2023 Annual Compliance Report EPBC 2020/8692

Yorkeys Knob Boating Facility

2 February 2023 to 1 February 2024

Queensland Government

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Document control options

Prepared by	[redacted]
Title	[redacted]
District & Region	Far North Queensland
Branch & Division	Maritime Safety Queensland, CSSR
Project/program	Yorkeys Knob New Boat Ramp Facility
Project number	TMR ref 0274M803200, EPBC 2020/8692
Project location	Yorkeys Knob, Cairns QLD
Status	Draft
DMS ref. no.	

VERSION HISTORY			
Version No.	**Date**	**Changed by**	**Nature of amendment**
1	22 August 2024	[redacted]	Final Draft

Contents

Declaration of accuracy

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed [redacted]

Full name (please print): [redacted]

Position (please print): [redacted]

Organisation: **Department of Transport and Main Roads, ACN: 394 076 902 91**

Date: **22/8/2024**

Description of activities

EPBC number – EPBC 2020/8692
project name – Yorkeys Knob Boating Infrastructure Project, near Cairns, Queensland
approval holder – Department of Transport and Main Roads
ACN – 394 076 902 91
the approved action -
location of the project – Yorkeys Knob, Cairns, Queensland
person accepting responsibility for the report – [redacted]
dates for the reporting period of the report – 2 February 2023 to 1 February 2024
date of preparation of the report – Feb - August 2024

EPBC 2020/8692 Approval Conditions Compliance Table

Condition No./ ref	Condition	Is the project compliant with this condition	Evidence / Comments
	1. The approval holder must not clear any Ant Plant or any tree known to contain, or suspected of containing, one or more Ant Plants.	YES	No Ant Plants or trees containing Ant Plants have been cleared during the works because no Ant Plants are within the development footprint as detailed in the pre-clearance survey below. Note: The construction project concluded, and the facility was formally opened on 7 September 2023.
	2. The approval holder must not clear outside the project area as part of the action.	NO	As detailed below an incident involving some minor additional accidental mangrove clearing occurred at the start of the project in March 2022. These works were within the project area but just outside the approved proposed vegetation clearing area and were remote from the identified Ant Plants south of the project area. Details of this incident and proposed remediation measures are outlined below.
	3. To minimise impacts on the Ant Plant the approval holder must, at least two months prior to the commencement of the action, undertake pre-clearance surveys of all Ant Plant habitat within the project area that is proposed to be cleared. Pre-clearance surveys must be undertaken by an independent and suitably qualified field ecologist.	YES	Pre-clearance Survey provided – **Appendix 1**
	9. The approval holder must notify the department in writing of the date of commencement of the action within 10 business days after the date of commencement of the action.	YES	TMR emailed DCCEEW on the 9 February 2022 notifying the commencement of works and subsequently received confirmation from DCCEEW of receipt see **Appendix 2.**

10. If the commencement of the action does not occur within 5 years from the date of this approval, then the approval holder must not commence the action without the prior written agreement of the Minister.	YES	The action commenced on 2 February 2022 (As per **Appendix 2**) within six months of the amended decision notice issued on 20 September 2021.
11. The approval holder must maintain accurate and complete compliance records.	YES	TMR has a records management system to meet this condition.
12. If the department makes a request in writing, the approval holder must provide electronic copies of compliance records to the department within the timeframe specified in the request. Note: Compliance records may be subject to audit by the department or an independent auditor in accordance with section 458 of the EPBC Act, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the department's website or through the general media.	YES	The department has not asked for compliance records other than as required by condition 15 Annual compliance report (this document).

	13. The approval holder must: a. submit plans electronically to the department; b. publish each plan on the website within 20 business days of the date that the plan was approved by the Minister in writing; c. exclude or redact sensitive ecological data from plans that are to be published on the website or provided to a member of the public; and d. keep plans published on the website, or an alternative mechanism approved by the Minister, for the period this approval has effect.	YES	Given there are no Ant Plants within the construction footprint there are no management plans associated with this permit.
	14. The approval holder must ensure that all monitoring data (including sensitive ecological data), surveys, maps, and other spatial data and metadata required under the conditions of this approval, are prepared in accordance with the department's Guidelines for biological survey and mapped data (2018) and submitted electronically to the department in accordance with each annual compliance report required under condition 15.	YES	See pre-clearance survey A**ppendix 1**

	15. The approval holder must prepare a compliance report for each 12 month period following the date of commencement of the action, or otherwise as agreed in writing by the Minister. The approval holder must: a. publish each compliance report on the website within 60 business days following the relevant 12 month period; b. notify the department by email that a compliance report has been published on the website and provide the web-link for the compliance report within 5 business days of the date of publication; c. keep all compliance reports publicly available on the website until this approval expires; d. exclude or redact sensitive ecological data from compliance reports published on the website; and e. where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the department within 5 business days of publication. Note: Compliance reports may be published on the department's website.	NO	Some notification and reporting timeframes post construction phase have not been met for this annual period. TMR/MSQ will publish this annual report on its website in September 2024 and will notify the department once this action has been completed.

	16. The approval holder must notify the department in writing of any: incident; non-compliance with the conditions. The notification must be given as soon as practicable, and no later than 2 business days after becoming aware of the incident or non-compliance. The notification must specify: a. any condition which is or may be in breach; b. a short description of the incident and/or non-compliance; and c. the location (including co-ordinates), date, and time of the incident and/or non-compliance. In the event that the exact information cannot be provided, the best information available must be provided.	YES	One incident occurred during the construction phase of the works, involving some additional accidental mangrove clearing which was a non-conformance of **condition 2** above. Notifications and information was provided in accordance with this condition and also as required under State legislation. See **Attachment 3**

	17. The approval holder must provide to the department the details of any incident or non-compliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying: a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; b. the potential impacts of the incident or non-compliance; and c. the method and timing of any remedial action that will be undertaken by the approval holder.	YES	One incident occurred during the construction phase of the works, involving some additional accidental mangrove clearing and was fully reported in accordance with this condition and also fully reported and actioned in accordance with State legislation responsibilities. In accordance with the attached draft non-conformance report **Appendix 4** the project team implemented the following three primary elements: 1. Implement measures to reduce the footprint of required vegetation clearing (approved) wherever possible with the objective of maintaining total clearing to at or below the original approved footprint. 2. Undertake drone surveys at the conclusion of works to assess vegetation clearing extent and quantify the extent of natural recovery in the incident area. 3. Implement further rehabilitation measures in the event the desired objectives have not been achieved. Following the above process at the conclusion of the construction project it was identified that Action B in the non-compliance report was the required course of action requiring the rehabilitation of 310m2 of mangroves. TMR/MSQ subsequently commissioned a mangrove rehabilitation plan **Appendix 5** and provided this plan to DCCEEW and DAF via email when complete on 31 January 2024 (**Appendix 6**) Cairns Regional Council hold state mangrove harvesting approvals and their specialist contractor harvested mangroves as part of their annual program (from approved local stormwater management locations). Subsequently their specialist contractor undertook the required rehabilitation planting works at Yorkey's Knob incident site in February 2024. Monitoring in accordance with the plan is still ongoing.
	18. The approval holder must ensure that independent audits of compliance with these conditions of approval are conducted as requested in writing by the Minister.	N/A	An independent audit has not been requested by the Minister.

	19. For each independent audit, the approval holder must: a. provide the name and qualifications of the independent auditor and the draft audit criteria to the department; b. only commence the independent audit once the audit criteria have been approved in writing by the department; and c. submit an audit report to the department within the timeframe specified in the approved audit criteria.	N/A	An independent audit has not been requested by the Minister.
	20. The approval holder must publish the audit report on the website within 10 business days of receiving the department's approval of the audit report and keep the audit report published on the website until the end date of this approval.	N/A	An independent audit has not been requested by the Minister.
	21. Within 20 business days after whichever is the earlier of: a. the completion of the action; or b. 60 business days before the end date of the period for which this approval has effect; the approval holder must notify the department in writing of the date of the completion of the action and submit all completion data to the department.	YES	Neither of these milestones have been met.
	22. Within 20 business days after the completion of the construction phase of the action the approval holder must notify the department in writing of the date of the completion of the construction phase of the action and submit all completion data to the department.	YES	The completion of the construction phase occurred on 17 October 2023 and the department was notified of this via email on 31 October 2023 with all completion data, see **Appendix 7.**

Non compliances and corrective actions

Appendix 4 details the non-compliance and proposed corrective actions associated with the vegetation clearing incident detailed in the table above.

Measures were implemented to ensure the incident wasn't repeated which were effective, given no further incidents occurred.

TMR and its contractor have wherever possible implemented measures to reduce the footprint of approved vegetation clearing with the objective of removing the net impact of this incident against the approved clearing footprint.

A post works drone capture and assessment of mangrove recovery in the incident area occurred as detailed in **Appendix 7** which in summary showed that TMR and its contractor were successful in achieving no net additional marine plant impact resulting from the incident (IE the originally approved marine plant impact area for the project was less than the actual marine plant impact area, including the incident area.) However, the post works survey showed that only 0.005 ha of natural recovery had occurred in the incident area which included an incident impact area of 0.031ha. Based on the above outcome in accordance with the non-compliance and rehab strategy **Appendix 4** TMR commissioned a rehabilitation plan for rehabilitation of 0.031ha of mangroves, which can be found in **Appendix 5.** This rehabilitation plan was subsequently provided to DCCEEW and DAF on 31 January 2024 (**Appendix 6)**

Implementation of this plan commenced with planting completed on 23 February 2024 aligned with the Cairns Regional Council's (CRC) (TMR's partner in this project) approved mangrove harvesting permit window resulting in the planting of minimum of 190 Mangrove hypocotyls in the rehabilitation area and 45 littoral/strand seedings. CRC's specialist contractor who undertook the planting have subsequently completed the monitoring work to date. Two photos from 17 July 2024 below indicate positive rehabilitation results to date with monitoring works continuing.

Appendix 1 – EPBC 2020-8692 commencement notification

[redacted]

From: [redacted]
Sent: Wednesday, 9 February 2022 9:14 AM
To: EPBCMonitoring@awe.gov.au
Cc: [redacted]
Subject: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Commencement Notification

Categories: DMS

Hi DAWE

In accordance with condition 9 of EPBC 2020/8692, The State of Queensland Acting from the Department of Transport and Main Roads wishes to notify DAWE that construction works commenced via a possession of site being granted to our contractor on 2 February 2022.

Please let me know if you require any further information, it is expected that the construction works will take approximately 12 months.

Kind Regards
[redacted]

[redacted]
Maritime Safety Queensland
Department of Transport and Main Roads

Floor 4 | 61 Mary Street | Brisbane City Qld 4000
GPO Box 1549 | Brisbane City Qld 4001
P: [redacted]
W: www.tmr.qld.gov.au

Appendix 2 – EPBC 2020-8692 pre-clearance survey

BMT Commercial Australia Pty Ltd
Level 5, 348 Edward Street
Brisbane Qld 4000
Australia
PO Box 203, Spring Hill 4004

Tel: + 61 7 3831 6744
Fax: + 61 7 3832 3627

ABN 54 010 830 421

www.bmt.org

Technical Memorandum

From:	[redacted]	To:	[redacted]
Date:	23 July 2021	CC:	[redacted]
Subject:	**Yorkeys Knob Boating Infrastructure Project - Pre-clearance Surveys**		

CONDITIONS OF APPROVAL – ANT PLANT PRE-CLEARANCE SURVEY (EPBC 2020/8692)

The Yorkeys Knob Boating Infrastructure Project (EPBC 2020/8692) was referred under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to the Department of Agriculture, Water and the Environment (DAWE) on 14 July 2020.

As per Item 3 under the draft Conditions of Approval for the project, a targeted Ant Plant (*Myrmecodia beccarii*) pre-clearance survey (the survey) was undertaken on 9th June 2021.

The survey was undertaken by independent and suitably qualified field ecologists led by Gemma Tucker of BioTropica Australia. Refer to Attachment A for Gemma's qualifications.

The targeted flora survey was undertaken within all habitats within the project area that are proposed to be cleared. The survey involved inspections of all habitats and potential host trees for ant plant within the proposed area to be cleared. Figure 1 shows the proposed areas to be cleared and the extent of the survey effort.

No ant plants were recorded by BioTropica within the proposed area to be cleared. Ant plants were confirmed adjacent to the proposed area to be cleared as identified in previous surveys undertaken by BMT 2018, and the current BioTropica survey (refer Figure 1).

The ant plants adjacent to the proposed area to be cleared will not be directly impacted by the project.

If you have any queries on the above matter please do not hesitate to contact me on (07) 3831 6744.

[redacted]

[redacted]

[redacted]

BMT

Aerial image: 5 May 2021 © Nearmap

Northern Breakwater

Dredged Harbour Basin

Half Moon Bay Marina

Breakwater

Western

Beach

Boat Ramp and Floating Walkways

Beach

Carpark Area

Buckley Street

High Protective Screen Fences

Access Road and Pedestrian Footpath

High Protective Screen Fence

Western Culverts

Creek Crossing Culverts

Half Moon Bay Golf Course

LEGEND

- Ant plant records (BMT 2018)
- Ant plant records (BioTropica 2021)
- Pre-clearance survey (BioTropica 2021)
- Proposed development footprint (Royal HaskoningDHV - 8 July 2021)

Title:

Ant Plant *(Myrmecodia beccarii)* Pre-clearance Survey

Figure: 1

Rev: B

N

0 40 80

Metres

BMT

www.bmt.org

Filepath: I:\B24067_I_GML_Yorkeys Knob Approval\DRG\ECO_019_210722_BioTropica_RevC.WOR

[redacted]

Personal Profile

[redacted] has almost 10 years of experience working throughout far north Queensland and has an excellent knowledge of flora species in the region. Prior to this[redacted] worked in landscape restoration in New South Wales where she obtained a practical knowledge of a variety of on-ground works and recognises the importance of implementing quality post-disturbance management.

