

## 12 PART 3A CONSIDERATIONS

### 12.1 Director-General's Requirements

A set of *Director-General's Environmental Assessment Requirements* (DGEARs) for the residential subdivision on the subject land at Mundamia was provided by the then Department of Planning (DoP Ref: 08\_0141; 10/09324).

The DGEARs were provided by the DP&I<sup>3</sup> (then the DoP) pursuant to Part 3A of the EP&A Act, and to identify *inter alia* that the *Environmental Assessment* for the proposal must include the consideration of a set of “*General Requirements*”, which include *inter alia*:

- “an outline of the scope of the project” - (Chapter 1.4; Figures 4 and 7);
- a “thorough site analysis, including constraints mapping and description of the existing environment”;
- “Consideration of the consistency of the project with the objects of the *Environmental Planning and Assessment Act 1979*”;
- “Consideration of impacts, if any, on matters of National Environmental Significance, under the *Environment Protection and Biodiversity Conservation Act 1999*”; and
- an “assessment of the potential impacts of the project and a draft *Statement of Commitments*, outlining environmental management, mitigation and monitoring measures to be implemented to minimise any potential impacts of the project”; and

The DGEARs also require an “assessment of the key issues specified” in the DGEARs (see Chapter 13).

These “general requirements” are addressed in the main *Environmental Assessment Report* for the proposal, and relevant material with respect to ecological matters contained in the “general requirements” is also provided in this *Report*. In addition, the “key issues” regarding ecological matters (contained in item 9 of the DGEARs) are addressed in detail in Chapter 13 of this *Report*.

Item 9 of the DGEARs requires *inter alia* an assessment of the proposal with respect to “flora and fauna”, and the preparation of a “*Flora and Fauna Assessment Report*” (see Chapter 13.1).

### 12.2 Scope of the Project

As discussed in Chapter 1.3 of this *Report*, and as detailed in the *Environmental Assessment Report* prepared by Cowman Stoddart (2012), the proposal at George Evans Road, Mundamia is for a residential estate occupying approximately 30.94ha (or 71.5% of the subject land).

The proposed development of the subject land will involve:

- development of approximately 71.5% of the land for residential and urban purposes, in accordance with the *Nowra-Bomaderry Structure Plan* (2008) and the draft *Shoalhaven Local Environmental Plan 2009* (SLEP 2009);

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<sup>3</sup> The DoP is now the Department of Planning & Infrastructure (DP&I).

- the dedication of approximately 9.49ha (or 21.9% of the land) for biodiversity conservation purposes and (in small part) for *Asset Protection Zones* (APZs); and
- the incorporation of an array of management regimes and stormwater management measures to avoid, minimise or control adverse impacts upon retained vegetation around the subject development site.

### 12.3 Site Analysis

This *Report* provides a “*thorough site analysis, including constraints mapping and description of the existing environment*”, both within the subject land itself and on surrounding lands.

In this regard:

- Chapters 3 (*Existing Environment*), 4 (*Flora and Vegetation*) and 5 (*Fauna and Fauna Habitats*) provide a detailed “*description of the existing environment*” with respect to ecological and riparian matters;
- Chapter 6 (*Environmental Constraints*), as well as the remainder of the *Report*, provide a thorough site analysis; and
- the potential and likely ecological constraints to development of the subject land are discussed in Chapters 6 - 11, and are identified in Figures 2, 5, 6 and 8, of this *Report*.

### 12.4 Objects of the EP&A Act

The relevant “*objects*” of the EP&A Act with respect to ecological issues are:

- “*the proper management, development and conservation of natural and artificial resources ... for the purpose of promoting the social and economic welfare of the community and a better environment*”;
- “*the promotion and co-ordination of the orderly and economic use and development of land*”;
- “*the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats*”; and
- the achievement of “*ecologically sustainable development*”.

Given those considerations, the proposed development on the subject land at George Evans Drive, Mundamia would satisfy the “*objects*” of the EP&A Act, particularly with respect to:

- the conservation of biodiversity in New South Wales;
- the protection and conservation of threatened biota and their habitats; and
- the achievement of “*ecologically sustainable development*” (ESD) outcomes.

