

Connell Hatch  
ABN 21 646 421 651  
433 Boundary Street  
Spring Hill  
Queensland 4004 Australia

Telephone: +61 7 3135 8444  
Facsimile: +61 7 3135 8445  
Email: [chbne@connelhatch.com](mailto:chbne@connelhatch.com)  
[www.connelhatch.com](http://www.connelhatch.com)

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**Application for the Disturbance/Removal  
of Marine Vegetation  
Jilalan Rail Yard Upgrade Project  
Queensland Rail**

30 November 2007  
Reference HR50  
Revision 1

## Document Control



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## Appendix A

Flora List

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## 1. Introduction

This report provides information on the proposed works for the Jilalan Rail Yard Upgrade Project (JRYUP) affecting the northern extent (Plane Creek section) of the project area. The overall condition and extent of the existing marine vegetation within this area is also discussed along with an outline of proposed mitigation strategies to compensate for the disturbance or loss of marine vegetation within the project area.

A comprehensive list of marine flora present within the project area has been included in Appendix A. It should also be noted that no threatened flora or fauna were identified during field investigations of this area. However, due to seasonal constraints or lack of fertile material, it is possible that some species may not have been detected.

## 2. Project works affecting the northern extent

The JRYUP will provide for a new bidirectional locomotive provisioning facility and the refurbishment of the existing wagon maintenance facility with new tracks to store three trains that can be assembled and ready for immediate deployment. Infrastructure works affecting the northern extent of the project area include:

- Realignment of existing rail infrastructure
- Road realignment for Smyths Road
- Grade separation for Smyths Road

The proposed expansion is designed to cater for imminent growth in coal exports through the Dalrymple Bay and Hay Point Coal Terminals. A corresponding increase in the capacity of QR's rail infrastructure within the Goonyella Rail System is required to accommodate this growth. The rail will facilitate rail traffic and eliminate conflicts between through rail traffic and the new yard facilities.

The land parcels outlined in Table 2.1 are those that contain marine vegetation within the northern extent of the project area.

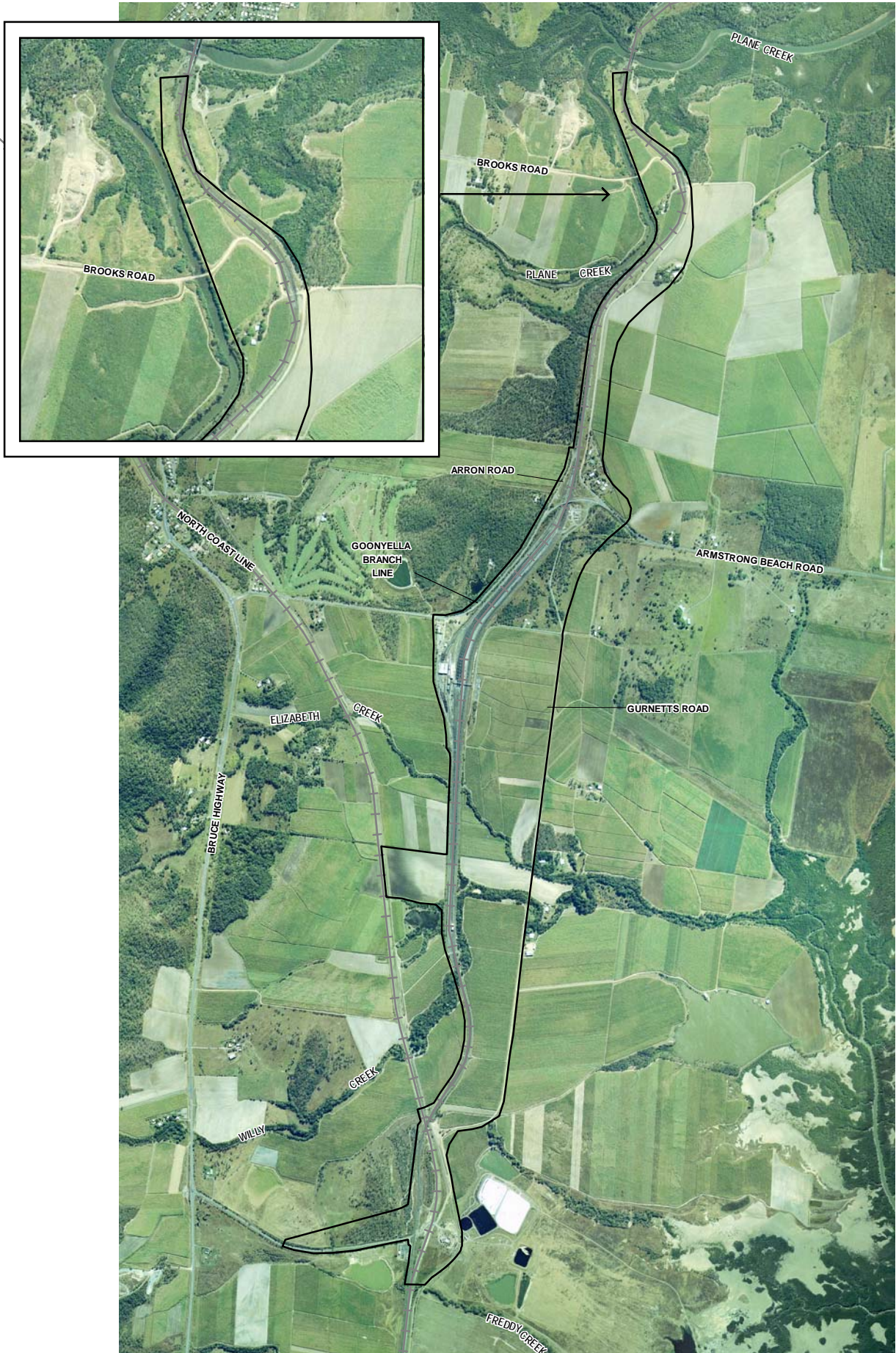
Table 2.1 Summary of land tenure within the indicative extent of proposed works