[redacted] completed a Bachelor of Science with majors in Ecology and Conservation at James Cook University in Cairns in 2014 and is currently undertaking a post-graduate research project through James Cook University, investigating non-indigenous perspectives in community-based Landcare in Australia.

[redacted] regularly undertakes field surveys throughout far north Queensland and is a Suitably Qualified Person under the *Nature Conservation Act 1992*, which allows her to lead detailed field surveys in search for threatened plants. She has experience in threatened species management and planning, environmental impact assessment, flora and fauna assessments, weed assessments and management, environmental assessment, rehabilitation, ecological monitoring, BioCondition assessments and more. [redacted] also has an excellent understanding of statutory and policy frameworks at the local, state and national level.

During her career [redacted] has worked extensively in the Wet Tropics and Cape York Peninsula regions as well as throughout central and northern Queensland and Papua New Guinea.

[redacted] is a keen student of tropical botany and continuously aims to expand her knowledge of local tropical flora. She is actively involved in local botanical groups and continues to increase her botanical knowledge through travelling and exploring the natural environments of Far North Queensland.

Education / Qualifications

Bachelor of Science (Ecology and Conservation) James Cook University, Cairns	2011 - 2014
Certificate III (Conservation and Land Management) TAFE NSW, North Ryde	2010
Suitably Qualified Person under the *Nature Conservation Act 1992*.	2016 - current

Relevant Certifications

Senior First Aid and CPR Certificate
Working Safely at Heights – Statement of Attainment
Ergon – Working near powerlines
Construction White Card

[redacted]

Employment

Senior Environmental Scientist 2021 - current

Biotropica Australia, Tarzali, Atherton Tablelands, Queensland, Australia

Environmental Scientist 2012 - 2021

Biotropica Australia, Tarzali, Atherton Tablelands, Queensland, Australia

Bush regenerator 2010 - 2011

Bush-It Pty Ltd, Annandale, New South Wales, Australia

Key Projects

- **Client:** TMR (January 2012– Current)

  Project: Various ecological assessments (incl. assisting fauna surveys) of road deviations, road upgrades plus water storage sites and quarry sites across far north Queensland

- **Client:** Diatreme Resources (January 2019– Current)

  Project: Wet and dry season flora component of EIS for proposed Galalar Sand Mine, Cape Bedford, North Queensland

- **Client:** Environment North Pty Ltd on behalf of the Douglas Shire Council (November 2018)

  Project: Woobadda River Landslip, ecological assessment, including a protected plant survey, fauna habitat assessment and the development of a weed management plan and restoration plan, north of Cape Tribulation, North Queensland

- **Client:** Environment North Pty Ltd on behalf of the Department of Transport and Main Roads (October 2018)

  Project: Townsville South Road Capacity Upgrade, Ecological Assessment, Townsville

- **Client:** Jacobs Group Australia (2018)

  Project: Bruce Highway Safety Upgrades Ecological Assessments

- **Client:** Tablelands Regional Council (2017-2018)

  Project: Wild River Dam, Herberton Protected Plant Survey

- **Client:** Department of Transport and Main Roads (2017)

  Project: Burke Developmental Road Resource Areas, Ecological Assessment (incl. assisting fauna survey), Cape York Peninsula, North Queensland

- **Client:** NQ Dry Tropics (2017)

  Project: Upper Burdekin Rangelands Biocondition Assessments

- **Client:** Urbansync (2017)

  Project: Cairns area Biocondition Assessment for Offsets

- **Client:** Golder Associates on behalf of Queensland Rail (2016)

  Project: Kuranda Scenic Railway Ecological Survey (incl. habitat assessments)

- **Client:** Flanagan Consulting Group, Australia (2016)

  Project: Cairns Shipping Development Project EIS, East Trinity and Northern Sands

- **Client:** Flanagan Consulting Group, Australia (2013–2015)

  Project: Aquis Resort at the Great Barrier Reef Mangrove Monitoring

- **Client:** Queensland Department of Transport and Main Roads (2016-2017)

  Project: Environmental Management Plans – North Queensland

- **Client:** Department of Transport and Main Roads (2015-2016)

  Project: *Cajanus mareebensis* De-listing Project; Botanical surveys across Cape York as a component of documentation to prepare the Cajanus mareebensis De-listing Submission

- **Client:** Department of Transport and Main Roads (2015-2016)

  Project: *Cajanus mareebensis* Translocation Project; Co-ordinating translocation of the State and Commonwealth listed legume Cajanus mareebensis (Endangered) at Musgrave/Kitja RA and assisting with translocation at the Lochinvar RA

- **Client:** ExxonMobil Corporation, Papua New Guinea (2012)

  Project: PNG LNG Project – Weed Identification Manual

Publications

[redacted] Landowner priority trees for planting and their field identification in YUS LLG, Huon Peninsula, PNG. Report for the TKCP Project, James Cook University, Cairns

Appendix 3 – EPBC 2020-8692 incident notification

[redacted]

From: [redacted]
Sent: Friday, 4 March 2022 4:32 PM
To: EPBC Monitoring
Cc: [redacted]
Subject: RE: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Notification of non-conformance

Hi [redacted]

I regret to inform you that our contractor has in error undertaken works including the removal of a small number of shoreline mangrove trees that are outside of the specified impact footprint. See indicative image below with vegetation in question marked in yellow.

In accordance with condition 16 I wish to notify the following;

(a) This action represents a non-conformance of permit condition 2 "The approval holder must not **clear** outside the **project area** as part of the action."
(b) TMR is waiting on a report from our contractor to gain specific details, however it would appear the EMP processes to demarcate the clearing area for general vegetation were not followed in full and/or communications with the excavator operator were not clear. This has resulted in a two small areas of mangroves being cleared in a narrow area between the creek and the access road, which were outside the proposed impact footprint.
(c) This incident was identified following TMR review of drone images of the works site on the 3/3/2022, the location is 16deg 48'10.51"S , 145deg 43'5.27"E

Once TMR gains the incident and rectification report I will provide this to DAWE as per condition 17.

Please note that this incident is also a non-compliance of our state approvals administered by the Department of Agriculture and Fisheries(DAF) regarding the removal/damage to marine plants. For this reason we have also notified DAF and will be consulting with DAF regarding proposed rehabilitation works in addition to yourselves.

In reporting this incident I wish to advise DAWE that this incident was remote from the ant plants previously identified adjacent the works site. As per our preclearance survey no ant plants were identified in the works area and the ant plants identified adjacent were demarcated with a suitable buffer zone and will remain so for the duration of the project.

Once I have more information I will provide it and then discuss further the proposed rehabilitation works.

Kind Regards

[redacted]

[redacted]

Maritime Safety Queensland
Department of Transport and Main Roads

Floor 4 | 61 Mary Street | Brisbane City Qld 4000
GPO Box 1549 | Brisbane City Qld 4001
P: [redacted]
[redacted]
W: www.tmr.qld.gov.au

From: [redacted]
Sent: Wednesday, 23 February 2022 2:25 PM
To: [redacted]
Cc: [redacted]
Subject: RE: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Commencement Notification [SEC=OFFICIAL]

Dear [redacted],

I apologise for the delay in getting back to you. Please see attached a letter in relation to your notification of commencement for EPBC 2020/8692.

For any further questions please do not hesitate to contact the EPBC Monitoring Mailbox.

Kind regards,

[redacted]
Environment Compliance Branch
Compliance Division
Department of Agriculture, Water and the Environment
GPO Box 858, CANBERRA ACT 2601

From: [redacted]
Sent: Wednesday, 9 February 2022 10:14 AM
To: [redacted]
Cc: [redacted]
Subject: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Commencement Notification

Hi DAWE

In accordance with condition 9 of EPBC 2020/8692, The State of Queensland Acting from the Department of Transport and Main Roads wishes to notify DAWE that construction works commenced via a possession of site being granted to our contractor on 2 February 2022.

Please let me know if you require any further information, it is expected that the construction works will take approximately 12 months.

Kind Regards
[redacted]

[redacted]
Maritime Safety Queensland
Department of Transport and Main Roads

Floor 4 | 61 Mary Street | Brisbane City Qld 4000
GPO Box 1549 | Brisbane City Qld 4001
P: (07) [redacted]
[redacted]
W: www.tmr.qld.gov.au

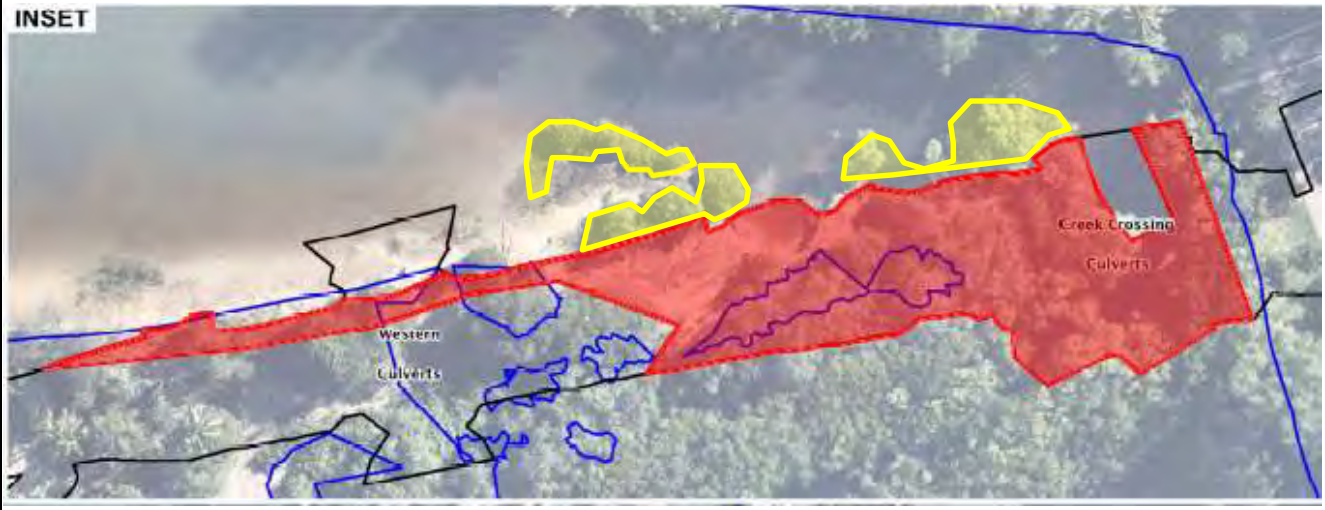
Appendix 4 - EPBC 2020-8692 non-conformance/corrective actions report

NON-CONFORMANCE REPORT

Project:	Yorkeys Knob Boat Ramp Project	**Project NCR Ref:**	001
Client:	Department of Transport and Main Roads	**Date Raised:**	03/03/2022
Subcontractor (if applicable):	N/A	**Incident Report #:**	N/A
NONCONFORMANCE DETAILS		**Supplementary information attached?** ☐	
Lot Number:	CLG-101		
Lot Type:	Clearing		
Structure / Location:	Northern Side of Site Access Road between Ch110 and Ch60		
Nonconformance Particulars:			

☐ **Minor**	☒ **Moderate**	☐ **Significant**	☐ **Critical**	☐ **Catastrophic**

After completion of the clearing works, it was noted that the extent of clearing conducted on the northern side of the Access Rd in between CH60 and CH110, exceeded the extent of the approved Marine Plant Impact Area as shown on the below figure with red shading.



Pre-Clearing Picture (below). Unapproved Clearing shown in yellow at near low tide.

NON-CONFORMANCE REPORT

Post-Clearing Picture (below). Unapproved Clearing shown in yellow at near low tide.

Potential Impact of Non-Compliance

1. The non-conformance causes an approval condition breach as clearing took place outside the approved clearing limits/project area.
2. The environmental impacts seem minor to moderate for the following reasons:
   a. The small footprint of the impacted area,
   b. The overall reduction of the clearing area across the project being still less than the approved footprint,
   c. The likelihood of rehabilitation (see corrective action section).
   d. As per the vegetation clearing plan in the EMP the mangrove stands were removed cut off at ground level, so the ground was no disturbed. For this reason, the remaining stumps and root systems will continue to capture sediment, mitigate erosion and promote reshooting of mangroves (see attached photos).
   e. Overtime as the stumps began to decay their effectiveness to provide erosion protection will diminished so it is important to promote recolonisation of the area.
   f. Given this specific section of creek opposite the Marina was particularly sparse of shoreline vegetation prior to the works the small, segmented area of mangroves removed in error do not represent a significant impact on the broader habitat. However, rehabilitation works proposed will promote a significant improvement in habitat value.