The “*objects*” of the EP&A Act seek to achieve an appropriate balance between development opportunities (undertaken in an environmentally responsible manner) and biodiversity conservation aspirations. The intent of the EP&A Act, therefore, is to facilitate both development and conservation outcomes, rather than to guarantee one at the expense of the other.

The proposed residential development of the subject land at Mundamia has been designed in part to protect populations of, and habitat for, the Nowra Heath-myrtle, as well as to provide for the protection and long-term management of areas of habitat and resources for an array of other threatened biota. The stormwater management regime which has been designed for the project is intended *inter alia* to mimic existing soil moisture regimes in retained areas of habitat and vegetation, and to facilitate the survival of populations of species such as the Nowra Heath-myrtle.

The majority of the proposed development is contained within existing modified and degraded agricultural land. Further, the majority of suitable habitat and resources for threatened species, as well as for other more common native fauna and flora, is to be retained within the substantial *Conservation Area* on the subject land, as well as in extensive areas of vegetation adjacent to the property.

The proposed residential development at Mundamia will require the removal of only relatively small areas of modified or disturbed native vegetation (particularly along the eastern side of the development). These areas are, however, already somewhat modified and/or infested by weeds as a consequence of long-term agricultural practices on the subject land.

The proposed development of the subject land for residential purposes provides an appropriate balance between development opportunities and conservation goals, and provides for the “*effective integration of economic and environmental considerations*”. The combination of a re-design of the northern parts of the proposed development to protect greater numbers of and habitat for the Nowra Heath-myrtle (Figure 8), as well as the long-term management and maintenance of the retained conservation areas on the subject land (including implementation of the *Hollow-bearing Tree Protocol*) facilitate an appropriate and reasonable outcome on the subject land.

Thus, the proposed development of the subject site at Mundamia satisfies the relevant “*objects*” of the EP&A Act, including the achievement of ESD outcomes and satisfaction of the *Precautionary Principle*.

## **12.5 Environment Protection & Biodiversity Conservation Act**

The DGEARs require a “*consideration of impacts, if any, on Matters of National Environmental Significance, and the Environment Protection & Biodiversity Conservation Act 1999*”.

A full and detailed consideration of the relevant *Matters of National Environmental Significance* (MNES), pursuant to the *Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act) is contained in Chapter 16 of this *Report*.

It is the conclusion of this *Report* that the proposal is not “*likely*” to impose a “*significant impact*” upon any MNES.

The proposal, nevertheless, has been referred to the Commonwealth Department of Sustainability, Environment, Water, Population & Communities (SEWPaC). The Department has determined that the proposed development is not a “*Controlled Action*” pursuant to the EPBC Act, and that consequently no approval from the Federal Minister for the Environment is required (Chapter 16.3; Appendix G).

## 12.6 Impacts and Statement of Commitments

The DGEARs require *inter alia* an “assessment of the potential impacts of the project” (relevantly) on native biota and ecosystems, and riparian areas and habitats. The bulk of this *Report* (Chapters 6 to 17 inclusive) contains a detailed and thorough analysis of the potential impacts of the proposal at Mundamia on native biota and their habitats, and riparian areas and ecosystems, as well as consideration of impact amelioration and environmental management measures (in Chapter 18).

It is the conclusion of this *Report* that the proposed development is appropriate in the circumstances of the subject land, having regard both to ecological issues and constraints and to the requirements of appropriate and proper planning in the Shoalhaven LGA. In particular, it is the conclusion of this *Report* that:

- the development of the subject land as proposed is appropriate and reasonable having regard to the relevant issues to be taken into account pursuant to the DGEARs and the “objects” and assessment criteria of the EP&A Act; and
- the proposed development will not impose any significant adverse impacts upon native (including threatened) biota or their habitats at a local, state or federal level.

A comprehensive *Statement of Commitments* is provided in the *Environmental Assessment Report* prepared by Cowman Stoddart (2012). That *Statement of Commitments* includes, as appropriate, the impact amelioration and environmental management measures which are identified in Chapter 18 of this *Report*.

