The Stony Rises

Location

PIRRON YALLOCK VIC 3249 - Property No L10273

Municipality

COLAC OTWAY SHIRE

Level of significance

State

Heritage Listing

National Trust

Statement of Significance

Last updated on - May 10, 2005

The Stony Rises are significant for scientific, historic and aesthetic reasons at a National level

The Stony Rises are an area of rocky ground formed on geologically recent lava flows around Mount Porndon, extending north to form the southern and southwestern shoreline of Lake Corangamite. The mount and associated smaller cones, which are located near the centre of the site, are believed to have been the major source of the lava.

The Stony Rises contain important remnant vegetation and fauna, as the difficulty of farming the rocky terrain has allowed the survival of vegetation communities which have been cleared from the more easily cultivated soils found elsewhere in the Western District.

The landscape of the Stony Rises, with open and varied woodland on an intricate network of high, narrow, rocky ridges enclosing tiny swamps and lakes, is visually appealing, with small scale diversity reflecting the biodiversity and rich cultural history of the area.

The Floating Islands are of particular significance, being the only floating peat islands known in Australia.

The Stony Rises are geologically and geomorphologically significant for the range and freshness of the volcanic features and its unique and varied topography related to different types of volcanic activity. The unusual and dramatic landforms have developed on young lava flows from a group of volcanic vents, some marked by simple cones, others with central craters; Mount Porndon (278m) is the most prominent. While rocky terrain on recent lava flows is found in other parts of the state, the landscape here is unique in the range of geological features and the scale and complexity of the surface relief and rock exposures.

The vegetation communities present on those parts of the Stony Rises that have not been cleared are classed as endangered and include most of the original native vegetation which survives in the Western District. The Floating Islands Reserve protects a small lake where, when water levels are high, several thick mats of vegetation, including small trees, can occasionally be set in motion by wind to move across the surface of the lake. These are the only peat-based floating islands in Australia and among few known in the world.

The Stony Rises contain a number of cultural features which reflect their history from first settlement in the 1840s. Particularly distinctive are the dry stone walls, built by the early settlers from local volcanic boulders to delimit field and property boundaries: these have been described as "the most technically accomplished and aesthetically pleasing in Victoria". A few early stone buildings have survived, although in other cases only the foundations are visible.

The appearance of the Stony Rises landscape is striking and unusual in the scale of the topography, with the pyramidal peak of Mount Porndon at the centre offering a clear view across the surrounding terrain, where the rocky, wooded lava flows interdigitate to enclose tiny lakes and wetlands.

Classified 19/06/2004

Hermes Number 71357

Property Number

Physical Description 1

Geology

The Stony Rises were formed by blocky lava flows from vents in the Mount Porndon volcanic complex (Plate 1) over a period from about 300,000 to 30,000 years ago (see Appendix 2A for a detailed account of the geology of the site). In places the lava has formed a series of low lobes extending onto the surrounding plain (Plate 2) and, in the north, as promontories into the eastern side of Lake Corangamite (Plate 3). In other places a more intricate topography has developed, featuring narrow interlocking rocky ridges, built from blocks of lava, with crests ten to fifteen metres above adjoining hollows (Plate 4), some of which contain lakes or swamps (Plate 5). Ollier (1969, Volcanoes, p. 60) suggested that the lobate topography was the result of narrow coalescing lava flows emerging from the base of a lava sheet, while the steeper terrain was due to the collapse of the roof of underlying lava tunnels and blisters when the underlying still-liquid lava drained away.