Casual Factors:

3. Hall developed a Vegetation Clearing Plan in line with the project documents and approvals (Annexure E to CEMP)
4. Prior to works commencing, Hall marked the road alignment with survey pegs, sitting at a 1m offset from the edge of embankment/cut (both sides).
5. Clearing was intended to be limited to the absolute necessary footprint to allow construction rather than extending to the maximum approved footprint.
6. A pre-clearance flora survey was completed prior to the works by TMR, confirming no ant plants were present within the proposed works area
7. All ant plant locations adjacent to the work area were located and visually marked as well.
8. A pre-clearance fauna survey was completed prior to works commencing.
9. The pegged alignment was meant to be the clearing limit for the works and was communicated as such between the site team.
10. The first stage of works was to clear the banks of the creek and install a temporary crossing. When this activity was complete thick vegetation immediately to the north had to be cleared to provide suitable access to peg the access way.
11. As clearing progressed, the first 30-40m of the northern side had no pegs to mark the road alignment, due to the edge of the alignment being low lying, within the tidal zone in relation to the natural surface.
12. At the time the pegging was completed, high tide water levels prevented access to the adjacent area of the access road.
13. The Project Manager was aware that most of this specific area will be built up and stabilised with rip-rap rock as part of the permanent road works and made the incorrect assumption that the batter of these works would extend to the shoreline and impact the mangrove stands in question. This led to the direction to remove the sparse mangrove stands. This was not cross-checked against the road alignment data or the Environmental Management Plan, which specified the Marine Plant Impact extents

14. The site supervisor and excavator operator were advised that the foreshore line in this area represented the extent of clearing works.
15. From approximately chainage 120m onwards, the northern alignment pegs were in place to guide the clearing works.
16. The clearing outside the approved boundary remained unnoticed until pointed out by a TMR representative following review of works photos at a later date.
17. The additional area cleared amounts to approximately 0.0244ha (244m2)

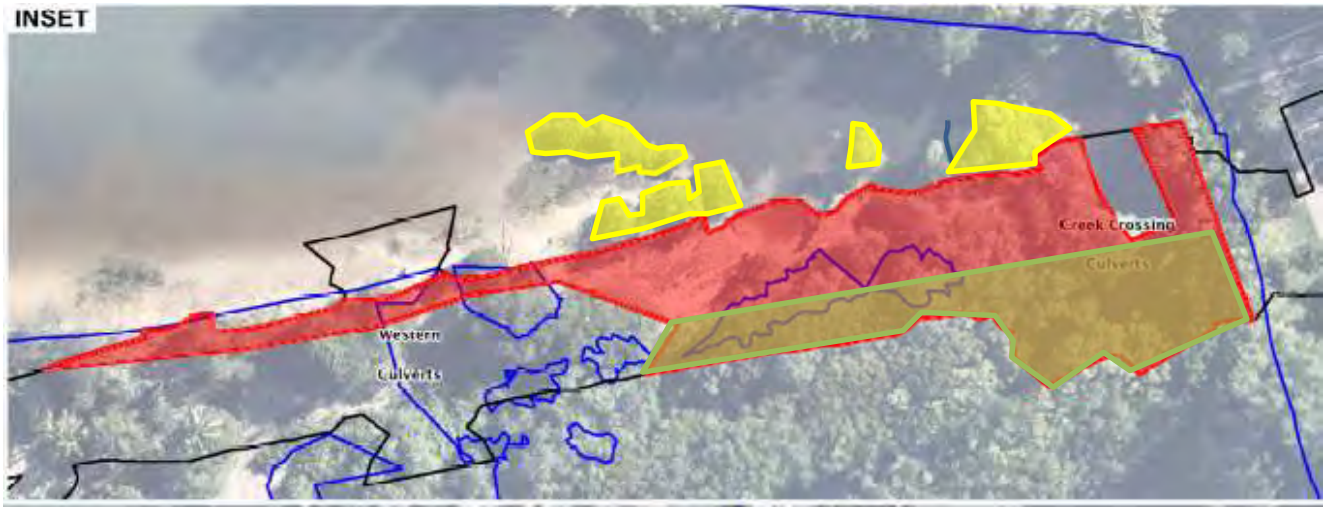
CORRECTIVE ACTION	Supplementary information attached? ☐

Corrective Actions already taken:

18. Non-Compliance discussed within the Project Team
19. Project documents i.e. Management and Approvals reviewed
20. Area inspected to ensure disturbance does not cause erosion or sediment issues (plant roots left in place and natural ground remained undisturbed). A silt curtain was in place at the time however no visual signs of erosion or sediment run off were observed over the following days.

Proposed Corrective Action:

21. The projects overall offset area calculation should remain unchanged due to reduced actual clearing area across the site. The figure below indicates the area not cleared in green. The yellow area indicates the additional clearing which amounts to approximately 0.0244ha (244m2). We propose to provide a comparison image/drawing upon completion of the works to verify the actual offset.



22. Hall will conduct the remaining project to minimise to the greatest extent possible marine plant impacts within the approved footprint, with the objective of keeping the gross marine plant impact area below the approved area to mitigate the impact of this incident. At the conclusion of the project works Hall will capture post works drone image (after all works are completed) and utilise pre-works drone image. Both these images shall be rectified, and the exact areas of marine plant impact will be calculated for the project and compared to the approved impact area.
23. At the conclusion of the project an inspection of the impact area will occur, to assess and document the mangrove recovery in the impact area firstly with a ground inspection and marking of the recovering area with fluoro tape and capture of this area with drone footage. This drone footage will be used to define the area of mangrove recovery.
24. Subject to the above corrective action outcomes above the following remedial actions shall occur:
    a. Action A - In the event corrective action 22 and 23 shows the total marine plant impact area (at the incident site) is less than approved and the approved recovery area is greater than 244m2 then no further rehabilitation actions would be proposed.
    b. Action B - In the event corrective action 23 shows the total marine plant impact area is less than approved and the approved recovery area is less than 244m2 then a program of mangrove planting (including monitoring) is to be implementing to achieve recovery of the 244m2 impact area. Details of the planting and monitoring strategy will be submitted to DAF and DAWE prior to the implementation.
    c. Action C - In the event corrective action 23 shows the net marine plant impact area is greater than that approved area (as a result of the incident) then a minimum of 500m2 (double that impacted) of mangrove recovery rehabilitation in the incident area will be required. This will include promotion of natural colonisation with monitoring and/or a program of mangrove planting and monitoring. Until the objective has been achieved. Details of the planting and monitoring strategy will be submitted to DAF and DAWE prior to the implementation.
25. The outcomes of the Corrective Action investigations and subsequent actions to achieve the desired objectives will be collated in a memo style report that will be submitted to DAF and DAWE

NON-CONFORMANCE REPORT

Measures to prevent reoccurrence:

26. Hall shall review its Environmental Management Plan and all Project Approval Documents as a Project Team Exercise to ensure no misunderstanding of the plan's environmental requirements and associated approval conditions.
27. The action shall be documented via a Minutes of Meeting and a revised Plan if changes are being made.

Report prepared by: [redacted]	**Date:** 03-Mar-2022	**Signature:** [redacted]

Client Response:

Corrective Action Accepted:	☐ **Initial**	
Corrective Action Rejected:	☐ **Initial**	

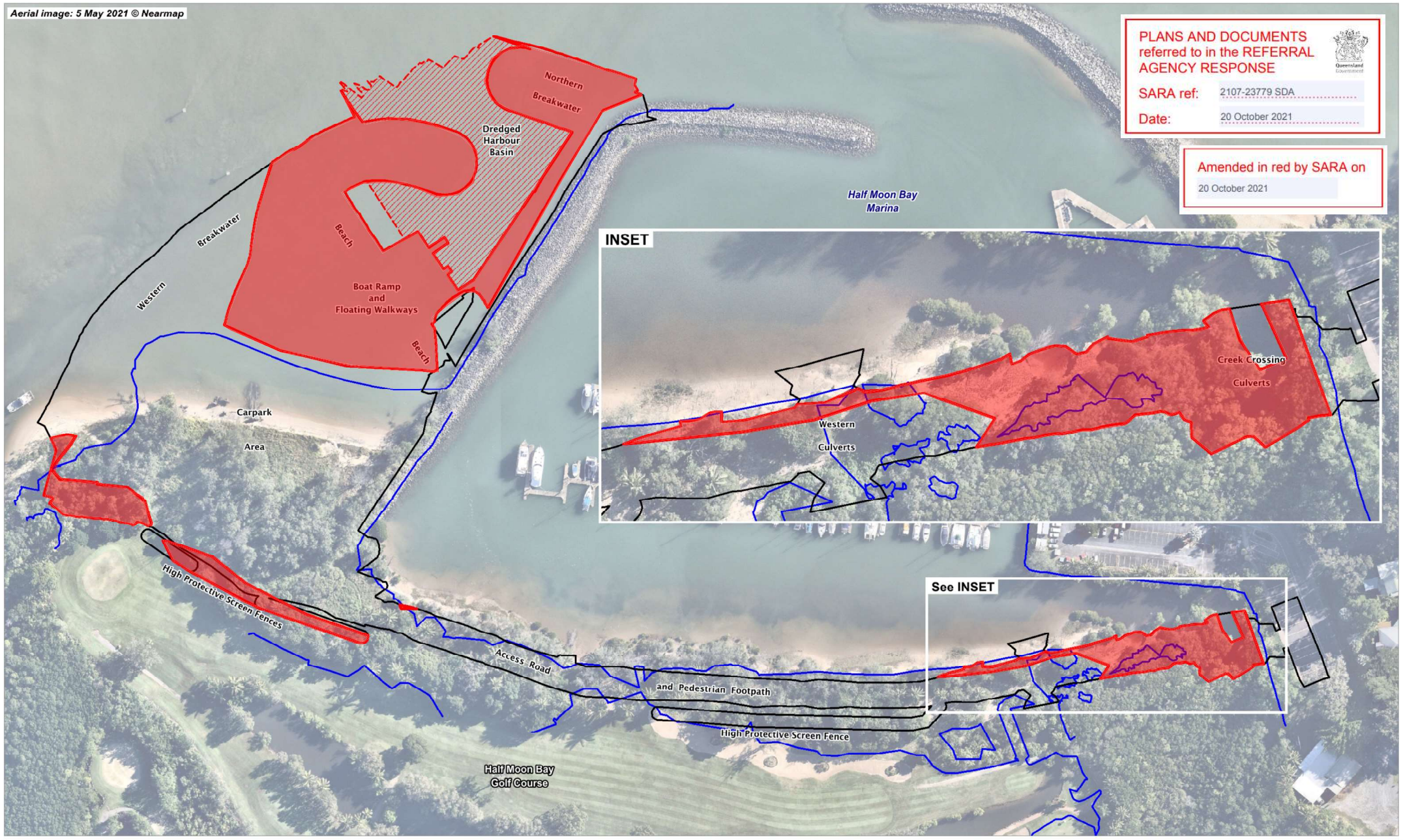
Conditions / Comments:

NCR CLOSE OUT	**Supplementary information attached?** ☐	
Approved Corrective Action Completed:		/ /
	Contractors Representative Sign:	**Date:**
		/ /
	Client's Representative Sign:	**Date:**

Comments:


7 Buckley St Yorkeys Knob QLD
287°W (T) LAT: -16.802915 LON: 145.718318 ±4m ▲ 5m
Mangroves
AMPP
Yorkeys Knob
09 Mar 2022, 08:48:10


7 Buckley St Yorkeys Knob QLD
331°NW (T) LAT: -16.802924 LON: 145.718249 ±4m ▲ 0m
Mangroves
AMPP
Yorkeys Knob
09 Mar 2022, 08:48:38



LEGEND

- Pre-development HAT line
- Proposed development footprint
- Total permanent impact of 1.475 ha
- Temporary impact (periodic dredging) of 0.486 ha

Data source:
Royal HaskoningDHV (8 July 2021)

Title:
Impacts on Marine Plants

Figure: **3-1**

Rev: **G**

BMT endeavours to ensure that the information provided in this map is correct at the time of publication. BMT does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.

N

0 40 80m
Scale - Main Map

0 20 40m
Scale - Inset

BMT
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Filepath: I:\B24067_I_GML_Yorkeys Knob Approval\DRG\ECO_013_210709_Permanent Impacts on Marine Plants_RevG.WOR

Appendix 5 - EPBC 2020-8692 Mangrove Rehabilitation Plan

Yorkeys Knob Boat Ramp
Rehabilitation Plan

December 2023

Report No: TMR23.11.01

Prepared for: Maritime Safety Queensland

Prepared by: Biotropica Australia Pty Ltd

BIOTROPICA AUSTRALIA PTY LTD

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DOCUMENT CONTROL SUMMARY

REPORT AND CLIENT DETAILS

Title:	Yorkeys Knob Boat Ramp - Rehabilitation Plan
Client:	Maritime Safety Queensland
Client Contact:	[redacted]
Status:	Final
Project Manager:	[redacted]
Author/s:	[redacted]

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BIOTROPICA AUSTRALIA PTY LTD

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1.0 INTRODUCTION

As part of construction of the Yorkeys Knob Boat Ramp on Lot CLG-101, a small area of mangrove vegetation adjacent to a storm drain was inadvertently cleared. This action has been documented in Attachment A, as prepared and provided by the construction contractor. Vegetation was cleared in three discrete areas totalling 244m^2, and whilst the composition of the pre-clearing flora is unknown, mangrove vegetation is assumed to have been present over parts of the area.