## 13 KEY ISSUES – FLORA & FAUNA

### 13.1 Key Issues

The DGEARs identify *inter alia* a series of “key issues” with respect to flora and fauna, and their associated habitats, that need to be addressed in the *Environmental Assessment* for the proposal (Table 8).

These issues are addressed in detail either (or both) below in ensuing parts of this Chapter of the *Report* and/or in other parts of the *Report* (as indicated in Table 8).

**Table 8** Key Issues identified in the DGEARs for the Culburra West urban development area – MP08-0141 in respect of ecological, biodiversity and habitat considerations

Item	Issue in DGEARs	Where Addressed
9.1	<ul style="list-style-type: none"><li>• Prepare a Flora and Fauna Assessment Report in accordance with the <i>Draft Guidelines for Threatened Species Assessment</i> (DEC, DPI, Jul 2005), <i>Threatened Biodiversity Survey and Assessment Guidelines Working Draft</i> (DEC, 2004), and the <i>Threatened Species Assessment Guidelines: The Assessment of Significance</i> (DECC Aug 2007).</li><li>• Address potential impacts of the development on the flora and fauna of the site and setting in the landscape, particularly impacts on any threatened species, populations, threatened ecological communities (EECs), and/or critical habitat, and any relevant recovery plan, with particular regard for relevant EECs or threatened species where known (bearing in mind DECC’s letter dated 30 September 2008, attached, particularly its comments in relation to Attachment A and the proposed development envelope).</li><li>• Surveys should target the <i>Triplarina nowraensis</i> and the assessment should demonstrate that the proposal will have minimal impact on that species.</li><li>• Provide measures for the conservation of flora and fauna, habitats and communities, where relevant, including the provision of adequate vegetated buffers, particularly on the eastern side bordering the Flat Rock Creek gully.</li></ul>	<ul style="list-style-type: none"><li>• The whole <i>Report</i></li><li>• Chapters 2 – 5, 14, 15 and 18</li><li>• The 2007 Guidelines are not relevant – see Chapters 13.2 and 14.3.2</li><li>• Chapters 6 – 16 regarding potential impacts on threatened biota and the natural environment</li><li>• Chapter 18 regarding impact amelioration</li><li>• Chapter 13.5 regarding the DECC 2008 letter</li><li>• Chapter 2 re surveys</li><li>• Chapters 8 – 11, 13, 14, 16 and 18 regarding impacts</li><li>• Chapters 7, 8, 10 13 and 18</li></ul>
9.2	<ul style="list-style-type: none"><li>• Address the potential bio-certification of the Draft Shoalhaven comprehensive LEP 2009.</li><li>• Any native vegetation proposed to be removed within the area identified by DECC’s submission dated 30 September 2008 (attached), needs to be offset in accordance with the principles of ‘maintain or improve environmental outcomes’ in DECC’s 2005 Draft Guidelines (above).</li></ul>	<ul style="list-style-type: none"><li>• No longer relevant (see Chapter 13.4)</li><li>• Chapter 13.5</li></ul>

Item	Issue in DGEARs	Where Addressed
9.3	<ul style="list-style-type: none"> <li>Resolve the provision of arterial road access for the proposal and any impacts on threatened species assessed using the 'avoid, mitigate or offset' framework in DECC's 2005 Draft Guidelines.</li> </ul>	<ul style="list-style-type: none"> <li>Not relevant (see Chapter 13.6)</li> </ul>
9.4	<ul style="list-style-type: none"> <li>Outline measures for the conservation of existing wildlife corridor values and/or connective importance of any vegetation on the subject land.</li> <li>Address the conservation and enhancement of the remnant line of trees running east-west across the property by the provision of a wildlife corridor from the creek to the forest.</li> <li>Investigate opportunities to conserve or enhance local and regional corridors and important habitats, such as creek lines, in the design of the proposal.</li> </ul>	<ul style="list-style-type: none"> <li>Chapter 13.7</li> <li>Chapter 13.7</li> <li>Chapters 13.7, 13.8 and 13.10</li> </ul>
9.5	<ul style="list-style-type: none"> <li>Describe all aquatic environments (watercourses, wetlands) located on or adjacent to the site, and their regional significance.</li> </ul>	<ul style="list-style-type: none"> <li>Chapters 3, 6, 7, 9 and 13.8</li> </ul>
9.6	<ul style="list-style-type: none"> <li>Predict impacts upon aquatic environments on or adjacent to the site (both temporary and permanent).</li> <li>Predict any temporary and permanent impacts upon water quality and aquatic threatened species, populations or ecological communities listed under the <i>Fisheries Management Act 1994</i> (NSW).</li> </ul>	<ul style="list-style-type: none"> <li>Chapters 7, 9 and 13.9</li> <li>Chapters 7, 9 and 13.9</li> </ul>
9.7	<ul style="list-style-type: none"> <li>Address measures and safeguards to protect adjacent aquatic habitats, including SEPP 14 wetlands and riparian habitats; and provide full details and widths of proposed riparian buffer zones for Flat Rock Creek.</li> </ul>	<ul style="list-style-type: none"> <li>Chapters 13.8, 13.10 and 18</li> </ul>

