



# Terrestrial Ecology

The Project would impact on terrestrial flora and fauna in a number of ways. This chapter identifies and describes relevant features of the existing environment likely to be affected. Anticipated impacts are assessed and practicable mitigation and management measures identified. Discussion is based on the terrestrial ecology assessment report which is provided as Working Paper E.

## 11.1 Introduction

The general aims of the terrestrial flora and fauna assessment are to describe the existing environment in relation to terrestrial flora and fauna, identify the potential impacts of elements of the Project on threatened species, populations or communities, and to identify practicable measures to manage or mitigate the identified impacts. This comprised the following general activities:

- a literature review
- field surveys and habitat assessments
- impact assessment under NSW and Commonwealth legislation.

## 11.2 Key features of the existing environment

The Project area is within the NSW North Coast Bioregion, one of the most diverse in NSW. The region supports a wide range of habitats including rainforest, moist forest, woodland, riparian vegetation and aquatic ecosystems. Disturbances such as vegetation clearing, habitat fragmentation, introduced species and fire have placed increasing pressure on the region's biodiversity.

The environment within and around the proposed inundation area consists predominantly of cleared agricultural land used for dairy and beef production. Native vegetation within the area is limited to a few remnant patches, scattered trees and riparian vegetation along the Williams River and its tributaries. Much of the remnant vegetation has been heavily grazed resulting in greatly reduced understorey with lantana infestations common. The most intact native vegetation is present in and around the Tillegra Reserve area.

