



**Baralaba South Project**  
**Environmental Impact Statement**

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CHAPTER 8

**Biosecurity**

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## 8 Biosecurity

This chapter discusses matters of biosecurity in accordance with the 'State Government Biosecurity - EIS information guideline' (DES, 2020), including:

- fauna biosecurity (health, disease);
- flora biosecurity (plant health, pests and diseases);
- pest plants and animals; and
- herbicide use (residues and contaminant risks).

Matters of biosecurity were identified from the terrestrial surveys undertaken by Ecological Survey & Management, and aquatic ecology surveys undertaken by Ecological Services Professionals, from 2017 to 2020. The findings of these surveys are summarised in Chapter 7, Flora and Fauna, with full reports included in the Terrestrial Ecology Impact Assessment (Appendix F) and the Aquatic Ecology Assessment (Appendix G).

### 8.1 Environmental objectives

This chapter has been prepared to assist the Department of Environment and Science (DES) in carrying out the environmental objective assessment in respect of the environmental objectives as stated in the TOR. With respect to biosecurity, the construction, operation and decommissioning of the Project should aim to ensure that:

- the introduction and spread of weeds, pests and disease, pathogens and contaminants are avoided and minimised;
- existing weeds and pests are controlled, including biosecurity threats and their management; and
- the performance outcomes correspond to the relevant policies, legislation and guidelines and sufficient evidence is supplied (including through studies and proposed management measures) that shows these outcomes can be achieved.

### 8.2 Existing biosecurity risk

#### 8.2.1. Introduced fauna species

Six introduced terrestrial fauna species listed under the *Biosecurity Act 2014* (Qld) were recorded by the Project ecology surveys, as listed in Table 8.1.

Table 8.1: *Introduced fauna species*

Species	Common name	Biosecurity Act status
<i>Rhinella marina</i>	Cane Toad	Invasive biosecurity matter
<i>Canis lupus</i>	Dog	Categories 3, 4 and 6
<i>Oryctolagus cuniculus</i>	European Rabbit	Categories 3, 4 and 6
<i>Felis catus</i>	Feral Cat	Categories 3, 4 and 6
<i>Sus scrofa</i>	Feral Pig	Categories 3, 4 and 6
<i>Sturnus tristis</i>	Common Myna	Invasive biosecurity matter

### 8.2.2. Introduced flora species

Fifty-four introduced flora species listed under the *Biosecurity Act* were recorded by the Project ecology surveys. The Project ecology surveys indicate the presence of exotic grasses within vegetation communities in the study area. These include:

- Buffel Grass (*Cenchrus ciliaris*);
- Green Panic (*Megathyrsus maximus var. pubiglumis*);
- Red Natal Grass (*Melinis repens*); and
- Sabi Grass (*Urochloa mosambicensis*).

Other flora species identified within paddocks and regrowth vegetation include Spiny Sida (*Sida spinosa*), South African Pigeon Grass and Black Pigweed.

Weeds of National Significance (WoNS) are assessed based on the invasiveness, economic, social and environmental impacts, any consequent socioeconomic impacts (e.g. impacts on health, fire risk, and recreational values of an area) and the environmental values associated with a weed. There is no legislated requirement for the control of WoNS.

At the state level, the *Biosecurity Act* provides the framework and powers for improved management of pest plants. Four states restricted exotic flora species were recorded by the Project ecology surveys (three terrestrial species and one aquatic species), as listed in Table 8.2. Each of these species is also listed as WoNS.

Field surveys of the study area identified two introduced flora species, the Mimosa Bush (*Vachellia farnesiana*) and the Noogoora Burr (*Xanthium pungens*). These two flora species pose a biosecurity risk, and general biosecurity obligations will apply (Table 8.2). All introduced terrestrial species have been recorded infrequently in the study area and in small numbers (Appendix F, Terrestrial Ecology Impact Assessment).

Table 8.2: State declared exotic flora in the study area

Species	Common name	WoNS	Biosecurity Act
<b>Terrestrial Species</b>			
<i>Opuntia aurantiaca</i>	Tiger Pear	✓	Category 3
<i>Opuntia atricta</i>	Common Prickly Pear	✓	Category 3
<i>Opuntia tomentosa</i>	Velvet Prickly Pear	✓	Category 3
<i>Parthenium hysterophorus</i>	Parthenium	✓	Category 3
<i>Vachellia farnesiana</i>	Mimosa Bush	—	General biosecurity obligation
<i>Xanthium pungens</i>	Noogoora Burr	—	General biosecurity obligation
<b>Aquatic Species</b>			
<i>Pistia stratiotes</i>	Water Lettuce	—	Category 3

### 8.2.3. Introduced aquatic flora and fauna

Fifteen introduced species of aquatic flora are known to occur in the Dawson River sub-basin (DES, 2019b). Of these, three species are declared Category 3 restricted invasive plants under the *Biosecurity Act*. Two species of introduced aquatic flora have been recorded during surveys of the Dawson River and Shirley's Gully but are not present at sites within the Project area.