Biotropica Australia has been commissioned by Maritime Safety Queensland (MSQ), a division of the Qld Dept of Transport and Main Roads (TMR) to prepare a rehabilitation plan (the 'Plan') for the cleared area. This will require active (planting) and passive (natural regeneration) restoration approaches, to achieve appropriate ecological and scenic amenity outcomes. Furthermore, the procurement, propagation and maintenance of the specialised plants required for active restoration at this site also requires adherence to regulations designed to protect mangrove and fish habitat areas.

The aim of this Rehabilitation Plan is to;

- restore mangrove habitat disturbed during works
- create a natural landscape with scenic amenity
- support the development of an ecologically functional and resilient site
- create a low maintenance and self-sustaining landscape
- guide rehabilitation actions.

Moreover, this plan is required to ensure that healthy, resilient native vegetation re-establishes in the area impacted by construction in the shortest possible time.

2.0 SCOPE OF WORKS

Specifically, the Scope of Works for this plan is as follows;

1. Inspect the Yorkeys Knob Boat Ramp works site.
2. Complete a Draft (1) Mangrove Rehabilitation Plan for TMR review.
3. Complete Draft (2) Mangrove Rehabilitation Plan based on any TMR feedback.
4. Finalise Mangrove Rehabilitation Plan following DAF and DEECCW feedback.

A monitoring program is included, to be undertaken by a suitably qualified person that:

Sets out a timeline of monitoring events (every 6 months for the first 2 years, then once per year up to 5 years from the initial rehabilitation works);

1. Reports on the success of the revegetation and the restoration of fish habitats;
2. Identifies any deficiencies in meeting the objectives of the rehabilitation works (including reporting on the cause of those deficiencies);
3. Describes any works undertaken, or needed to be undertaken, to address any deficiencies; and
4. Commits to providing reports of the above information to Department of Agriculture and Fisheries (DAF) (planningassessment@daf.qld.gov.au) within 2 weeks of each monitoring event.

Furthermore, it has been identified that the plan will need to consider the following performance outcome (PO18) from the State Code 12: Development in a declared fish habitat area:

PO18: Marine plants to be used for revegetation purposes have local provenance and are obtained from within a declared fish habitat area only if:

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2. the removal of marine plants will have minimal impact on the declared fish habitat area.

In preparing this plan the following supporting documents and drawings have been used;

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Nomenclature follows Laidlaw (2022).

3.0 MARINE PLANTS

Plants that grow in tidally influenced areas are ‘marine plants’ under Queensland’s *Fisheries Act 1994* and are protected under that Act. Marine plants include:

- any plant (a tidal plant (including marine algae) that usually grows on or adjacent to tidal lands whether it is living, dead, standing or fallen; or
- any plant material on tidal land (up to the level of Highest Astronomical Tide (HAT)).

Marine plants include a variety of different life forms, but in the context of this plan the most relevant plant group are mangroves. Because of their uniquely saline habitat, the propagation and maintenance of most mangroves is problematic; they require specific ground conditions, as reflected in the strong zonation patterns of mangrove distribution. Their production is generally outside commercial nursery practice. As a result, the majority of mangrove restoration in north Queensland has been undertaken using salvaged (translocated) hypocotyls. Around Cairns City, these hypocotyls are sourced from mangrove-lined drains.

Mangrove zonation indicates some species are relatively plastic and occur in two or more zones (e.g., stilt-root mangrove – *Rhizophora spp.*). Because of its ability to tolerate a range of zones between seaward and landward edges, its wide distribution and proven use in mangrove rehabilitation, stilt-root mangrove is often used as the base species for mangrove restoration.

There are a number of mangrove-lined drains within Cairns City, fringed by stilt-root mangrove and several other mangrove species. Cairns Regional Council regularly maintains these drains as part of the Cairns Regional Council Marine Plant Maintenance Strategy (CRC MPMS). The CRC MPMS categorises zones within each marine plant area which dictates the type of maintenance that can occur. In areas defined as 'marine plant free', marine plants are able to be removed during maintenance activities (refer Figure 1) below.

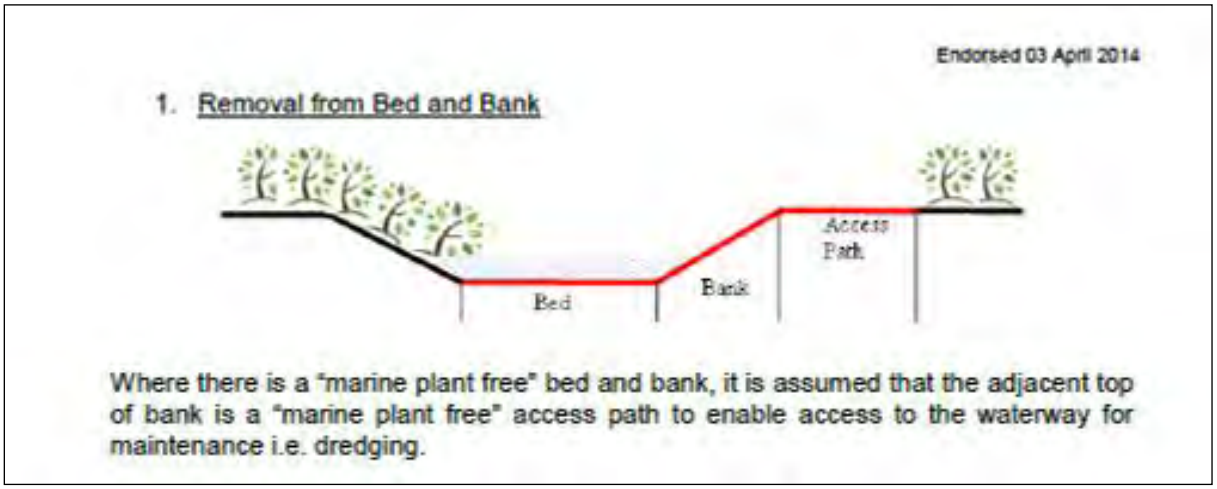

Figure 1: Excerpt from the CRC MPMS.

As the restoration at the Yorkeys Knob site will entail the re-planting of areas that support mangrove only vegetation, it is essential that mangrove seedling salvage sites are monitored to ensure seedlings are at the optimum size for salvage at planting time. Proposed salvage intends to conserve marine plants that would otherwise be destroyed during routine drainage maintenance.

4.0 SITE DESCRIPTION

An experienced restoration ecologist visited the site at low tide in early December, 2023 and assessed the likely restoration needs based on an assessment of the vegetation present, and optimal rehabilitation management. Variations in tidal influence require recognition in the planning and establishment of rehabilitation plantings. Substrate and the degree of tidal influence indicates there are two vegetation communities that will require rehabilitation, as follows;

1. Littoral/strand vegetation (not inundated, sand soil)
2. Mangroves (saline inundation, on sand/mud soils respectively)

Existing site vegetation is sparse, comprising a small stand of black mangrove (*Lumnitzera racemosa*) (to 0.75m) in the areas of high tide, with marine couch (*Sporobolus virginicus*) and pigweed (*Portulaca pilosa**) at ground level. At the low tide mark, regeneration of stilt-root mangrove (*Rhizophora spp.*) (to 0.75m) is underway. On the opposite (northern) side of the drain mangrove vegetation contains only two mangrove species – grey mangrove (*Avicennia marina*) and a stilt-root mangrove (*Rhizophora stylosa*). This mangrove vegetation (association) is likely to conform to the Closed Rhizophora / Avicennia association of Bruinsma (2001).

As noted, there are two discrete areas (A and B) requiring treatment (see Table 1. Plate 1). Area A encompasses two vegetation communities. Littoral vegetation would naturally occur on the upper portions of Area A, including the mulched and upper bare areas shown in Plate 1. This image shows mature beach she-oak (*Casuarina equisetifolia*) in the background and the same species planted in the foreground. As noted, pre-clearance vegetation is unknown, however littoral vegetation, of which beach she-oak is typical, would likely have extended to the area where tidal influence is minimal (as evidenced by the appearance of beach she-oak above tidal influence on Plate 1). Stands of black mangrove occur directly below the mature beach she-oak at the high tide mark, clearly indicating the influence of tidal inundation and the two ecological niches present. Accordingly, all the area above the stand of black mangrove in Area A will require replanting with littoral/strand species.

Plate 2 shows Area A in greater detail. Marine couch is more common in the tidally influenced area, becoming sparser as this influence diminishes. Black mangrove lines the high tide mark; regenerating stilt-root mangrove follows the low tide line, emphasising its tolerance of increased inundation. It is likely that stilt-root mangrove formerly extended from the low to high-water mark. Accordingly, stilt-root mangrove will require re-establishment across all the area between the low and high-water mark of Area A.

Plate 1: Littoral/strand zone vegetation in Area A.

Plate 2: Area A, showing gradation of tidal inundation and vegetation responses.

Area B contains the remainder of the site and consists of a narrow band of mud soil flanked by rip-rap (see Plate 3). Mud soils and tidal inundation indicate that mangroves only would have been present in this area. Occasional individuals of stilt-root mangrove only are regenerating, confirming the area will support mangroves and stilt-root mangroves are ecologically adapted to the tidal variation visible in Plate 2.

Table 1 below indicates the extent of each plant community in the two areas, and the establishment methodology for each. A total of 346m^2 is identified as requiring rehabilitation[1].

Table 1: Area descriptions

Area	Extent	Plant Community to be restored	Method
A	160m2	Littoral/strand	Seedlings
A	100m2	Mangrove	Hypocotyls
B	86m2	Mangrove	Hypocotyls

[1.] Previous assessment identified 244m^2 and 310m^2 as requiring rehabilitation. An extra 36m^2 was identified in this report, most likely a result of the extra area of littoral/strand vegetation identified as requiring rehabilitation.

Plate 3: Area B showing mud soil with some regeneration of stilt-root mangrove.

5.0 RESTORATION PRESCRIPTIONS

5.1 Final Landform

Whilst the final landform is in place, it should be noted that some rock remains in the upper (littoral) portion of Area A and this may make plant establishment problematic. Natural regeneration (passive restoration) and re-planting (active restoration) will both be used to recover site vegetation.

5.2 Mangroves

Natural regeneration will be relied upon to restore full mangrove diversity. A diversity of mature mangrove vegetation is present in the surrounding area, including species capable of rapidly colonising available niches. This regeneration will be hastened by a one-off supplementary planting of stilt-root mangrove hypocotyls, in all mangrove-dominated parts of the site. Council's existing MPMS authorises this use of salvaged hypocotyls.

It is not possible to specify a particular site for salvage purposes until the actual date of planting is known. However, surveys for potentially salvageable seedlings should be completed when a planting date is known, to ensure they are available at the desired time. Stilt-root mangrove hypocotyls are generally available from mid-late January through to early-March. It is preferable to establish hypocotyls within seven days of collection. If planting is delayed, hypocotyls should be kept moist and in an upright position.

Because mangrove salvage is more successfully completed in overcast / wet conditions, the wet season (December-April) is the recommended period for restoration works and this naturally coincides with hypocotyl availability.

5.3 Littoral/Strand areas

In the upper portion of Area A, active restoration will be used to achieve a more rapid vegetation cover, concentrating on re-planting a range of littoral/strand species with higher ecological and / or aesthetic value. Plantings will be on dense spacings (i.e., 1.5m) to ensure rapid site capture and soil cover. Planting seedlings during the wet season maximises establishment success and reduces the need for irrigation infrastructure.

All stems for re-planting non-mangrove sites should meet the following specifications:

- Sun-hardened for a minimum of six weeks prior to planting
- Between 250mm and 400mm high
- Be weed free and root pruned
- Healthy, with no signs of insect / pathogen damage
- Covered delivery with no wind-burn

Many of the species recommended for re-planting are available through the Cairns Regional Council in Stratford and the Nursery Manager should be consulted regarding availability. Timing of delivery should be considered when sourcing the plant stock for this project.

6.0 SITE PRESCRIPTIONS

6.1 Littoral/Strand – Area A

Around 160m^2 of this community will require active restoration and plantings should commence adjacent to the existing mulched margin (see Plate 1). Planting of ca.45 trees and shrubs at random 1.5m x 1.5m spacings will be done during suitable weather conditions. For each planted stem, a slow-release fertiliser tablet (e.g., Agriform) will be provided at planting, along with the recommended quantity of water crystals to preserve soil moisture. All stems should be provided with 10l of water at planting, with follow-up watering during any extended dry period.

Species for replanting will be selected from Table 2 below. Equal number of trees and shrubs should be planted and no single species should comprise more than 10% of the total planted. All seedlings established in the littoral portion of Area A should be mulched to a depth of 150mm, abutting the existing mulch layer (see Plate 1).

Once planted the area should be maintained for a 12-month period, with weeds being excluded at all times. This may be achieved through careful use of herbicide or by mulching.

