

**Former Air Services Australia Site
Report by Botanist – Teresa James
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**Former Commonwealth site, the Northern Road, Cranebrook
Flora notes**

Teresa James August 2006

These notes are based on a brief visit to the former Commonwealth Australian Air Services site bounded by The Northern Road, Vincent Road and Cranebrook Road, Cranebrook (Penrith local government area). They also refer to a flora and fauna report prepared by Conacher Travers (May 2005).

The 181 ha site comprises a diverse low-lying natural area associated with Rickabys Creek and several tributaries. The clay soils belong to the Berkshire Park soil landscape and are derived from Tertiary alluvium. Several vegetation communities are present belonging to the Castlereagh Woodlands. The vegetation has been subject to past clearing, fire and general disturbances, however, there is no evidence of past agricultural activities or major earthworks. Intact forest and woodland occurs predominantly in areas adjoining the boundaries of the site, particularly in northern parts, with much of the remaining vegetation comprising similar woodland in various stages of regeneration.

Report findings

A report prepared by Conacher Travers (May 2005) identified the following threatened flora and fauna at the Site:

- Two endangered ecological communities – Cooks River/Castlereagh Ironbark Forest (CRCIF), Shale Gravel Transition Forest (SGTF)
- Important populations of seven threatened plant species – *Allocasuarina glaericola*, *Dillwynia tenuifolia*, *Micromyrtus minutiflora*, *Persoonia nutans*, *Acacia bynoeana*, *Pultenaea parviflora*, *Grevillea juniperina* subsp. *juniperina*
- Two threatened fauna species – Eastern Freetail-bat, Cumberland Plain Land Snail

The presence of EEC's and threatened species, watercourses associated with Rickaby's creek and significant fauna trees, are identified as ecological constraints to development. Nevertheless, an area of approx 60 ha or 33% of the site is identified for potential development.

My key findings

- Survey for threatened species has been comprehensive and the identification, distribution and densities provided for *Dillwynia tenuifolia*, *Micromyrtus*

minutiflora, *Persoonia nutans*, *Pultenaea parviflora* and *Grevillea juniperina* subsp. *juniperina* appears to be satisfactory. I agree that further targeted survey is required for *Allocasuarina glaericola* and *Acacia bynoeana*.

- Presence of Cooks River/Castlereagh Ironbark Forest (CRCIF) and Scribbly Gum Woodland (SGW) confirmed although extent of SGW appears to be over estimated in northern part of Site. No areas of Shale Gravel Transition Forest (SGTF) were inspected – no comment.
- The primary discrepancy between the report and my observations/review relates to the large areas not assigned to a specific vegetation community. Approximately 70% of the site is described in the Conacher Travers report as regenerating shrubland (community 5). It is my opinion that this belongs, at least in part, to a third EEC, Castlereagh Swamp Woodland (CSW). Vegetation at the site representative of this EEC is in various stages of regeneration and is of varying condition. Intergrading areas with Scribbly Gum Woodland are present. Community 3 (Parramatta Red Gum Woodland), community 8 *Melaleuca* Forest and some parts of community 2 (Scribbly Gum Woodland) adjacent to Rickaby's Creek in the north of the site and of community 6 (exotic grassland with scattered trees & shrubs) may also be CSW. The presence of CSW, a critically endangered community, will significantly increase the inherent conservation values of the site and ecological constraints to development.
- Woodland along Rickaby's Creek in the northern part of the Site is either CSWL and/or Alluvial Woodland – both are endangered ecological communities.
- The number of native species recorded from the site by Conacher Travers (179) although compiled over two years, is likely to be a significant underestimate considering the range of communities and habitats present. Further survey after good rains and during the summer months of December to March, is likely to result in the recording of many additional species. Much of the site experiences periodic wet conditions (standing water, small pools) that favour summer-flowering and ephemeral grass, sedge and herb species. Survey to-date will not have adequately sampled this component of the vegetation. These species are likely to include regionally significant species. *Several species not previously listed for the site were observed in brief inspection.
- A significant proportion of the site is below 45 m asl and comprises ephemeral wet areas associated with Rickaby's Creek i.e. is prone to flooding. Alteration of rivers & creeks is a key threatening process under the TSC Act. Any alteration to flows and flooding will adversely impact the vegetation over much of the site.

Case for Castlereagh Swamp Woodland

Vegetation within community 5 and possibly 8, and some parts of community 2, 3 and 6 is consistent with the Final Determination for Castlereagh Swamp Woodland as follows:

1. Assemblage of 29 “characteristic” species - 18 or 65% present in areas mapped as community 3, 5 and 6.
3. The structure of the community is woodland or may occur as remnant trees. Characteristic species are *Eucalyptus parramattensis* subsp. *parramattensis* and *Melaleuca decora*.
4. Understorey may be seasonally waterlogged. Evidence of waterlogging both close to and away from creek lines.
5. Recorded from the Penrith local government area.
6. Typically associated with poorly drained depressions and creek-lines on clay soils associated with Tertiary alluvium. Much of Site comprises a low-lying area associated with Rickaby’s Creek and tributaries. Soils are heavy clays to clayey sands belonging to the Berkshire Park soil landscape.
9. Understorey either grassy or herbaceous with annual and ephemeral species which respond to wet conditions. The shrub layer can be mid—dense to sparse depending on frequency and period since fire.
10. Adjacent Castlereagh Ironbark Forest, Scribbly Gum Woodland and Shale/Gravel Transition Forest towards the boundaries of the Site occur on better-drained soils derived from Tertiary alluvium. Castlereagh Swamp Woodland at the Site intergrades with adjacent Castlereagh communities e.g. Scribbly Gum Woodland and these intergrades are considered part of the CSWL community.

Castlereagh Swamp Woodland is mapped by NPWS (2002) along Rickaby’s Creek north of Cranebrook Road i.e. adjoining the Site. With ecological conditions similar north & south of Cranebrook Road (along the creek) the presence of CSWL within the Site is not unexpected.

*Tozer (2003) describes a more restricted (wetter) form of CSWL, however, definition under the TSC Act remains unaltered. If the more restricted form was adopted CSWL still occurs at the site but would be more confined to areas in closer proximity to Rickaby’s Creek.

Summary

The Site is a key biodiversity area for endangered Castlereagh Woodland communities and threatened flora and fauna species. Four endangered ecological communities are identified:

- Cooks River/Castlereagh Ironbark Forest
- Castlereagh Swamp Woodland
- Shale Gravel Transition Forest
- Alluvial Woodland (part of River-flat Eucalypt Forest)

The development proposal which is based on ecological constraint mapping by Conacher Travers (2005) is flawed because it fails to identify significant areas of Castlereagh Swamp Woodland and to a lesser extent Alluvial Woodland. Further survey and/or assessment are required to accurately determine the boundaries of these communities. It is likely that areas identified by Conacher Travers as having development potential (i.e. low constraints) contain endangered ecological communities, particularly CSWL.

Proposed re-zoning of the Site should be deferred until an independent ecological assessment is undertaken.