Section of Project Area that applies to this application	Lot	Plan number	Tenure	Tenure type	Land ownership/lessee
Smyths Road Area (West of Goonyella Branch Line)	100	USL39250	Crown land	USL	State of Queensland
	1	RP725966	Freehold	Fee Simple	Private land owners

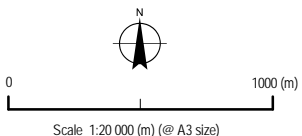
## 3. Existing environment

Within the project area, land has been extensively cleared to accommodate sugar cane farming. As shown in Figure 1, the vegetation within the northern extent of the project area (adjacent to Plane Creek) is predominantly as follows:

- Sugar cane
- Grassland
- Intertidal wetlands containing mangrove and samphire/saline grassland vegetation
- Isolated patches of *Melaleuca* spp. and *Casuarina cunninghamiana* fringing watercourses



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PROJECT AREA

FIGURE 1

Specifically, marine vegetation pursuant to *Fisheries Act 1994* comprises of intertidal riparian vegetation along the banks of Plane Creek; grassland communities; and intertidal drainage lines. Each of these vegetation categories have been discussed in further detail below.

### 3.1 Grassland community

As highlighted in Figure 2, *Sporobolus virginicus* (Saltwater couch) occurs in an isolated community on the western side of the existing rail corridor. The vegetation is contiguous with a small drainage line from Plane Creek. The 'island' community is approximately 600 m<sup>2</sup> in size and is surrounded by *Melaleuca* spp. and exotic species such as *Megathyrsus maxima* (Panic grass) and *Saccharum* sp. (Sugarcane).

The overall integrity of the Saltwater couch community is considered to be in fair condition due to the intertidal drainage line adjacent to it. It is also considered to provide limited habitat potential and fisheries value, however it should be noted that remains, scats and tracks were observed during a site investigation in November 2007 which indicate that the area is being utilised by reptiles and macropods.

It is considered that this vegetation is unlikely to be directly impacted during construction and/or operation activities due to its location within the project area.

### 3.2 Intertidal Drainage Lines

Figure 2 shows an intertidal drainage line adjacent to Plane Creek. Marine plants within the eastern part of this drainage line will be affected by construction activities for the JRYUP. Samphire vegetation within the drainage line includes *Portulaca bicolor*, *Sporobolus virginicus* and *Enchylaena tomentosa* var. *glabra*. Vegetation within the closed canopy further towards Plane Creek includes species such as *Acanthus ilicifolius*, *Excoecaria agallocha* var. *agallocha* and *Hibiscus tiliaceus*.

As shown in Figure 2, the samphire vegetation (lower stratum) is in poor condition and is restricted to the lower areas of the drainage line with weed grass species encroaching upon its riparian banks. The western extent of the drainage line however is much more intact with an increase in floristic complexity as well as a reduction of weed infiltration due to canopy closure (refer Photo 1).



Photo 1 Mangrove vegetation inside the drainage line

The samphire vegetation in the drainage line along with two *Excoecaria agallocha* var. *agallocha* specimens (adjacent the existing rail line) are considered to be within the area of direct disturbance and are likely to be negatively impacted during construction activities. The mangrove/hibiscus vegetation in the western extent of the drainage line is not within the project area, however it may be indirectly impacted as a result of alterations to the hydrological regime upstream of the site and within the drainage line.