Table 2: Littoral/strand species list – Area A

Species	Common Name	Life Form
Acacia flavescens	Red wattle	Shrub
Acacia crassicarpa	Spoon wattle	Tree
Acacia oraria	Beach wattle	Tree
Casuarina equisetifolia	Beach she-oak	Tree
Clerodendrum inerme	Witch's tongue	Shrub
Cupaniopsis anacardioides	Tuckeroo	Tree
Dillenia alata	Red beech	Tree
Lithomyrtus obtusa	Beach myrtella	Shrub
Melaleuca leucadendra	Narrow-leaf paperbark	Tree
Mimusops elengi	Red coondoo	Tree
Terminalia catappa	Beach almond	Tree
Terminalia muelleri	Mueller's damson	Tree

6.2 Mangrove – Area A

Around 100m^2 of this community will require re-planting in Area A. Stilt-root mangrove hypocotyls will be established at 1m x 1m spaces. For each seed, a slow-release fertiliser tablet (e.g., Agriform) will be provided at planting. A total of ca.100 individual seeds will be required for this portion. Planting should extend from the low water mark (where natural regeneration is underway) upslope to the existing black mangroves, and to the high-water mark elsewhere.

6.3 Mangrove - Area B

As noted, natural regeneration will be relied upon to recover the mangrove-dominated Area B and will be accelerated by planting stilt-root mangrove hypocotyls during a low-tide. Mangrove hypocotyls will be established on 1m x 1m spacings. A fertiliser tablet should be provided to each stem at planting. An area of ca.90m^2 will require rehabilitation, so a minimum of 90 hypocotyls will be required. This is a one-off planting that is intended to provide a framework around which natural regeneration can be hastened. No supplementary planting would be required.

No maintenance should be required in mangrove-dominated areas. Providing the original profile is in place, it would be expected that mangrove-dominated areas would be re-colonised by a range of species in 3-5year period.

7.0 PLANTING SUMMARY

Table 3 below summarises planting requirements.

Table 3: Area descriptions

Area	Extent	Community	Method	Numbers required
A (upper)	160m2	Littoral/strand	Seedlings	45
A (lower)	100m2	Mangrove	Hypocotyls	100
B	86m2	Mangrove	Hypocotyls	90

8.0 MONITORING

Monitoring will be carried out for the first 12 months and be conducted during maintenance visits. The monitoring schedule will be fortnightly visits for two months, with monthly visits for the remaining 10 months.

Photo-points can be an effective tool to measure site recovery, in addition to the regular collection of data listed below. Photo-points should be 10m from the edge of a re-planting area, be taken at a consistent time of day during each monitoring visit, and include a frame in each directional aspect (N, S, E, W).

During each monitoring visit the following will be recorded:

- photos from established photo-points at each site;
- % survival;
- average height of planted stems;
- any issues relating to plant health;
- management actions to maintain the site; and
- the progress of the project.

To comply with the requirements detailed in the CRC MPMS, a post-salvage advice sheet will be submitted to the DAF within 10 days of salvage.

9.0 TIMING OF WORKS

Table 3 below summarises the timing for all works relevant to this plan.

Table 4: Timing of works

Action	Timing	Description
Order plant stock	Immediately	Grow-to-order required. Provide plant specifications as per S.5.3
Submit notification to DAF	A minimum of 30 days prior to works commencing is recommended	To ensure works can be completed once the wet season rains appear, it is recommended notification be submitted as soon as the salvage period is known.
Confirm mangrove salvage	A minimum of two weeks before works commence	Salvage can only occur within 'marine plant free' zones highlighted in the CRC MPMS. Ensure salvaging locations are agreed upon with responsible CRC personnel.
Collect mangrove hypocotyls from channels	No more than 7days prior to planting	Notify DAF at least one day prior to salvage.
Submit post-works advice sheet to DAF	Within 10 days of mangrove plantings	A requirement of works under the CRC MPMS is to submit the advice sheet post works.
Planting	Upon commencement of wet season rains	Planting should be done when soil moisture is adequate. Plants should be watered-in on day of planting with 10l to each stem. Mulch vine forest plantings only.
Water	Two weeks after planting	Watering of littoral/strand species will be conducted 2 weeks after planting and thereafter on an 'as needs' basis. However, as planting is to be correlated with wet season rainfall, soil moisture levels should be adequate for establishment.
Apply fertiliser	All stems should be fertilised at planting	Use a fertiliser tablet at planting, and top-dress non-mangrove stems with a general fertiliser around the base if required.
Maintenance	For a total of 12 months: Fortnightly for 2 months after planting; Monthly thereafter for the remaining 10 months	Weeds should not be permitted to become reproductive. Replace dead non-mangrove stems within 30 days. Provide extra fertiliser and water in non-mangrove areas as/when required.
Monitoring	Every 6 months for the first 2 years, then once per year up to 5 years from the initial restoration works	Establish photo-points at key locations at each end of Area A and Area B. Other data as per S.7.0 above
Reporting	To DAF (planningassessment@daf.qld.gov.au) within 2 weeks of each monitoring event	Report should detail plant survival, growth, management actions including weed control, fertilising and other plant protection actions.

10.0 REFERENCES

Laidlaw, MJ. 2022. Census of the Queensland flora and fungi 2022: Vascular Plants (Print). Queensland Department of Environment and Science, Queensland Government.

Bruinsma, C. 2001. *Queensland Coastal Resources: Cape Tribulation to Bowling Green Bay*. Information Series Q101064. Brisbane: Department of Primary Industries and Science.

ATTACHMENT A

Appendix 6 - EPBC 2020-8692 Email providing Mangrove Rehabilitation Plan

[redacted]

From: [redacted]
Sent: Wednesday, 31 January 2024 3:19 PM
To: 'Post Approval'; 'EPBC Monitoring'
Cc: [redacted]
Subject: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Mangrove Rehabilitation Plan
Attachments: 2020_8692 - Letter - 220715 - Non-compliant close out warning letter .pdf; RE: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Notification of non-conformance [SEC=OFFICIAL]; YORK-NCR-001 Clearing Non-Conformance_030322.pdf; TMR23.11.01 - Yorkeys Knob Boat Ramp_Rehabilitation Plan_Final.pdf

Hi [redacted]

Even though this information will be included in our annual report for this project, in accordance with previous correspondence please find attach FYI our **mangrove rehabilitation plan** which we will be implementing in the coming weeks as agreed following the minor mangrove clearing non-conformance in early 2022. In accordance with our submitted rehab strategy the project was successful in limiting overall clearing to less (in area) than was originally approved (even with the non-conformance), with the post project assessment requiring implementation of **Action B** in the attached rectification strategy YORK-NCR-001. On this basis **Action B** is the basis of the attached rehab plan which includes replanting of the non-conformance impact area. The consultant developing the plan recommended replanting an area of 346m2 of mangroves to suitably rehabilitate the non-conformance impact area, which was slightly greater than the actual impact area.

If you have any questions please let me know, our annual compliance report will include all details but just wanted to provide a copy of the plan to you

Kind Regards

[redacted]

[redacted]
Maritime Safety Queensland Branch | Customer Services, Safety and Regulation Division
Department of Transport and Main Roads

P: [redacted]
Floor 4 | 61 Mary Street | Brisbane Qld 4000
GPO Box 2595 | Brisbane Qld 4001
[redacted]
www.msq.qld.gov.au
www.tmr.qld.gov.au

The Department of Transport and Main Roads acknowledges the Traditional Owners and Custodians of this
We also acknowledge their ancestors and Elders both past and present.
The Department of Transport and Main Roads is committed to reconciliation among all Australians.

Yorkeys Knob Boat Ramp
Rehabilitation Plan

December 2023

Report No: TMR23.11.01

Prepared for: Maritime Safety Queensland

Prepared by: Biotropica Australia Pty Ltd

BIOTROPICA AUSTRALIA PTY LTD

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DOCUMENT CONTROL SUMMARY

REPORT AND CLIENT DETAILS

Title:	Yorkeys Knob Boat Ramp - Rehabilitation Plan
Client:	Maritime Safety Queensland
Client Contact:	[redacted]
Status:	Final
Project Manager:	[redacted]
Author/s:	[redacted]

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A	*12/12/2023*	*TM*	√	*NT*	√	*1*	*0*	*1*
Final	*18/12/2023*	*TM*	√	*NT*	√	*1*	*0*	*1*

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Plants that grow in tidally influenced areas are ‘marine plants’ under Queensland’s *Fisheries Act 1994* and are protected under that Act. Marine plants include:

- any plant (a tidal plant (including marine algae) that usually grows on or adjacent to tidal lands whether it is living, dead, standing or fallen; or
- any plant material on tidal land (up to the level of Highest Astronomical Tide (HAT)).

Marine plants include a variety of different life forms, but in the context of this plan the most relevant plant group are mangroves. Because of their uniquely saline habitat, the propagation and maintenance of most mangroves is problematic; they require specific ground conditions, as reflected in the strong zonation patterns of mangrove distribution. Their production is generally outside commercial nursery practice. As a result, the majority of mangrove restoration in north Queensland has been undertaken using salvaged (translocated) hypocotyls. Around Cairns City, these hypocotyls are sourced from mangrove-lined drains.

Mangrove zonation indicates some species are relatively plastic and occur in two or more zones (e.g., stilt-root mangrove – *Rhizophora spp.*). Because of its ability to tolerate a range of zones between seaward and landward edges, its wide distribution and proven use in mangrove rehabilitation, stilt-root mangrove is often used as the base species for mangrove restoration.

There are a number of mangrove-lined drains within Cairns City, fringed by stilt-root mangrove and several other mangrove species. Cairns Regional Council regularly maintains these drains as part of the Cairns Regional Council Marine Plant Maintenance Strategy (CRC MPMS). The CRC MPMS categorises zones within each marine plant area which dictates the type of maintenance that can occur. In areas defined as 'marine plant free', marine plants are able to be removed during maintenance activities (refer Figure 1) below.

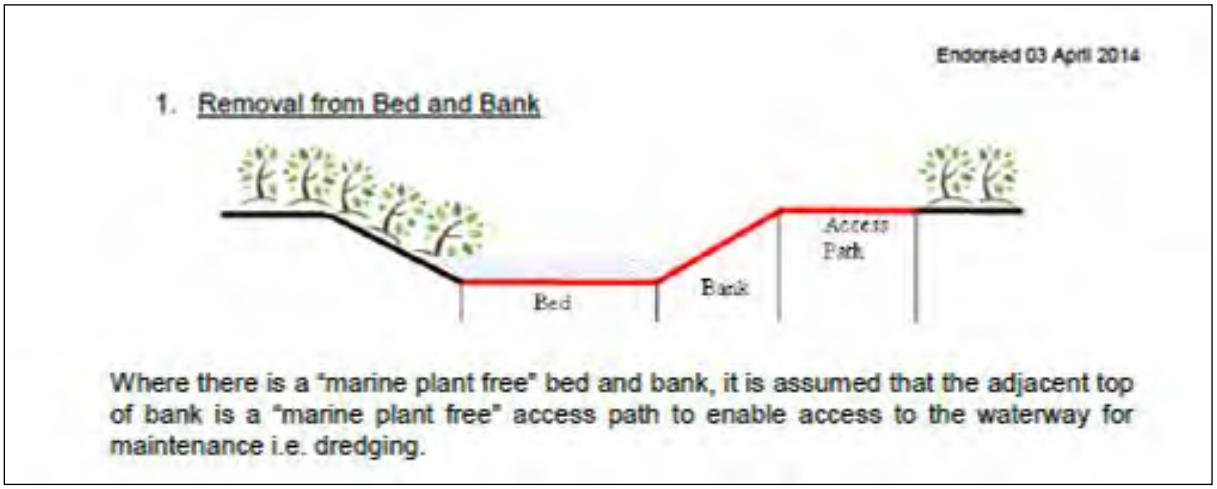

Figure 1: Excerpt from the CRC MPMS.

As the restoration at the Yorkeys Knob site will entail the re-planting of areas that support mangrove only vegetation, it is essential that mangrove seedling salvage sites are monitored to ensure seedlings are at the optimum size for salvage at planting time. Proposed salvage intends to conserve marine plants that would otherwise be destroyed during routine drainage maintenance.

4.0 SITE DESCRIPTION

An experienced restoration ecologist visited the site at low tide in early December, 2023 and assessed the likely restoration needs based on an assessment of the vegetation present, and optimal rehabilitation management. Variations in tidal influence require recognition in the planning and establishment of rehabilitation plantings. Substrate and the degree of tidal influence indicates there are two vegetation communities that will require rehabilitation, as follows;

1. Littoral/strand vegetation (not inundated, sand soil)
2. Mangroves (saline inundation, on sand/mud soils respectively)

Existing site vegetation is sparse, comprising a small stand of black mangrove (*Lumnitzera racemosa*) (to 0.75m) in the areas of high tide, with marine couch (*Sporobolus virginicus*) and pigweed (*Portulaca pilosa**) at ground level. At the low tide mark, regeneration of stilt-root mangrove (*Rhizophora spp.*) (to 0.75m) is underway. On the opposite (northern) side of the drain mangrove vegetation contains only two mangrove species – grey mangrove (*Avicennia marina*) and a stilt-root mangrove (*Rhizophora stylosa*). This mangrove vegetation (association) is likely to conform to the Closed Rhizophora / Avicennia association of Bruinsma (2001).

As noted, there are two discrete areas (A and B) requiring treatment (see Table 1. Plate 1). Area A encompasses two vegetation communities. Littoral vegetation would naturally occur on the upper portions of Area A, including the mulched and upper bare areas shown in Plate 1. This image shows mature beach she-oak (*Casuarina equisetifolia*) in the background and the same species planted in the foreground. As noted, pre-clearance vegetation is unknown, however littoral vegetation, of which beach she-oak is typical, would likely have extended to the area where tidal influence is minimal (as evidenced by the appearance of beach she-oak above tidal influence on Plate 1). Stands of black mangrove occur directly below the mature beach she-oak at the high tide mark, clearly indicating the influence of tidal inundation and the two ecological niches present. Accordingly, all the area above the stand of black mangrove in Area A will require replanting with littoral/strand species.