### 13.2 DEC Draft Guidelines

Item 9.1 of the DGEARs requires that a "*Flora and Fauna Report*" be prepared "*in accordance*" with *Guidelines* prepared by the DEC and the DECC.

This *Flora & Fauna Issues & Assessment Report* for the proposed development at Mundamia has been prepared in accordance with the DEC *Draft Guidelines for Threatened Species Survey* (dated 2004) and the DEC *Draft Guidelines for Assessment of Impacts on Threatened Species Under Part 3A* (dated 2005), as appropriate.

The DECC *Threatened Species Assessment Guidelines: The Assessment of Significance* (DECC Aug 2007) are not relevant to a project being assessed pursuant to Part 3A of the EP&A Act. Nevertheless, the relevant matters in Section 5A have been taken into account in addressing the potential for impacts to be imposed on threatened biota and their habitats (see Chapters 7 – 14).

A detailed consideration of the applicability or otherwise of the DEC/DECC *Guidelines* identified in Item 9.1 of the DGEARs is provided in Chapter 14 of this *Report*.

### 13.3 Threatened Biota

Item 9.1 of the DGEARs addresses further matters with regard to threatened species surveys, impact analysis and “*measures for the conservation of flora and fauna, habitats and communities, where relevant*”. With respect to these matters (as detailed in Table 8):

- dedicated surveys for and accurate mapping of the Nowra Heath-myrtle *Triplarina nowraensis*, as well as an array of other relevant or potentially relevant biota, have been undertaken for this *Report* (see Chapters 2, 4 and 5; Appendices A – F);
- the potential impacts of the proposal on threatened biota and their habitats has been considered throughout this *Report*, and the development has been re-designed at the behest of the principal author of this *Report* to reduce impacts on the Nowra Heath-myrtle and its habitat;
- suitable ‘buffers’ are provided to the north and east of the proposed development area to protect Flat Rock Creek and its environs (see below, Chapter 14 and Chapter 18); and
- the matters raised by the DECC (now OEH) in its correspondence of 2008 are addressed in Chapters 13.4 and 13.5 below.

### 13.4 Biocertification of the Draft Shoalhaven LEP 2009

Item 9.2 of the DGEARs requires that the “*potential bio-certification of the Draft Shoalhaven Comprehensive LEP 2009*” be considered.

It had been suggested that the *Nowra-Bomaderry Structure Plan* and any future associated LEP may be able to be ‘bio-certified’ pursuant to the *Threatened Species Conservation Act 1995* (TSC Act).

Attachment A of the DECC letter (dated the 30<sup>th</sup> of September 2008) shows a designated development area surrounded by a blue line. That correspondence states that “*if the development envelope is located within the blue line [on the attached plan] ... no further threatened species assessment is needed for this part of the proposal*”, subject to the resolution of several “*outstanding issues*”. Further consideration of the area identified in that correspondence is provided below (in Chapter 13.5).

It should be noted that ‘bio-certification’ for the subject land is not a relevant consideration with respect to Part 3A of the EP&A Act. However, that approach does provide an indication of the considerations of Council and the DECC/OEH in the zoning of the lands, and in determining the perceived development opportunities and constraints of the land.