The central group of cones and craters, dominated by Mount Porndon was built up from scoria and ash deposits, together with some basalt including bombs of lava with cores of greenish olivine crystals, emitted during the final stages of volcanic activity in the area, some 30,000 years BP (see Appendix 2A). They are perched on a lava disk some 3km in diameter, the largest of its kind in Australia, formed from a late stage highly viscous lava flow (Rosengren, N. 1994. Eruption Points of the Newer Volcanics Province of Victoria: an Inventory and Evaluation of Scientific Significance, p. 228). Around the outer edge of the disk is a pronounced and almost continuous ring barrier up to 20 metres high, made up of large basalt boulders (Plate 6). This feature is attributed to withdrawal or shrinkage of the lava as volcanic activity diminished, leaving a perched rim of cooled material (see Appendix 2A). There are several small domed features closer to Lake Corangamite which are thought to be the remnants of adventitious cones (See Glossary, Appendix 4).

Two lava caves, formed when still-liquid lava flowed out from beneath a solidified crust, are located on the Stony Rises outside the ring barrier to the west of Mount Porndon. They are described in detail in a report to the Department of Conservation, Forests and Lands (1986) by Adrian Davey and Sue White, and listed by the Australian Speleological Federation as Caves 3H-6 and 3H-7. The larger of the two, Porndon Arch Cave, is a straight cave with a length of 104.0 m, and a maximum height of 10.0m. It is described as a damp cave, with a prominent side bench formed when the last of the lava flowed out. The second cave, Porndon Rubbish Cave is

only 64.0 m long with a convex floor and rock falls: it is partly infilled with rubbish.

The Porndon basalts are characterised by a large number of basalt bombs, often with cores of lherzolite, or greenish olivine crystals. Most of the basalt is highly vesicular, containing hollows formed by air in the material as it cooled. Closer to Lake Corangamite some is glassy in texture, indicative of rapid cooling on entering a water environment.

Vegetation

In 1964 Jim Willis, the Government Botanist, wrote of the area that "excepting damage by occasional fires and the depredations of rabbits, the basaltic barriers probably remain in much the same condition as they were before discovery by white men"(Willis, J.H., 1964. Vegetation of the basalt plains in Western Victoria. Proc. Roy. Soc. Vict. 77: 397-418). Willis compiled a comprehensive flora list for the area in the 1960s, and this is held in the Melbourne Herbarium (Willis, J.H., 1983. Plant life of the Western Plains, pp. 27-37 in The Western Plains, a Natural and Social History, edited by D.Conley and C.Dennis).

The importance of the Stony Rises for remnant vegetation was recognised again in the draft Corangamite Native Vegetation Plan (Corangamite Catchment Management Authority, 2003, p.34). This describes the vegetation of the Stony Rises, which includes plains grassland, shallow freshwater marsh and scoria cone woodland, as a priority Endangered Vegetation Class (EVC) for protection in an area (the Victorian Volcanic Plain) where only 3.6% of the native vegetation remains, and 98.8% of that is threatened.

Vegetation on the ridges of the Stony Rises is dominated by Manna Gum (Eucalyptus.viminalis), reflecting the good drainage through the stony soils (Plate 7). Bracken (Pteridium esculentum)is the most common understorey species, with blackwood (Acacia melanxylon), Cherry Ballart (Exocarpus cupressiformis) and Prickly Moses (Acacia verticillata) soils. Wetter area feature patches of Swamp Gum (E.ovata) with Prickly Tea Tree (Leptospermum juniperinum) in the understorey. (Plate 8) (National Estate Register citation for Floating Islands Reserve DB No.003779, 1991). Moist hollows between rocks provide habitat for shade-loving herbs, small ferns and bryophytes (Willis, 1964, op.cit). On saline flats around Lake Corangamite halophytic species such as Samphire (Halosarcia pergranulata) are dominant (Plate 9).

The Floating Islands Reserve is of particular biological interest (Shepherd, T. 1983, Draft Management Plan for the Floating Islands Lagoon Nature Reserve). It protects a small lake where, when water levels are high, several thick mats of vegetation, including small trees, can occasionally be set in motion by wind to move across the surface of the lake. These are the only peat-based floating islands Australia and among few known in the world (Burns, F.L.,
Moresby, J.F. and Peterson, J.A. 1985 The floating islands of Pirron Yallock, Victoria. Aust. Limn. Soc. 10: 15-32).