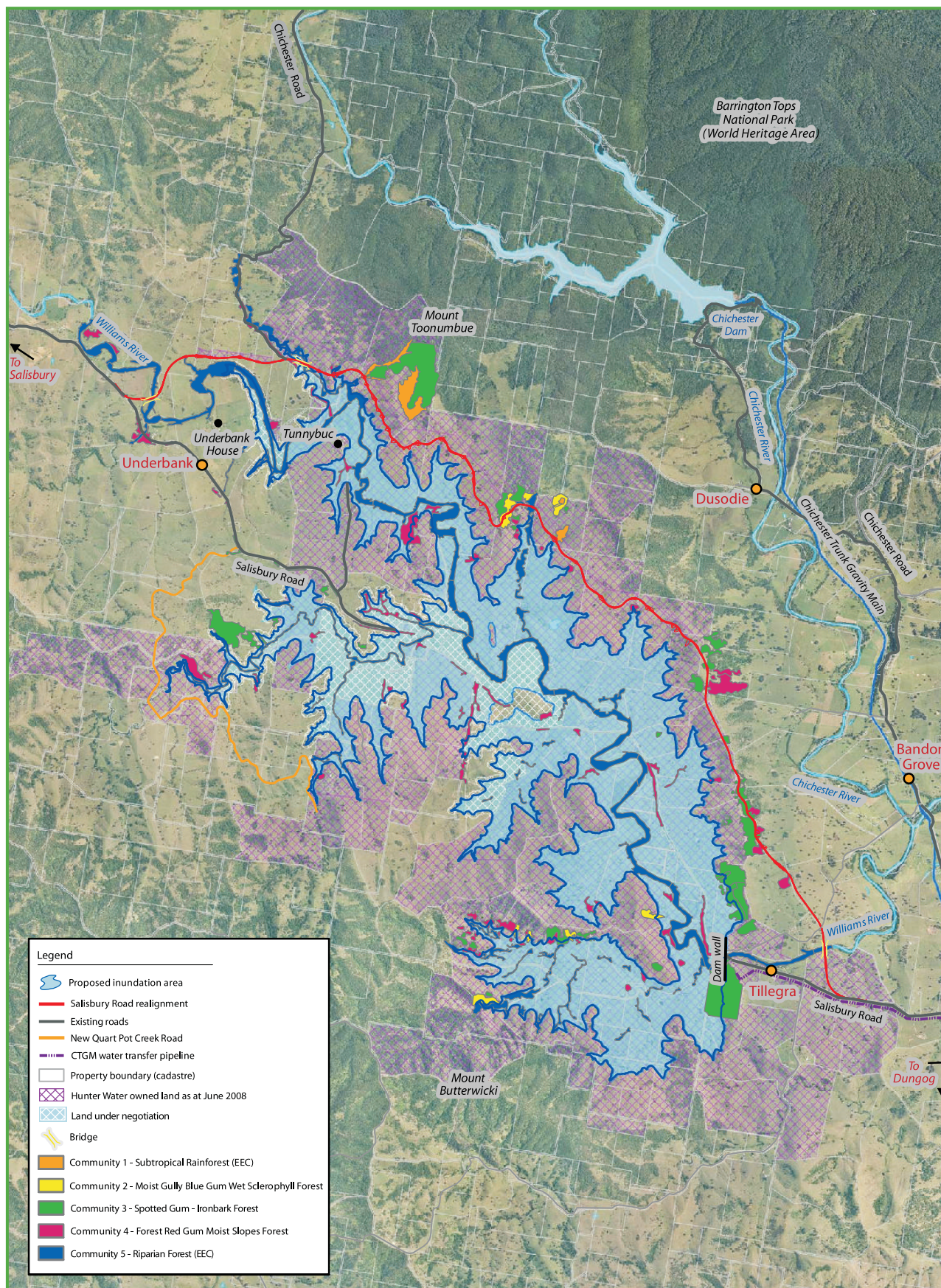


FIGURE 11.1 VEGETATION COMMUNITIES

### 11.2.1 Vegetation

A total of 315 flora species (including 78 exotic species) were identified during surveys of the Project area. No threatened flora species or populations listed under either the TSC Act or the EPBC Act were identified. A list of the flora species recorded from the Project area is included in Appendix 2 to Working Paper E.

In addition to cleared pasture, the the following natural communities also occur were identified in the Project area:

- Subtropical Rainforest
- Moist Gully Blue Gum Wet Sclerophyll Forest
- Spotted Gum–Ironbark Forest
- Forest Red Gum Moist Slopes Forest
- Riparian Forest.

The locations of these communities are illustrated in Figure 11.1.

The subtropical rainforest community was identified as an EEC (endangered ecological community) referred to as 'Lowland Rainforest in the North Coast and Sydney Basin Bioregion' as generally described and declared by the NSW Scientific Committee on 22 December 2006.

The Riparian Forest community was also identified as referred to as 'River-flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions' as generally described and declared by the NSW Scientific Committee's final determination on 17 December 2004.