Plate 2 shows Area A in greater detail. Marine couch is more common in the tidally influenced area, becoming sparser as this influence diminishes. Black mangrove lines the high tide mark; regenerating stilt-root mangrove follows the low tide line, emphasising its tolerance of increased inundation. It is likely that stilt-root mangrove formerly extended from the low to high-water mark. Accordingly, stilt-root mangrove will require re-establishment across all the area between the low and high-water mark of Area A.

Plate 1: Littoral/strand zone vegetation in Area A.

Plate 2: Area A, showing gradation of tidal inundation and vegetation responses.

Area B contains the remainder of the site and consists of a narrow band of mud soil flanked by rip-rap (see Plate 3). Mud soils and tidal inundation indicate that mangroves only would have been present in this area. Occasional individuals of stilt-root mangrove only are regenerating, confirming the area will support mangroves and stilt-root mangroves are ecologically adapted to the tidal variation visible in Plate 2.

Table 1 below indicates the extent of each plant community in the two areas, and the establishment methodology for each. A total of 346m^2 is identified as requiring rehabilitation[1].

Table 1: Area descriptions

Area	Extent	Plant Community to be restored	Method
A	160m2	Littoral/strand	Seedlings
A	100m2	Mangrove	Hypocotyls
B	86m2	Mangrove	Hypocotyls

[1.] Previous assessment identified 244m^2 and 310m^2 as requiring rehabilitation. An extra 36m^2 was identified in this report, most likely a result of the extra area of littoral/strand vegetation identified as requiring rehabilitation.

Plate 3: Area B showing mud soil with some regeneration of stilt-root mangrove.

5.0 RESTORATION PRESCRIPTIONS

5.1 Final Landform

Whilst the final landform is in place, it should be noted that some rock remains in the upper (littoral) portion of Area A and this may make plant establishment problematic. Natural regeneration (passive restoration) and re-planting (active restoration) will both be used to recover site vegetation.

5.2 Mangroves

Natural regeneration will be relied upon to restore full mangrove diversity. A diversity of mature mangrove vegetation is present in the surrounding area, including species capable of rapidly colonising available niches. This regeneration will be hastened by a one-off supplementary planting of stilt-root mangrove hypocotyls, in all mangrove-dominated parts of the site. Council's existing MPMS authorises this use of salvaged hypocotyls.

It is not possible to specify a particular site for salvage purposes until the actual date of planting is known. However, surveys for potentially salvageable seedlings should be completed when a planting date is known, to ensure they are available at the desired time. Stilt-root mangrove hypocotyls are generally available from mid-late January through to early-March. It is preferable to establish hypocotyls within seven days of collection. If planting is delayed, hypocotyls should be kept moist and in an upright position.

Because mangrove salvage is more successfully completed in overcast / wet conditions, the wet season (December-April) is the recommended period for restoration works and this naturally coincides with hypocotyl availability.

5.3 Littoral/Strand areas

In the upper portion of Area A, active restoration will be used to achieve a more rapid vegetation cover, concentrating on re-planting a range of littoral/strand species with higher ecological and / or aesthetic value. Plantings will be on dense spacings (i.e., 1.5m) to ensure rapid site capture and soil cover. Planting seedlings during the wet season maximises establishment success and reduces the need for irrigation infrastructure.

All stems for re-planting non-mangrove sites should meet the following specifications:

- Sun-hardened for a minimum of six weeks prior to planting
- Between 250mm and 400mm high
- Be weed free and root pruned
- Healthy, with no signs of insect / pathogen damage
- Covered delivery with no wind-burn

Many of the species recommended for re-planting are available through the Cairns Regional Council in Stratford and the Nursery Manager should be consulted regarding availability. Timing of delivery should be considered when sourcing the plant stock for this project.

6.0 SITE PRESCRIPTIONS

6.1 Littoral/Strand – Area A

Around 160m^2 of this community will require active restoration and plantings should commence adjacent to the existing mulched margin (see Plate 1). Planting of ca.45 trees and shrubs at random 1.5m x 1.5m spacings will be done during suitable weather conditions. For each planted stem, a slow-release fertiliser tablet (e.g., Agriform) will be provided at planting, along with the recommended quantity of water crystals to preserve soil moisture. All stems should be provided with 10l of water at planting, with follow-up watering during any extended dry period.

Species for replanting will be selected from Table 2 below. Equal number of trees and shrubs should be planted and no single species should comprise more than 10% of the total planted. All seedlings established in the littoral portion of Area A should be mulched to a depth of 150mm, abutting the existing mulch layer (see Plate 1).

Once planted the area should be maintained for a 12-month period, with weeds being excluded at all times. This may be achieved through careful use of herbicide or by mulching.

Table 2: Littoral/strand species list – Area A

Species	Common Name	Life Form
Acacia flavescens	Red wattle	Shrub
Acacia crassicarpa	Spoon wattle	Tree
Acacia oraria	Beach wattle	Tree
Casuarina equisetifolia	Beach she-oak	Tree
Clerodendrum inerme	Witch's tongue	Shrub
Cupaniopsis anacardioides	Tuckeroo	Tree
Dillenia alata	Red beech	Tree
Lithomyrtus obtusa	Beach myrtella	Shrub
Melaleuca leucadendra	Narrow-leaf paperbark	Tree
Mimusops elengi	Red coondoo	Tree
Terminalia catappa	Beach almond	Tree
Terminalia muelleri	Mueller's damson	Tree

6.2 Mangrove – Area A

Around 100m^2 of this community will require re-planting in Area A. Stilt-root mangrove hypocotyls will be established at 1m x 1m spaces. For each seed, a slow-release fertiliser tablet (e.g., Agriform) will be provided at planting. A total of ca.100 individual seeds will be required for this portion. Planting should extend from the low water mark (where natural regeneration is underway) upslope to the existing black mangroves, and to the high-water mark elsewhere.

6.3 Mangrove - Area B

As noted, natural regeneration will be relied upon to recover the mangrove-dominated Area B and will be accelerated by planting stilt-root mangrove hypocotyls during a low-tide. Mangrove hypocotyls will be established on 1m x 1m spacings. A fertiliser tablet should be provided to each stem at planting. An area of ca.90m^2 will require rehabilitation, so a minimum of 90 hypocotyls will be required. This is a one-off planting that is intended to provide a framework around which natural regeneration can be hastened. No supplementary planting would be required.

No maintenance should be required in mangrove-dominated areas. Providing the original profile is in place, it would be expected that mangrove-dominated areas would be re-colonised by a range of species in 3-5year period.

7.0 PLANTING SUMMARY

Table 3 below summarises planting requirements.

Table 3: Area descriptions

Area	Extent	Community	Method	Numbers required
A (upper)	160m2	Littoral/strand	Seedlings	45
A (lower)	100m2	Mangrove	Hypocotyls	100
B	86m2	Mangrove	Hypocotyls	90

8.0 MONITORING

Monitoring will be carried out for the first 12 months and be conducted during maintenance visits. The monitoring schedule will be fortnightly visits for two months, with monthly visits for the remaining 10 months.

Photo-points can be an effective tool to measure site recovery, in addition to the regular collection of data listed below. Photo-points should be 10m from the edge of a re-planting area, be taken at a consistent time of day during each monitoring visit, and include a frame in each directional aspect (N, S, E, W).

During each monitoring visit the following will be recorded:

- photos from established photo-points at each site;
- % survival;
- average height of planted stems;
- any issues relating to plant health;
- management actions to maintain the site; and
- the progress of the project.

To comply with the requirements detailed in the CRC MPMS, a post-salvage advice sheet will be submitted to the DAF within 10 days of salvage.

9.0 TIMING OF WORKS

Table 3 below summarises the timing for all works relevant to this plan.

Table 4: Timing of works

Action	Timing	Description
Order plant stock	Immediately	Grow-to-order required. Provide plant specifications as per S.5.3
Submit notification to DAF	A minimum of 30 days prior to works commencing is recommended	To ensure works can be completed once the wet season rains appear, it is recommended notification be submitted as soon as the salvage period is known.
Confirm mangrove salvage	A minimum of two weeks before works commence	Salvage can only occur within 'marine plant free' zones highlighted in the CRC MPMS. Ensure salvaging locations are agreed upon with responsible CRC personnel.
Collect mangrove hypocotyls from channels	No more than 7days prior to planting	Notify DAF at least one day prior to salvage.
Submit post-works advice sheet to DAF	Within 10 days of mangrove plantings	A requirement of works under the CRC MPMS is to submit the advice sheet post works.
Planting	Upon commencement of wet season rains	Planting should be done when soil moisture is adequate. Plants should be watered-in on day of planting with 10l to each stem. Mulch vine forest plantings only.
Water	Two weeks after planting	Watering of littoral/strand species will be conducted 2 weeks after planting and thereafter on an 'as needs' basis. However, as planting is to be correlated with wet season rainfall, soil moisture levels should be adequate for establishment.
Apply fertiliser	All stems should be fertilised at planting	Use a fertiliser tablet at planting, and top-dress non-mangrove stems with a general fertiliser around the base if required.
Maintenance	For a total of 12 months: Fortnightly for 2 months after planting; Monthly thereafter for the remaining 10 months	Weeds should not be permitted to become reproductive. Replace dead non-mangrove stems within 30 days. Provide extra fertiliser and water in non-mangrove areas as/when required.
Monitoring	Every 6 months for the first 2 years, then once per year up to 5 years from the initial restoration works	Establish photo-points at key locations at each end of Area A and Area B. Other data as per S.7.0 above
Reporting	To DAF (planningassessment@daf.qld.gov.au) within 2 weeks of each monitoring event	Report should detail plant survival, growth, management actions including weed control, fertilising and other plant protection actions.

10.0 REFERENCES

Laidlaw, MJ. 2022. Census of the Queensland flora and fungi 2022: Vascular Plants (Print). Queensland Department of Environment and Science, Queensland Government.

Bruinsma, C. 2001. *Queensland Coastal Resources: Cape Tribulation to Bowling Green Bay*. Information Series Q101064. Brisbane: Department of Primary Industries and Science.

ATTACHMENT A

From: [redacted]
Sent: Friday, 4 March 2022 5:32 PM
To: [redacted]
Cc: [redacted]
Subject: RE: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Notification of non-conformance

Hi [redacted]

I regret to inform you that our contractor has in error undertaken works including the removal of a small number of shoreline mangrove trees that are outside of the specified impact footprint. See indicative image below with vegetation in question marked in yellow.

In accordance with condition 16 I wish to notify the following;

(a) This action represents a non-conformance of permit condition 2 "The approval holder must not **clear** outside the **project area** as part of the action."
(b) TMR is waiting on a report from our contractor to gain specific details, however it would appear the EMP processes to demarcate the clearing area for general vegetation were not followed in full and/or communications with the excavator operator were not clear. This has resulted in a two small areas of mangroves being cleared in a narrow area between the creek and the access road, which were outside the proposed impact footprint.
(c) This incident was identified following TMR review of drone images of the works site on the 3/3/2022, the location is 16deg 48'10.51"S , 145deg 43'5.27"E

Once TMR gains the incident and rectification report I will provide this to DAWE as per condition 17.

Please note that this incident is also a non-compliance of our state approvals administered by the Department of Agriculture and Fisheries(DAF) regarding the removal/damage to marine plants. For this reason we have also notified DAF and will be consulting with DAF regarding proposed rehabilitation works in addition to yourselves.

In reporting this incident I wish to advise DAWE that this incident was remote from the ant plants previously identified adjacent the works site. As per our preclearance survey no ant plants were identified in the works area and the ant plants identified adjacent were demarcated with a suitable buffer zone and will remain so for the duration of the project.

Once I have more information I will provide it and then discuss further the proposed rehabilitation works.

Kind Regards

[redacted]

Maritime Safety Queensland
Department of Transport and Main Roads

Floor 4 | 61 Mary Street | Brisbane City Qld 4000
GPO Box 1549 | Brisbane City Qld 4001
P: [redacted]

E: [redacted]
W: www.tmr.qld.gov.au

From: [redacted]
Sent: Wednesday, 23 February 2022 2:25 PM
To: [redacted]
Subject: RE: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Commencement Notification [SEC=OFFICIAL]

Dear [redacted]

I apologise for the delay in getting back to you. Please see attached a letter in relation to your notification of commencement for EPBC 2020/8692.

For any further questions please do not hesitate to contact the EPBC Monitoring Mailbox.

Kind regards,

[redacted]
Environment Compliance Branch
Compliance Division
Department of Agriculture, Water and the Environment
GPO Box 858, CANBERRA ACT 2601

From: [redacted]
Sent: Wednesday, 9 February 2022 10:14 AM
To: [redacted]
Subject: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Commencement Notification

Hi [redacted]

In accordance with condition 9 of EPBC 2020/8692, The State of Queensland Acting from the Department of Transport and Main Roads wishes to notify DAWE that construction works commenced via a possession of site being granted to our contractor on 2 February 2022.

Please let me know if you require any further information, it is expected that the construction works will take approximately 12 months.