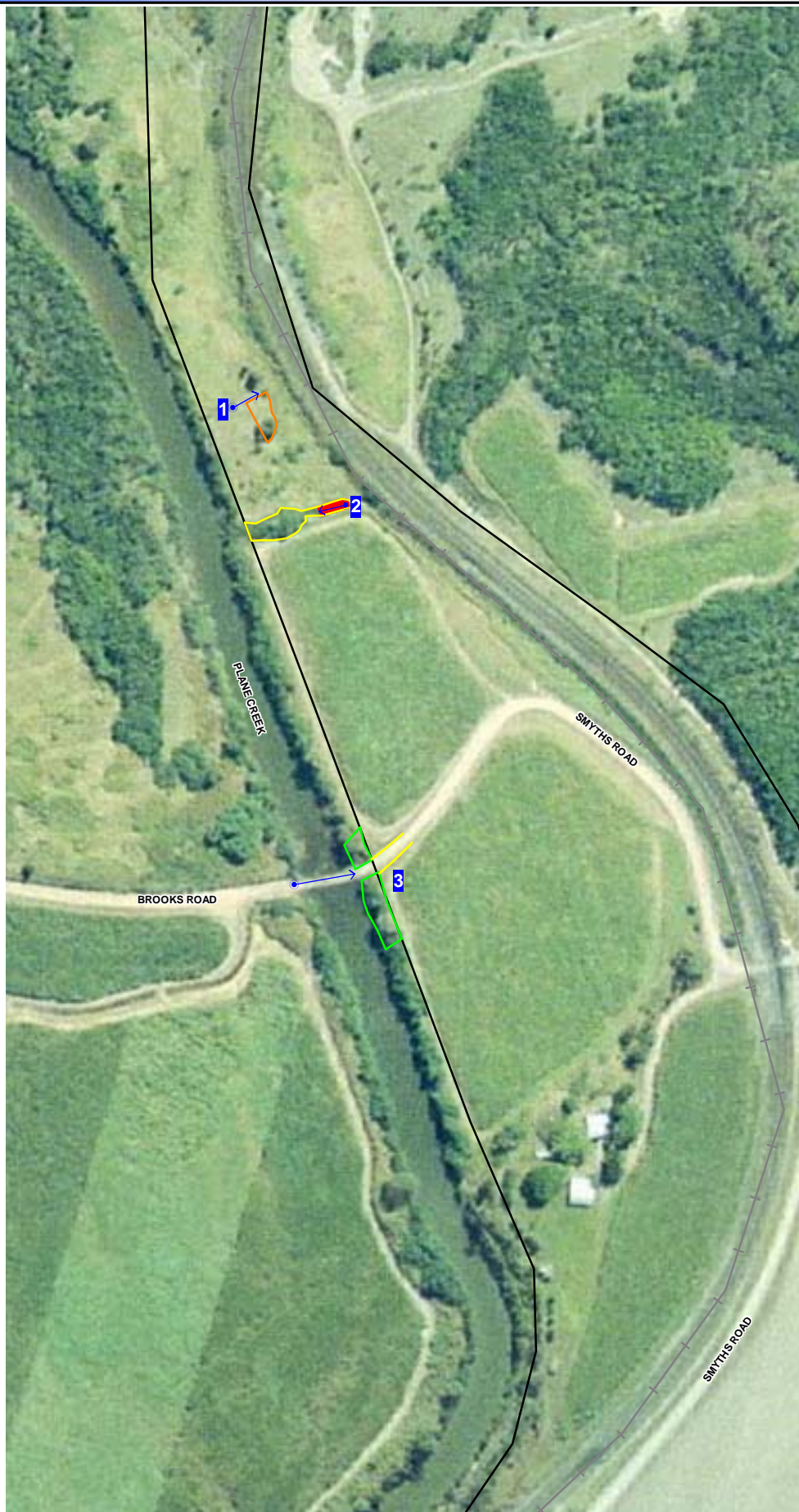
1: Grassland Community



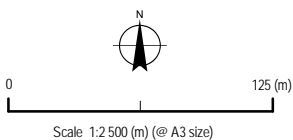
2: Intertidal Drainage Line



3: Intertidal Riparian Vegetation



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### LEGEND

- Region
- Photo Reference Point
- Direction of Photo

### Marine Vegetation

- Saline Grassland
- Intertidal Drainage Line
- Intertidal Riparian Vegetation

- Marine Vegetation to be removed

### MARINE PLANT DISTURBANCE

FIGURE 2

### 3.3 Intertidal riparian vegetation (along Plane Creek)

Riparian vegetation at the substrate crossing on Smyths Road consists of *Acanthus ilicifolius*, *Excoecaria agallocha* var. *agallocha* and *Hibiscus tiliaceus* with mature *Melaleuca* spp. As shown in Photo 2, the northern side of the substrate was dominated by weed species and subject to erosion due to bank height, steepness of slope and lack of vegetation. The condition of the vegetation on the southern side of the substrate however is intact with little weed infiltration (refer Figure 2).

It is not anticipated that this vegetation will be directly impacted during construction activities as it is outside of the project area.