Further, Council had determined not to proceed with biocertification of the Mundamia area or the *Nowra-Bomaderry Structure Plan*. However, the relevant ecological information, as contained in the *Flora & Fauna Assessment* of the Mundamia area (Area 5) for the *Nowra-Bomaderry Structure Plan* (BES 2004), has been incorporated into this *Report*.

### 13.5 DEC Submission Area

The DECC correspondence of the 30<sup>th</sup> of September 2008 (to the DoP) regarding this proposal addresses discussions and agreements with Shoalhaven City Council regarding ‘bio-certification’ of the LEP and areas identified by the then DECC as not requiring further threatened species assessment

(pursuant to the 'bio-certification' process). The correspondence provides a map of those areas, as well as of areas that the DECC considers "*should be conserved in perpetuity*", identified by the DECC as "*areas within the red line*" on the attached map (but presumably outside of the blue line).

As there is no 'bio-certification' process for the subject land or for the LEP, the underlying rationale for the DECC areas no longer exists. Further, the proposed subdivision design has been prepared in cognisance of the actual ecological values on the land, and following comprehensive surveys and investigations.

As noted elsewhere, the northern parts of the proposal have been re-designed at the behest of the principal author of this *Report* in order to reduce and minimise impacts on the Nowra Heath-myrtle. In addition, a substantial area of land is to be dedicated and managed primarily for biodiversity conservation purposes, in perpetuity.

Whilst the current design does not conform to the desires of the DECC/OEH (as represented in their 2008 correspondence), it is the position of this *Flora & Fauna Issues & Assessment Report* that the proposal represents an appropriate and reasonable balance between residential needs and opportunities on the one hand and biodiversity conservation goals on the other.

### **13.6 Arterial Road Access**

Item 9.3 addresses "*the provision of arterial road access for the proposal*".

The original concern of the DECC/OEH was in respect of a mooted "*arterial road access*" across Flat Rock Creek (or the Shoalhaven Gorge). No such access is now proposed, and there is already Council approval for the access road past the University campus to the south, from Yalwal Road.

There is no requirement for any further impact amelioration or offsets for the access road to the proposed subdivision.

### **13.7 Wildlife Corridor Values**

Item 9.4 of the DGEARs requires:

- the consideration of "*measures for the conservation of existing wildlife corridor values and/or connective importance of any vegetation on the subject land*";
- "*the remnant line of trees running east-west across the property*"; and
- "*opportunities to conserve or enhance local and regional corridors and important habitats*".

The proposed development will not impinge upon any relevant existing corridors within the subject land itself, or in the immediate vicinity (Figure 2).

In this regard, the subject land is located on the western fringe of a large urban area and the Flat Rock Creek Reserve, but is separated from the suburbs of Nowra by a deep vegetated valley containing Flat Rock Creek, which extends from the Shoalhaven River (in the north) to the Triplarina Nature Reserve (to the south of Yalwal Road). Lands to the north of the subject land are also largely forested, although with scattered dwellings.



Whilst there are also areas of native vegetation to the west and south of the subject land, these are fragmented and do not constitute relevant or effective habitat links (or so-called 'wildlife corridors'), other than through vegetated lands to the north or south of the subject land.

Further, the area proposed for development is predominantly cleared agricultural land, and the proposal will maintain bands of vegetated land along its northern and eastern sides, contiguous with adjoining vegetated lands.

The *Nowra-Bomaderry Structure Plan*, endorsed by both Shoalhaven City Council and the then DoP (Figure 11), had identified a 'wildlife corridor' to the west of the lands considered appropriate for development activities. No 'wildlife corridor' is identified in the *Structure Plan* within those areas proposed for residential development on the subject land, and no such 'wildlife corridor' is either present or likely to be affected.

The narrow band of trees running east-west across the middle of the subject land provides only marginal habitat, at best, and then only for highly mobile species. There are no hollow-bearing trees within this line of vegetation, and there are no other particularly relevant resources for native fauna (Appendix B).