Much of the land in the Stony Rises is privately owned, and the main protection for the vegetation lies in the Significant Vegetation Overlays imposed on remnant forest in both Corangamite and Colac Otway Shires, but a small area of natural vegetation is protected by the Department of Sustainability and Environment in the Bungador Flora Reserve, located in the centre of the Stony Rises, and inaccessible except across private land. The DSE has recently purchased another area of valuable remnant vegetation at the northern end of the Stony Rises, extending to the shore of Lake Corangamite (Plate 10). A few other areas have been protected by the owners through covenanting with the Trust for Nature.

Weeds are widespread in places, particularly around the southwest periphery of the Stony Rises, where blackberry infestation is widespread. The problem appears to have worsened following a reduction in the rabbit population in the 1990s due to the spread of the calcivirus into the area.

Fauna

Small numbers of kangaroos (predominantly the Eastern Grey Kangaroo, Macropus giganteus) and wallabies (Black-Tailed or SwampWallaby, Wallabia bicolor) found in the Stony Rises, and there is also an introduced population of koalas (Phascoartes cinereus) (National Estate Register citation for Floating Islands Reserve DB No.003779, 1991). Long-nosed Bandicoot (Perameles nasuta) and Swainson's Antechinus (Antechinus

swainsonii) are recorded from the Floating Islands Reserve (NER Citation, op cit), and are presumably found elsewhere in the Stony Rises. Crocker (Robin Crocker and Associates, Identification and Assessment of Aesthetic Values in the Western Forest Region Victoria, 1999, p.49) notes that Eastern Barred Bandicoots (Perameles gunnii) also occur in the area, with a population released in the Floating Islands Reserve in the 1990s (Steve McDougall, pers.com).

Some species once found in the area appear to have been lost. Bennett, in his study of mammals in remnant forests Seebeck (Seebeck, J. 1984, Mammals of the plains or, where have all the wombats gone? pp. 39-47 in The Western Plains, a Natural and Social History, edited by D.Conley and C.Dennis) cites a report of Eastern Quoll (Dasyurus viverrinus) in similar terrain at Dreeite, 20 km to the northeast, until the 1950s, and there have been suggestions that it could be reintroduced to Vaughan Island in Lake Corangamite, assuming foxes and feral cats could be controlled in an island context (Steve McDougall, pers. comm). Wombats, too, were reported to be common in the past but are no longer found in the area (Seebeck, op. cit)

McDougall, Appleby and Barlow (Management plans for remnants of native vegetation on public land in the Shire of Hampden 1983) claim over 60 species of bird recorded in Stony Rises. This includes ducks, herons, pelicans and ibis, which use the swamps and lakes for food and breeding sites, and tree-dwelling species such as cockatoos. An Environmental Significance Overlay has been placed over an area of semi-permanent water near Stoneyford by Colac Otway Shire: its purpose is to protect an ibis rookery and resting place for Magpie Geese (Anseranus semipalmata), but it remains unfenced and grazed by cattle (Plate 11).

Reptiles are abundant, often utilising the hollows between the boulders for shelter. Black, Brown and Tiger snakes have been recorded.

The caves at Mount Porndon are intermittently occupied by bats, probably as a transit resting place rather than a maternity site (Davey and White, 1986, op.cit) . The main species is Miniopteris schrebersii, the Common Bent-wing Bat, possibly a local sub-species (Sue White, pers.comm)

Intactness

Most geological features of the Stony Rises are intact, apart from the small quarry cut into the northeast foot slope of Mount Porndon, which is useful for educational purposes since it exposes a section through the underlying rock (Plate 28). The vegetation is badly weed-infested in most places, but to a non-specialist eye it preserves a piece of open woodland which is similar to that described by the early settlers, as reported by Willis (1964, op.cit) quoted above. It also provides a habitat for a range of indigenous fauna. Some of the early buildings have survived, and long sections of the stone walls remain in good condition or have been rebuilt as a result of an active conservation program.