Kind Regards
[redacted]

[redacted]
Maritime Safety Queensland
Department of Transport and Main Roads

Floor 4 | 61 Mary Street | Brisbane City Qld 4000
GPO Box 1549 | Brisbane City Qld 4001
P: [redacted]
W: www.tmr.qld.gov.au

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It is your responsibility to ensure that this email does not contain and is not affected by computer viruses, defects or interference by third parties or replication problems (including incompatibility with your computer system).

Opinions contained in this email do not necessarily reflect the opinions of the Department of Transport and Main Roads, or endorsed organisations utilising the same infrastructure.

[redacted]

From: [redacted]
Sent: Friday, 11 March 2022 8:31 AM
To: EPBC Monitoring
Cc: [redacted]
Subject: RE: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Notification of non-conformance [SEC=OFFICIAL]
Attachments: YORK-NCR-001 Clearing Non-Conformance_030322.pdf

Hi [redacted]

In accordance with condition 17 of permit EPBC 2020/8692 Please find attached the Non-Conformance Report, from our contractor for the non-conformance incident notified 4 March 2022.

Once you have reviewed I am happy to discuss and provide any further information required.

Kind Regards
[redacted]

[redacted]
Maritime Safety Queensland
Department of Transport and Main Roads

Floor 4 | 61 Mary Street | Brisbane City Qld 4000
GPO Box 1549 | Brisbane City Qld 4001
P: [redacted]
E: [redacted]
W: www.tmr.qld.gov.au

From: [redacted]
Sent: Monday, 7 March 2022 8:08 AM
To: [redacted]
Subject: RE: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Notification of non-conformance [SEC=OFFICIAL]

Dear [redacted]

Thank you for notifying the Department of non-compliance for EPBC 2020/8692.

The Department acknowledges receipt of this notification, and it will be reviewed accordingly.

For further information please do not hesitate to contact me at the EPBC Monitoring Mailbox.

Kind regards,

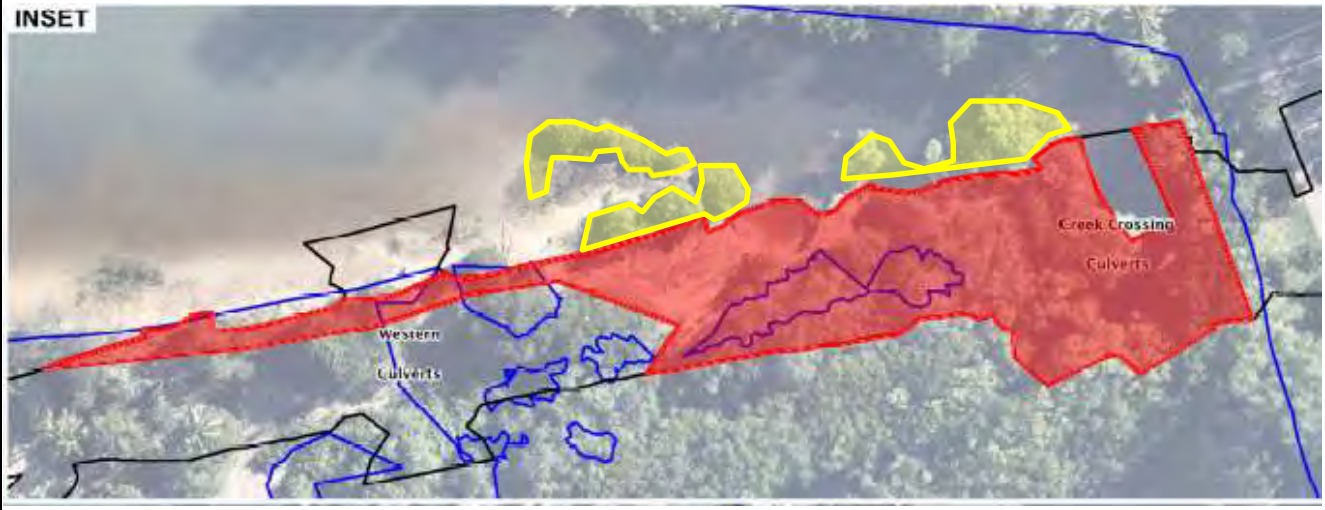
[redacted]
Environment Compliance Branch
Compliance Division
Department of Agriculture, Water and the Environment
GPO Box 858, CANBERRA ACT 2601

NON-CONFORMANCE REPORT

Project:	Yorkeys Knob Boat Ramp Project	**Project NCR Ref:**	001
Client:	Department of Transport and Main Roads	**Date Raised:**	03/03/2022
Subcontractor (if applicable):	N/A	**Incident Report #:**	N/A
NONCONFORMANCE DETAILS		**Supplementary information attached?** ☐	
Lot Number:	CLG-101		
Lot Type:	Clearing		
Structure / Location:	Northern Side of Site Access Road between Ch110 and Ch60		
Nonconformance Particulars:			

☐ **Minor**	☒ **Moderate**	☐ **Significant**	☐ **Critical**	☐ **Catastrophic**

After completion of the clearing works, it was noted that the extent of clearing conducted on the northern side of the Access Rd in between CH60 and CH110, exceeded the extent of the approved Marine Plant Impact Area as shown on the below figure with red shading.



Pre-Clearing Picture (below). Unapproved Clearing shown in yellow at near low tide.

NON-CONFORMANCE REPORT

Post-Clearing Picture (below). Unapproved Clearing shown in yellow at near low tide.

Potential Impact of Non-Compliance

1. The non-conformance causes an approval condition breach as clearing took place outside the approved clearing limits/project area.
2. The environmental impacts seem minor to moderate for the following reasons:
   a. The small footprint of the impacted area,
   b. The overall reduction of the clearing area across the project being still less than the approved footprint,
   c. The likelihood of rehabilitation (see corrective action section).
   d. As per the vegetation clearing plan in the EMP the mangrove stands were removed cut off at ground level, so the ground was no disturbed. For this reason, the remaining stumps and root systems will continue to capture sediment, mitigate erosion and promote reshooting of mangroves (see attached photos).
   e. Overtime as the stumps began to decay their effectiveness to provide erosion protection will diminished so it is important to promote recolonisation of the area.
   f. Given this specific section of creek opposite the Marina was particularly sparse of shoreline vegetation prior to the works the small, segmented area of mangroves removed in error do not represent a significant impact on the broader habitat. However, rehabilitation works proposed will promote a significant improvement in habitat value.

Casual Factors:

3. Hall developed a Vegetation Clearing Plan in line with the project documents and approvals (Annexure E to CEMP)
4. Prior to works commencing, Hall marked the road alignment with survey pegs, sitting at a 1m offset from the edge of embankment/cut (both sides).
5. Clearing was intended to be limited to the absolute necessary footprint to allow construction rather than extending to the maximum approved footprint.
6. A pre-clearance flora survey was completed prior to the works by TMR, confirming no ant plants were present within the proposed works area
7. All ant plant locations adjacent to the work area were located and visually marked as well.
8. A pre-clearance fauna survey was completed prior to works commencing.
9. The pegged alignment was meant to be the clearing limit for the works and was communicated as such between the site team.
10. The first stage of works was to clear the banks of the creek and install a temporary crossing. When this activity was complete thick vegetation immediately to the north had to be cleared to provide suitable access to peg the access way.
11. As clearing progressed, the first 30-40m of the northern side had no pegs to mark the road alignment, due to the edge of the alignment being low lying, within the tidal zone in relation to the natural surface.
12. At the time the pegging was completed, high tide water levels prevented access to the adjacent area of the access road.
13. The Project Manager was aware that most of this specific area will be built up and stabilised with rip-rap rock as part of the permanent road works and made the incorrect assumption that the batter of these works would extend to the shoreline and impact the mangrove stands in question. This led to the direction to remove the sparse mangrove stands. This was not cross-checked against the road alignment data or the Environmental Management Plan, which specified the Marine Plant Impact extents

14. The site supervisor and excavator operator were advised that the foreshore line in this area represented the extent of clearing works.
15. From approximately chainage 120m onwards, the northern alignment pegs were in place to guide the clearing works.
16. The clearing outside the approved boundary remained unnoticed until pointed out by a TMR representative following review of works photos at a later date.
17. The additional area cleared amounts to approximately 0.0244ha (244m2)

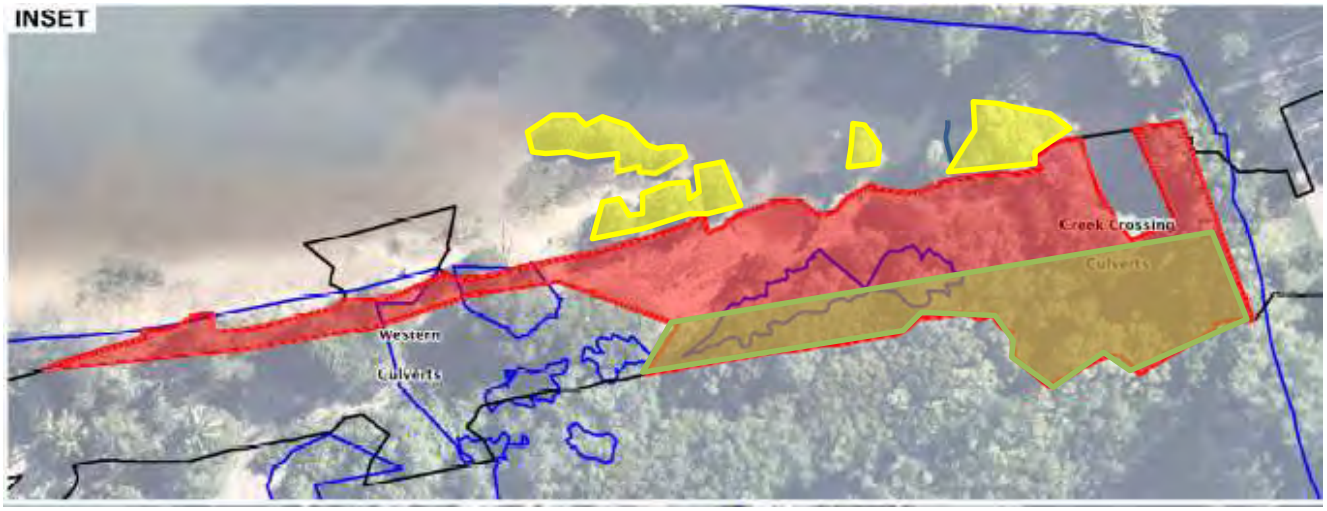
CORRECTIVE ACTION	Supplementary information attached? ☐

Corrective Actions already taken:

18. Non-Compliance discussed within the Project Team
19. Project documents i.e. Management and Approvals reviewed
20. Area inspected to ensure disturbance does not cause erosion or sediment issues (plant roots left in place and natural ground remained undisturbed). A silt curtain was in place at the time however no visual signs of erosion or sediment run off were observed over the following days.

Proposed Corrective Action:

21. The projects overall offset area calculation should remain unchanged due to reduced actual clearing area across the site. The figure below indicates the area not cleared in green. The yellow area indicates the additional clearing which amounts to approximately 0.0244ha (244m2). We propose to provide a comparison image/drawing upon completion of the works to verify the actual offset.



22. Hall will conduct the remaining project to minimise to the greatest extent possible marine plant impacts within the approved footprint, with the objective of keeping the gross marine plant impact area below the approved area to mitigate the impact of this incident. At the conclusion of the project works Hall will capture post works drone image (after all works are completed) and utilise pre-works drone image. Both these images shall be rectified, and the exact areas of marine plant impact will be calculated for the project and compared to the approved impact area.
23. At the conclusion of the project an inspection of the impact area will occur, to assess and document the mangrove recovery in the impact area firstly with a ground inspection and marking of the recovering area with fluoro tape and capture of this area with drone footage. This drone footage will be used to define the area of mangrove recovery.
24. Subject to the above corrective action outcomes above the following remedial actions shall occur:
    a. Action A - In the event corrective action 22 and 23 shows the total marine plant impact area (at the incident site) is less than approved and the approved recovery area is greater than 244m2 then no further rehabilitation actions would be proposed.
    b. Action B - In the event corrective action 23 shows the total marine plant impact area is less than approved and the approved recovery area is less than 244m2 then a program of mangrove planting (including monitoring) is to be implementing to achieve recovery of the 244m2 impact area. Details of the planting and monitoring strategy will be submitted to DAF and DAWE prior to the implementation.
    c. Action C - In the event corrective action 23 shows the net marine plant impact area is greater than that approved area (as a result of the incident) then a minimum of 500m2 (double that impacted) of mangrove recovery rehabilitation in the incident area will be required. This will include promotion of natural colonisation with monitoring and/or a program of mangrove planting and monitoring. Until the objective has been achieved. Details of the planting and monitoring strategy will be submitted to DAF and DAWE prior to the implementation.
25. The outcomes of the Corrective Action investigations and subsequent actions to achieve the desired objectives will be collated in a memo style report that will be submitted to DAF and DAWE

NON-CONFORMANCE REPORT

Measures to prevent reoccurrence:

26. Hall shall review its Environmental Management Plan and all Project Approval Documents as a Project Team Exercise to ensure no misunderstanding of the plan's environmental requirements and associated approval conditions.
27. The action shall be documented via a Minutes of Meeting and a revised Plan if changes are being made.