Five pest species of fish are known to occur in the Fitzroy River Basin, four of which are also known to occur in the Dawson River sub-basin. Two species of introduced aquatic fauna have been recorded at three sites including within the Project area. Table 8.3 lists the aquatic flora and fauna species identified.

Table 8.3: *Introduced aquatic flora and fauna*

Species	Common Name	Classification
<b>Flora</b>		
<i>Pistia stratiotes</i>	Water Lettuce	Category 3
<i>Hymenachne amplexicaulis</i>	Olive Hymenachne	Category 3 and WoNS
<i>Salvinia molesta</i>	Salvinia	Category 3 and WoNS
<b>Fauna</b>		
<i>Gambusia holbrooki</i>	Eastern Mosquito fish	Restricted noxious fish, <i>Biosecurity Act 2014</i>
<i>Carassius auratus</i>	Goldfish	Non-indigenous pest fish, <i>Fisheries Act 1994</i>

#### 8.2.4. Vector-borne diseases

Vector-borne diseases are transmitted through bites from infected animals, mosquitoes and ticks. The Project occurs within the cattle tick biosecurity zone. Mosquitoes can spread diseases and viruses in livestock (e.g. cattle, horses) and in humans. In livestock, these diseases and viruses can lead to infertility, sickness, fevers, neuromuscular impairment, heart murmurs, diarrhoea, spontaneous abortions, and death (Business Queensland, 2016).

Queensland Health identifies several mosquito-borne diseases within Queensland that can be transmitted to humans (Queensland Health, 2019a). The mosquito-borne diseases and viruses present within Queensland include:

- Dengue;
- Ross River Virus;
- Barmah Forest Virus;
- Japanese Encephalitis;
- Murray Valley Encephalitis;
- Malaria;
- West Nile Virus Kunjin sub-type; and
- Zika Virus (Qld Health 2019b).

These diseases are notifiable under the *Public Health Act 2005*.

### 8.3 Potential impacts

Land disturbance, increased vehicle movements and imported machinery associated with the Project have the potential to introduce additional weed species. Similarly, vegetation clearing and the introduction of additional food and water sources can create favourable conditions for pest fauna species.

### 8.3.1. Terrestrial pests (fauna)

Pest fauna species pose a variety of risks to Queensland's economic, environmental and agricultural values, including:

- predation on livestock and native fauna species;
- damage to crops, dams and pastures;
- lowered pasture production;
- impacts on natural resources including water sources, soils, and canopy cover;
- increased costs associated with management and control programs;
- increased competition for habitat, shelter, food and other resources;
- overgrazing of native vegetation, and inhibition of native species regeneration;
- risk of disease transmission to livestock and native species; and
- biological impacts caused by lethal toxic ingestions (e.g. by cane toads).

Certain species (e.g. wild dogs, feral cats) have been shown to be responsible for the extinction of some native species.

### 8.3.2. Terrestrial pests (flora)

Weed species have the potential to cause a wide range of social, economic, agricultural and environmental impacts. Some species:

- are highly poisonous to livestock and native fauna;
- impede the movement and ability for farmers to muster livestock;
- have spines and thorns that can harm livestock and prevent them from eating;
- are highly invasive and can invade grasslands, pastures, open woodlands and waterways;
- outcompete native species, preventing native recruitment—sometimes smothering native vegetation or forming dense thickets chocking out natives;
- reduce biodiversity;
- impede native fauna movement;
- reduce food availability for fauna species; and
- reduce the diversity of habitat types available.

### 8.3.3. Aquatic pests (fauna)

The Project ecology surveys recorded two pest species of fish in the Dawson River, the Mosquitofish (*Gambusia holbrooki*) and the Goldfish (*Carassius auratus*). These pest species of fish have the potential to adversely impact their surrounding environments. In particular, the Mosquitofish poses a threat to native aquatic life within Queensland. The potential impacts of the Mosquitofish include:

- increased competition for food and resources;
- direct predation of fish and amphibian species within the aquatic system;
- dominance of aquatic environments due to highly successful reproduction rates; and
- a resultant reduction in the biodiversity of aquatic life.