The loss of this narrow disjunct band of trees will not impede the movement of any fauna within the local area. Substantial intact areas of vegetation are present immediately to the north and east of the subject land, as well as to the south, which will maintain the east-west connectivity in the local context. Highly mobile species (such as bats and birds) will still be able to move across the land, even after residential development.

Further, it would be totally inappropriate for a thin, ineffective and ecologically meaningless east-west 'wildlife corridor' to be provided at this location through the middle of any area. Even if retained, the narrow band of trees would provide little (or more likely no) benefit for any fauna.

The proposed development of the subject land will have no adverse impacts upon any local, regional or other real, or purported, "*wildlife corridors*" or vegetated linkages through the landscape. The most relevant vegetation on the subject land (in the eastern and northern parts of the land) is to be retained. These areas are contiguous with adjoining areas of native vegetation, and have the potential to contribute in a meaningful sense to the maintenance of "*wildlife corridors*" or vegetated linkages through the immediate landscape.

The proposed development will not adversely affect the protection and maintenance of any "*wildlife corridors*", or other vegetated linkages, through the general landscape or in the immediate vicinity.

### **13.8 Watercourses and Wetlands**

Item 9.5 of the DGEARs requires a description of "*all aquatic environments (watercourses, wetlands) located on or adjacent to the site, and their regional significance*".

The watercourses and wetlands on the subject land (limited as they are) are described in Chapters 3 – 5 of this *Report*.

The only "*wetlands*" in the area proposed for development purposes on the subject land are artificial farm dams, although there is an area of moist soils and apparently impeded drainage at the head of the

small watercourse located in the northeastern part of the land. There are a variety of wetlands along the Shoalhaven River and doubtless others along Flat Rock Creek, but these are at some considerable distance from the land, and will not be affected by the development as currently proposed.

The small watercourse in the northeastern part of the land (as noted above) does not flow continuously, and the upper parts of the watercourse support a band of Swamp Paperbark, as well as mesic groundcover species and part of a patch of the Nowra Heath-myrtle (Figure 5). Although possibly in part sustained by groundwater, this area of vegetation doubtless also depends on incipient rainfall and overland flows during and following high rainfall events.

The lower parts of this watercourse will be retained in the proposed *Conservation Area*, and the stormwater management regime devised by Storm Consulting (2012) is proposed to protect water quality within that drainage feature.

There are two small vegetated farm dams and a large 'sediment dam' on the subject land at Mundamia. Of these, the 'sediment dam' is of little or no environmental value, and the two small farm dams provide only extremely limited habitat or resources for native biota.

Whilst the proposed development of the subject land for residential purposes will require the removal of the three farm dams, those features are not regarded as of particular ecological or environmental value. There is no likelihood that any threatened biota would be present in or dependent on those features, and it is not considered likely that any significant adverse environmental impact will result from the removal of the farm dams.

Flat Rock Creek is the only notable local watercourse in the immediate vicinity of the proposed development which has the potential to be affected by activities associated with the proposed development. However, this watercourse is some considerable distance from the development area (140 – 300m), and will be protected by broad bands of intervening native vegetation. In addition, the stormwater management regime has been designed to mitigate any potential adverse impacts which could potentially or theoretically arise from the proposal.

The proposal will have no adverse impacts upon the Shoalhaven River or upon any habitats associated with that watercourse. Further, there are no SEPP 14 Wetlands in the vicinity of the subject land, and there is no likelihood of adverse impacts being imposed upon any SEPP 14 Wetlands in the locality.

### **13.9 Impacts on Aquatic Environments**

Item 9.6 of the DGEARs requires a prediction of the *"impacts upon aquatic environments on or adjacent to the site"* and *"upon water quality and aquatic threatened species, populations, ecological communities"*.

As discussed above, there are no *"aquatic environments"* on the subject land, other than three artificial farm dams.

The only *"aquatic environments"* of note in the vicinity are the Shoalhaven River and downstream parts of Flat Rock Creek, as well as the large dam in the upper part of the Flat Rock Creek (to the southeast of the subject land). The proposed development of the subject land will have no adverse impacts upon those *"aquatic environments"*.