Report prepared by: Matt Hollstein	**Date:** [redacted]	**Signature:** [redacted]

Client Response:

Corrective Action Accepted:	☐ **Initial**	
Corrective Action Rejected:	☐ **Initial**	

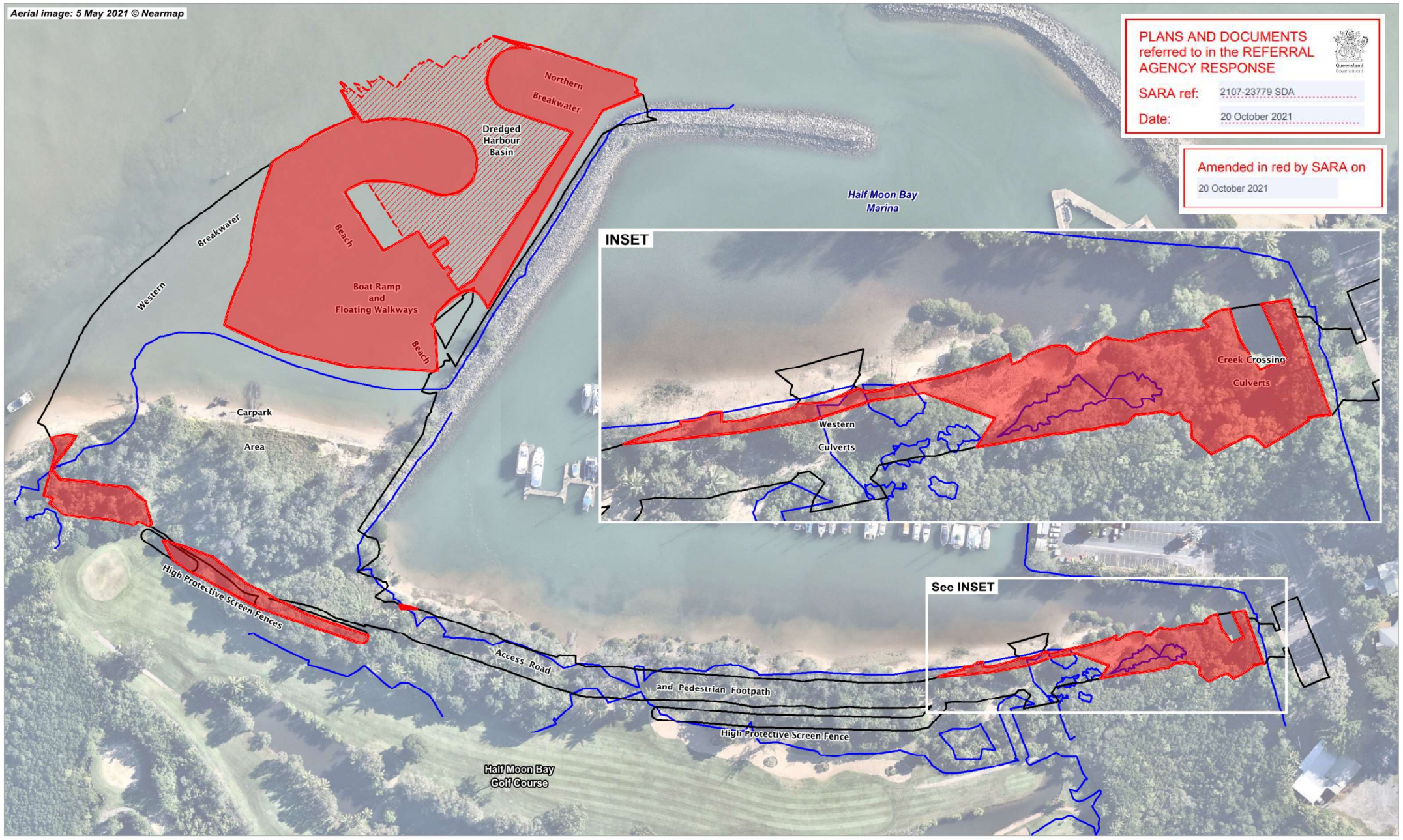
Conditions / Comments:

NCR CLOSE OUT	**Supplementary information attached?** ☐	
Approved Corrective Action Completed:		/ /
	Contractors Representative Sign:	**Date:**
		/ /
	Client's Representative Sign:	**Date:**

Comments:


7 Buckley St Yorkeys Knob QLD
287°W (T) LAT: -16.802915 LON: 145.718318 ±4m ▲ 5m
Mangroves
AMPP
Yorkeys Knob
09 Mar 2022, 08:48:10


7 Buckley St Yorkeys Knob QLD
331°NW (T) LAT: -16.802924 LON: 145.718249 ±4m ▲ 0m
Mangroves
AMPP
Yorkeys Knob
09 Mar 2022, 08:48:38



LEGEND

- Pre-development HAT line
- Proposed development footprint
- Total permanent impact of 1.475 ha
- Temporary impact (periodic dredging) of 0.486 ha

Data source:
Royal HaskoningDHV (8 July 2021)

Title:
Impacts on Marine Plants

Figure: **3-1**

Rev: **G**

BMT endeavours to ensure that the information provided in this map is correct at the time of publication. BMT does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.

N

0 40 80m
Scale - Main Map

0 20 40m
Scale - Inset

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Filepath: I:\B24067_I_GML_Yorkeys Knob Approval\DRG\ECO_013_210709_Permanent Impacts on Marine Plants_RevG.WOR

Australian Government

Department of Climate Change, Energy, the Environment and Water

Our reference: EPBC 2020/8692
Email: [redacted]

[redacted]
Maritme Safety Queensland
Department of Transport and Main Roads
Floor 4 61 Mary Street
BRISBANE CITY QLD 4001

Dear [redacted]

Warning Letter - Contravention of *Environment Protection and Biodiversity Conservation Act 1999* for EPBC 2020/8692

As you are aware, the Department of Climate Change, Energy, the Environment and Water (the department) has been conducting inquiries into a potential contravention of section 142 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act); specifically, a potential breach of conditions attached to the EPBC 2020/8692 approval.

After reviewing a range of information including the information you have provided, the department has formed the view that a contravention of condition 2 has been substantiated.

Section 142 of the EPBC Act requires an approval holder to comply with conditions attached to an approval. Penalties may apply to approval holders who contravene conditions.

After careful consideration, the department has concluded that the issuing of an infringement notice is not an appropriate response in relation to this matter. However, the department has determined that Department of Transport and Main Roads will be issued a warning for contravening section 142 of the EPBC Act. This letter serves as the warning notice and finalises the compliance matter relating to condition 2 of the EPBC 2020/8692 approval.

Please note that this matter will be recorded and considered to be part of your environmental history and may be considered in any future dealings with the department in relation to the EPBC Act and environmental matters.

Please ensure that you continue to maintain accurate records of all activities associated with, or relevant to, the conditions of the approval. Such documents and records may be used in the future to verify compliance with the conditions of the EPBC 2020/8692 approval.

Should you have any questions regarding this matter please contact Olivia Moore (contact details above).

Yours sincerely

[redacted]

[redacted]
Environmental Audit Section
15 July 2022

Appendix 7 - EPBC 2020-8692 Completion of the construction phase notification

[redacted]

From: [redacted]
Sent: Tuesday, 31 October 2023 12:34 PM
To: [redacted]
Subject: EPBC 2020/8692 Yorkeys Knob Boating Infrastructure Project - Completion of Construction Phase
Attachments: Attachment 2 - YORK-NCR-001 Clearing Non-Conformance_030322.pdf; Attachment 3 002891_001_Indicative_Recovery_Areas.jpg; Photos 1-3.pdf; Attachment 1 002891_001_ConstructionSiteImpactFootprint.jpg

Hi [redacted]

The Yorkeys Knob Boating Infrastructure Project facility approved under permit number EPBC 2020/8692 was open for public use on the 7 September 2023. Contractually the project construction phase will not be finalised technically until 24 July 2024 when the defects period is complete, however as of the 17 October 2024 our Principal Contractor has completed the scope of works specified under the contract, on this basis we are using this date as Completion of the Construction Phase and instigation of post works.

This notification/correspondence is covering three elements;

1. Present results of post works assessment of vegetation impacts associated with the project ("completion data") in accordance with condition 22, EPBC 2020/8692
2. Report progress on the proposed rehabilitation strategy associated with the 2022 reported clearing incident
3. Discuss creek bank erosion trends upstream of the works area

ITEM 1 - Completion Data

Attachment 1 presents the post works vegetation impact assessment, which is summarised in words below:

a. The area in orange represents the "2022 incident impact area" discussed below which included a total area of 0.031 ha
b. The area in yellow represents project scope change areas that achieved a 0.11 ha reduction in vegetation clearing
c. The salmon coloured areas represent changes in vegetation not resulting from project works. These changes resulted from vegetation removal associated with the golf course, which included palm trees in the centre of the figure and a tree in the area in the middle. The salmon area to the far west (left in the image) resulted from natural attrition of mangroves that were found to be in poor condition prior to the works commencing (documented in the pre-works survey)
d. The assessment also shows a very minor increase of 0.002 ha associated with the unavoidable need to remove a mangrove to tie the new culvert erosion protection works into the existing rock revetment downstream.
e. Based on this data the project was successful in keeping the total vegetation clearing area below that approved by 0.077 ha even with the incident impact area included.
f. The project also included additional scope of terrestrial rehabilitation of areas beside the access road and rear of the carpark, which further improved the post works habitat of the area. See **Photo 1** and **2** showing an example of this.
g. As per below item 2, mangrove rehabilitation of 0.031 ha is also being undertaken (in the incident area) as part of the post works activities.
h. The three ant plants, identified in the pre-works survey adjacent to the works area, were physically demarcated and not impacted by the project construction works.

ITEM 2 - 2022 incident rehab activities

As per previous correspondence in early 2022 an incident occurred, at the start of the works, in which 0.031 ha (initially estimated at 0.0244 ha) of mangroves were cleared (in error) outside the approved footprint. This event was reported in accordance with permit EPBC2020/8692 and our state approvals and an incident report and rehabilitation strategy was provided, **attachment 2** is a copy of this document for easy reference. Please note that

TMR(MSQ) undertook GIS mapping of the incident area after the original reporting by our contractor which indicated the actual incident clearing area was 0.031 ha and subsequently amended our State approvals to include this area, as temporary disturbance. Below points report progress wrt this strategy implementation.

i. In accordance with the rehabilitation strategy and the EPBC 2020/8692 conditions TMR(MSQ) has undertaken a post works assessment of cleared areas and recovery in the incident area, **Attachment 1** is the overall project clearing post works assessment and **Attachment 3** defines the recovery area assessment against the original incident area.
j. As indicated above the outcome of this assessment is that as per our objective (to minimise vegetation clearing to the greatest extent possible) the area of vegetation clearing based on the post works assessment is that even including the additional incident area, the project has cleared 0.077 ha less than that originally approved.
k. As per the incident rehab strategy, TMR has undertaken an assessment of the natural mangrove recovery of the incident area which is shown in **Attachment 3** which shows approximately 0.05 ha of natural recovery has occurred.

Based on the incident rehab strategy the above outcomes require **Action B** rehabilitation scope to be completed (as indicated below, directly from the document – with the exception that the incident area for rehab is 0.031 ha as described above).

b. Action B - In the event corrective action 23 shows the total mari approved recovery area is less than 244m2 then a program of m implementing to achieve recovery of the 244m2 impact area. De submitted to DAF and DAWE prior to the implementation.

Based on above TMR(MSQ) is commissioning the development of a mangrove rehabilitation plan for 310m2 to rehabilitate the incident area as defined in orange on **Attachment 1**. Once this plan is completed it will be submitted to DAWE and DAF prior to implementation. TMR(MSQ) has been advised that mangrove seedling harvesting in Far North Queensland is limited to the month of February and on this basis the rehab program is planned for implementation in 2024.

ITEM 3 – Erosion of Half Moon Creek Bank upstream of works area

TMR(MSQ) and its contractor demarcated the three areas adjacent to the works area where ant plants were identified in the pre works survey and these areas were affectively protected during the works. In the pre works survey it was identified that the mangrove stand immediately adjacent to half moon creek, which supported one of the ant plants, immediately upstream of the works area was in poor health prior to the works. While the project has not directly impacted this mangrove stand a combination of the maintenance dredging of the adjacent existing channel (not associated with the project) and some end effects of the project revetment wall downstream has resulted in some shoreline realignment with some of these mangroves in poor condition falling into the creek. The area in question is immediately to the west of the most western salmon area in **attachment 1** and is shown in **Photo 3**. At the time of writing the part of the mangrove stand with the identified ant plant is still in place however TMR(MSQ) are of the view that this stand is at risk from being lost as a result of future high flow events. TMR(MSQ) wanted to highlight this issue for further discussion regarding the best course of action, if any.

Please let us know if you require any additional information, We are progressing with the development of the mangrove rehabilitation plan as indicated in item 2 and will provide that once completed prior to implementation.

Kind Regards

[redacted]

[redacted]

Maritime Safety Queensland Branch | Customer Services, Safety and Regulation Division
Department of Transport and Main Roads

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The Department of Transport and Main Roads acknowledges the Traditional Owners and Custodians of this
We also acknowledge their ancestors and Elders both past and present.
The Department of Transport and Main Roads is committed to reconciliation among all Australians.