### 8.3.4. Plant pests and diseases

Plant pests and diseases pose a threat to Queensland's economy, environment and agricultural industries. Plant pests and diseases are classified by the Queensland Department of Agriculture and Fisheries (DAF) or the Commonwealth Department of Agriculture, Fisheries and Forestry (DAFF) as either notifiable, exotic or emerging. Those that are classified as notifiable are of high priority and trigger a legal requirement to report any sighting to DAF.

The Project occurs near several areas of high environmental value, as well as neighbouring properties with established agricultural values present. The introduction, or establishment, of a plant disease or pest within the Project area thereby creates potential for impacts on these environmental and agricultural values.

### 8.3.5. Vector-borne diseases

Vector-borne diseases can have potential health impacts for employees, local communities and neighbouring properties. Though the Project occurs within the cattle tick biosecurity zone, it is considered unlikely that the Project will result in an increase in the presence of ticks. However, the presence of a workforce does have the potential to increase the presence of suitable breeding sites for mosquitoes, thereby increasing the risk for the spread of mosquito-borne diseases.

## 8.4 Mitigation and management measures

The Project falls within the Banana Shire Council area, and, as set out in further detail below, management measures will be developed to be compatible with council's pest management priorities and will comply with biosecurity obligations of DAF and DAFF.

### 8.4.1. Pest and weed management

A Weed and Pest Management Plan will be prepared and implemented as part of the Project and will include reasonable and practicable measures to mitigate each identified biosecurity risk. Control programs included in the Pest Management Plan will be prepared in accordance with methods recommended by DAF.

The Weed and Pest Management Plan will address faunal pest risks by:

- establishing vegetation clearance requirements and procedures;
- ensuring that potential food and water sources are managed to reduce pest abundance; and
- ensuring that any control measures and management strategies adhere to accepted animal welfare requirements.

The Weed and Pest Management Plan will include weed management controls that address:

- Reporting: any declared weeds will be identified, and dealt with pursuant to the *Biosecurity Act*;
- Vehicle wash-down requirements: vehicles may require wash-down prior to entering the Project area if arriving from a known high risk area to avoid the introduction of new weed species;
- Staff training: staff will be notified of the major weed species in the locality, and, where necessary, will be required to report any identified weed infestations to their supervisors;
- Weed control program: weeds will be controlled in accordance with DAF recommended methods specific to that species. Herbicides will be used in accordance with their label requirements and only on those species that are capable of being managed effectively by that particular herbicide. This capability evaluation will take into consideration factors specific to the Project, such as weather, surrounding vegetation and watercourses, and the potential for off-target loss;

- Prioritisation of treatment of weed species: for those weed species that are identified as WoNS, and/or are restricted under the *Biosecurity Act*, will be treated as a matter of priority; and
- Periodic surveys: information on weed composition and distributions on-site will be gathered periodically throughout the life of the Project.

#### **8.4.2. Vector-borne disease**

The most effective measure for minimising the risk of a mosquito outbreak is reducing the opportunity for mosquitoes to breed. Under Queensland state legislation, the control of mosquitoes is the responsibility of local government bodies. However, it is considered good practice for landowners and land managers to take steps to reduce the risks of mosquito outbreaks and associated mosquito-borne diseases.

The Project will implement the following practices to reduce the risk of mosquito outbreaks:

- general protection measures will be implemented to reduce the likelihood of mosquito bites (e.g. long sleeves on shirts, insect repellent);
- potential breeding sites for mosquitoes will be eliminated by identifying and minimising the potential for water ponding to occur; and
- should employees begin to show symptoms associated with vector-borne diseases, they will be monitored and taken for treatment, and details of the incident will be reported to appropriate authorities.

#### **8.4.3. Weed and Pest Management Plan monitoring program**

In addition to regular inspections of the Project area and to assist with the early detection and eradication of weeds and pests, it is proposed that additional monitoring will be carried out at an appropriate frequency. Monitoring activities are proposed to include:

- Regular Weed Monitoring: monitoring will occur every 18 months to identify any weeds not previously identified in the region. The aim will be to schedule surveys to observe spring or summer weeds one year and winter or autumn weeds the following year, thus ensuring sampling is conducted in different seasons. This survey will cover each location within the weed management area, including some areas that do not usually have any weeds present.
- Routine Monitoring: areas identified as higher risk (e.g. areas that are known to regularly exhibit weeds or are at high risk of weed infestations) will be monitored at the start of each season, especially after significant rainfall.
- Opportunistic Monitoring: any weeds observed during normal activities are to be recorded and managed accordingly.

Monitoring results will be reviewed on an annual basis to assess the performance of the management measures undertaken and identify any corrective actions that may be required.