Photo 2 Northern side of riparian zone

## 4. Potential impact and mitigation measures

The total area of potential direct disturbance to marine vegetation within the project area is approximately 107 m<sup>2</sup> (refer Figure 2).

The size of the disturbance in relation to the surrounding marine vegetation is considered to have a minimal impact on the integrity of the intertidal system. However, to accommodate the sensitivity of this intertidal area, the following mitigation strategies will be implemented during the construction and operational phases of the Project:

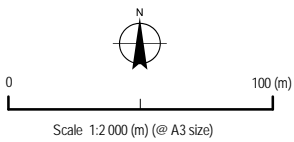
- To avoid an increase in sediment deposition into Plane Creek during construction activities, a Sediment and Erosion Control Sub Plan will be implemented. This plan will ensure adequate mitigation strategies are put in place for any construction activities that may negatively impact on Plane Creek and its associated intertidal vegetation.
- The removal or disturbance of marine vegetation from the areas discussed in Section 3 will be carried out in accordance with marine plant removal/disturbance approval conditions.
- The clearing of marine vegetation will be minimised to that required for construction purposes only. Clearly marked 'no go' zones will be established especially during the construction phase along with adequate awareness training given to the construction crew regarding the sensitivity of these areas.
- A Weed Management Plan will be implemented to minimise weed proliferation and edge effects into intertidal communities adjacent to Plane Creek. This will include management and eradication of existing weed species within the project area where practicable and a Vegetation Rehabilitation Strategy for QR owned land adjacent to Plane Creek.



- To reduce the potential for construction activities to disturb acid sulfate soils (ASS) an ASS Management Plan will be implemented during the construction phase of the Project.
- A 20 m wide vegetation buffer on QR owned land will be planted adjacent to the Plane Creek riparian vegetation to increase the integrity of the existing riparian zone (refer Figure 3). A comprehensive rehabilitation plan for this area will form a component of the Vegetation Rehabilitation Strategy for the Project.
- As recommended in the DPI&F comments on the Jilalan EIS dated 26 October 2007, a high flow bypass channel incorporating 2-3 refuge pools between Elizabeth and Willy Creeks will be incorporated into the final design. These pools will be 50 m long, 15-20 m wide and at least 3 m deep. The riparian zone around the channel will be rehabilitated with local native vegetation to aid in mimicking a natural system. The rehabilitation plan for the flow bypass channel will form a component of the Vegetation Rehabilitation Strategy for the Project.
- Maintenance activities within the northern extent of the Project that may be carried out during the operational phase will be in accordance with the Code for self-assessable development – Maintenance works on existing lawful structures (other than powerlines and on-farm drains) in a declared fish habitat area or involving the removal, destruction or damage of marine plants (Code number: MP02, March 2006).



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LEGEND	
	Rail
	Project Area
	20m Buffer adjoining Riparian Zone

20m VEGETATION BUFFER

FIGURE 3

# Appendix A

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Flora List

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## Flora List

<i>Scientific Name</i>	Common Name	Form	Location	Abundance
<b>Marine Vegetation</b>				
<i>Avicennia marina</i> var. <i>eucalyptifolia</i>	Grey Mangrove	T	IDL; IRV	O
<i>Acanthus ilicifolius</i>	Spiny holly mangrove	T	IDL; IRV	O A
<i>Enchylaena tomentose</i> var. <i>glabra</i>	Ruby saltbush	H	IDL; IRV	O
<i>Excoecaria agallocha</i> var. <i>agallocha</i>	Milky Mangrove	T	IDL; IRV	A
<i>Fimbristylis polytrichoides</i>	Rusty sedge	Se	GC	O
<i>Hibiscus tiliaceus</i>	Cottontree	T	IDL; IRV	A
<i>Portulaca bicolor</i>	Pigweed	H	IDL; IRV	A
<i>Sporobolus virginicus</i>	Salt couch	G	GC; IRV; IDL	A O
<b>Other Flora Present</b>				
<i>Lantana camara</i>	Lantana	S	-	-
<i>Megathyrsus maxima</i>	Panic grass	G	-	-
<i>Melaleuca fluviatilis</i>	Paper barked tea tree	T	-	-
<i>Melaleuca leucadendra</i>	Weeping teatree	T	-	-
<i>Mimosa pudica</i>	Sensitive weed	H	-	-
<i>Saccharum</i> sp.	Sugar cane	G	-	-
<i>Sphagneticola trilobata</i>	Singapore daisy	H	-	-
<i>Urochloa mutica</i>	Para grass	G	-	-

### Table Notes:

GC Grassland Community  
IDL Intertidal Drainage Line  
IRV Intertidal Riparian Vegetation  
  
O Occasional  
A Abundant

Form  
G Grass  
Se Sedge  
T Tree  
S Shrub