways has also led to deteriorating water quality. The deterioration of the park's waterways has been recognised by the NSW NPWS as having a significant impact on native plants and animals (NSW NPWS 2002).

NSW NPWS plans to negotiate with the State Rail Authority to establish a conservation agreement over the part of Long Island managed by that Authority (NSW NPWS 2002).

Condition assessed 2006.

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