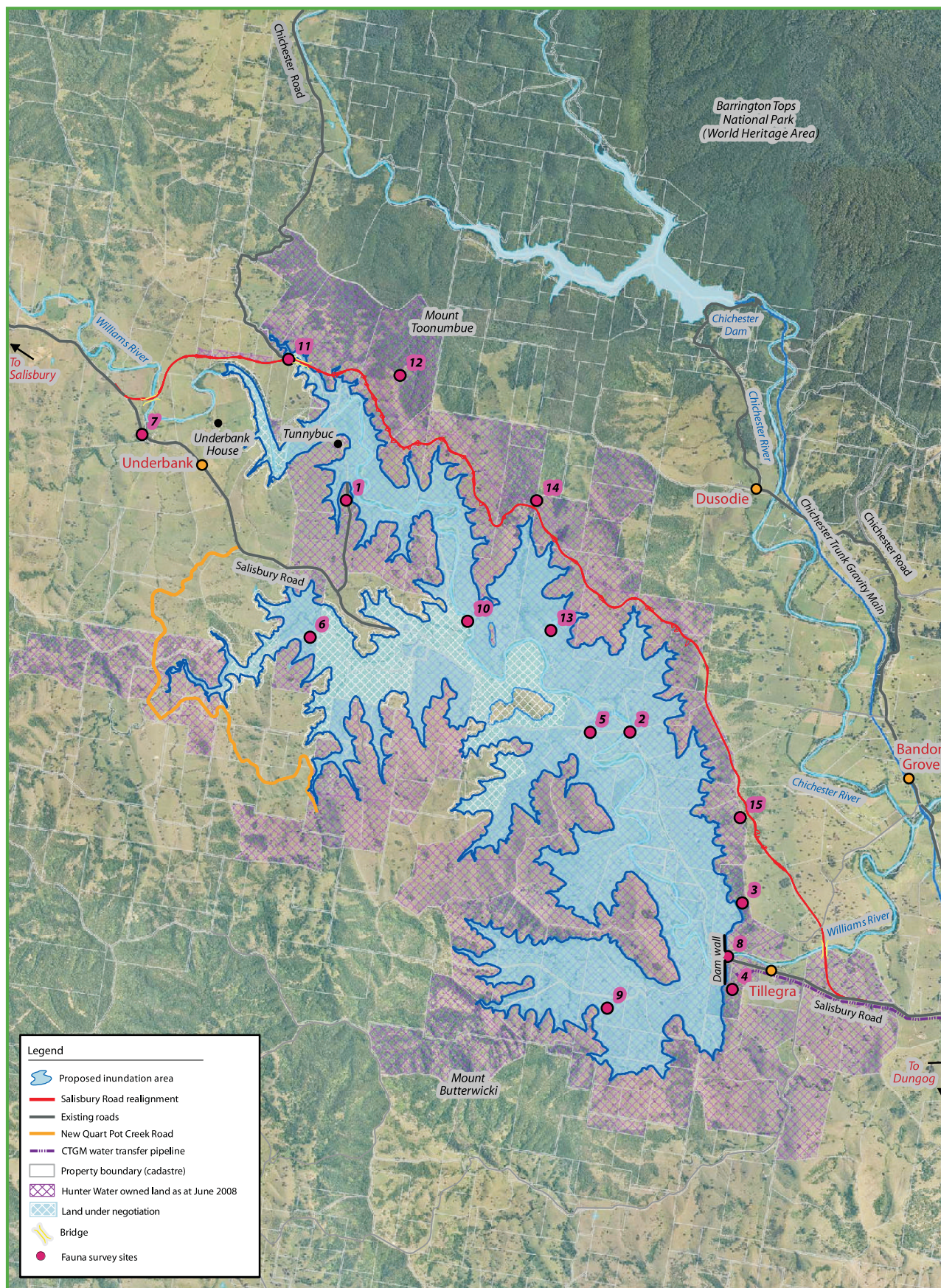
The Riparian Forest community consisted predominantly of river oaks and was considered to be a variant of the River-flat Eucalypt Forest on Coastal Floodplains EEC due to the absence of eucalypts in large sections of the riparian vegetation. Further, in some intersecting gullies and drainage lines intergrading forms of the Subtropical Coastal Rainforest EEC were considered to occur.

Additionally, one highly modified community, 'Cleared open pasture with remnant trees', occurs within the Project area.

The vegetation of the Project area has importance as it provides habitat for fauna and is part of a corridor providing connectivity for fauna movement and exchange of genetic material for native flora species at the local level. The condition of the vegetation varies throughout the Project area with the heaviest weed infestation within the natural communities generally occurring along the river and creek line riparian areas and in gullies. Five of the weed species recorded are declared noxious weeds in the Dungog LGA under the *Noxious Weeds Act 1993*. Within the pasture areas, grazing generally results in a relatively low level of noxious and environmental weeds.

### 11.2.2 Fauna

A total of 157 fauna species were identified during field surveys (refer Figure 11.2). These comprised 95 birds, 32 mammals, 16 frogs and 14 reptiles. A further seven species of insectivorous bats were tentatively identified based on ultrasonic call analysis. Six introduced species were also recorded: black rat, brown hare, common myna, dog, house mouse and rabbit.



**FIGURE 11.2** LOCATIONS OF TERRESTRIAL FAUNA SURVEY SITES