

PURPOSE & PERFORMANCE

- 1.1. Works are to restore rock oyster ecosystems throughout the Noosa River estuary at sites that meet site suitability criteria and positively interact with current human uses.
- 1.3. As the works do not include geotextile underlayer, some settlement is to be expected and has been factored into the design. 1.4. Module layouts have been developed to allow water flows through the structure to reduce siltation, however some siltation is to
- be expected and has been factored into the design. Module layouts are to be laid as reef patches and may be curved or shaped to reflect the local bathymetry and specific constraints of each restoration site.
- 1.5. Inundation and overtopping during higher tides and flood events is to be expected

2. SCOPE OF WORKS

- Phase 1. Deployment of restoration substrates in modular forms at 4 restoration sites 2.1. 2.2. Phase 2. (SUBJECT TO SEPARATE APPROVAL) Deployment of restoration substrate at additional sites and/or to augment or maintain existing sites throughout the estuary as funding allows. Additional sites to be progressively selected from within the identified Restoration Zones (refer Note 5).
- Works may include seeding of substrate with oyster spat and/or live oysters. Oysters to be sourced from brood stock within the 2.3.
- Noosa River and/or culture stock from oyster gardening within the Noosa River 2.4 Works may be staged. Individual sites may be staged subject to engineer's certification
- 2.5. Deployment of navigation buoy(s) at each site and signage in accordance with permit conditions
- Works to be undertaken in accordance with the Project Restoration Plan. 2.6.
- 27 Monitoring and Maintenance, as required (refer Note 4.) 2.8.
- Works may need to be adapted in response to climate change, depending on monitoring of habitat health.
- 3. NOOSA RIVER FISH HABITAT AREA, MATTERS OF STATE ENVIRONMENTAL SIGNIFICANCE & MARINE PLANTS 3.1. The objective of the works is to restore oyster-dominated ecosystems to the Noosa River estuary including within the Noosa River Fish Habitat Area.
- 3.2. Two of the Phase 1 Restoration Sites, Tewantin and Goat Island, are within the Noosa River Fish Habitat (A) Area. The Noosa Sound East and Noosa Sound West restoration sites occur outside of the Noosa Fish Habitat Area. The Phase 2 Restoration Sites have not been selected, but will be within the Noosa River Fish Habitat Area (except for any further works in Noosa Sound restoration sites).
- 3.3. Works to occur within the identified Restoration Zones, within 30m from shore, in water depths less than 2m below MLWS. The exception to this is the Tewantin site where works are proposed on existing rocky substrate, or in the future where otherwise approved in writing by MSQ.
- Phase 1 works results in temporary impacts to sparse marine plants at Tewantin site only. 3.5.
- Works are NOT to impact on existing terrestrial vegetation (including vegetation within mapped MSES). During construction, plume is to be minimised and monitored visually to ensure no impacts to adjacent marine plants. Turbidity 3.6. 3.7.
- monitoring to be undertaken in the event that it extends within 5m of mapped seagrass beds (Refer Project Restoration Plan Section 6.4).

MONITORING & MAINTENANCE

- Restoration substrates to be monitored periodically and after storm events in accordance with the Project Restoration Plan. 4.1. 4.2. Maintenance to be undertaken as required. This may include:
 - Reprofiling and/or placement of additional rock to reinstate design levels and profiles after expected settlement has occurred. Ideally this would occur 12 months after deployment, but may be subject to timing of other works. Where limited settlement is experienced (nominally <200mm) and the crest remains within the target depths for oyster growth, maintenance works are not required. Additional rock only to be placed on existing reef where monitoring indicates that this
 - will enhance the habitat (not where existing habitat is established and healthy). Placement of additional oyster cultch (seeded or unseeded) and/or live oysters, onto a reef patch. Total volume of loose shell (including existing loose shell) is not to exceed 10kg/m² to maximise interlocking of the cultch or oysters with the rock
 - Removal of displaced rock and or oyster shell, if found more than 5m outside the restoration site, as part of monitoring, and if resulting in negative impacts, is required.
- 5. RESTORATION ZONES, RESTORATION SITES, RESTORATION FOOTPRINTS
- Suitable Restoration Zones have been identified as listed below. For more detailed images of each zone, refer drawing 5.1. NROR-2021-01. The Restoration Zones have been developed based on Habitat Suitability parameters and Restoration Suitability parameters as detailed in the Project Restoration Plan.
- Zone 1. Main Channel
- Zone 2. Noosa Sound
- Zone 3. Weyba Creek Zone 4. Lake Weyba
- Zone 5. Lake Donella
- 5.2 Restoration Sites are identified within each Restoration Zone based on mapping of site-specific constraints, knowledge of past oyster bed occurrences (where possible) and adoption of minimum distances outlined in Table 1

Existing Feature or Habitat	Constraint or Minimum Required Distance	Preferred Proximity to Existing Habitat		
Landward extent water depth	MHWS	-		
Spaward extent water death	1m seaward of selected depth (1m below MLWS preferred; 2m below MLWS maximum)			
Rocky Reet	2ຫ້	Within 500m		
Extant Oyster Ecosystem	Zm	Within 250m		
Historica: Oyster Ecosystem		Within 250m Restoration on historic sites where known and practical		
Terrestrial Vegetation (in: Leing mapped MSES)	0m			
Mangroves including pheumataphores	<i>]m</i>			
Fall on trees and timber in waterways	200			
Other marine plants (instuding seagrasses)	10m**	With n 500m of scagrasse		
Vobile Seabed	0-11	-		
Distance from MHWS	Less then 30m			
Sinc'l Craft Channels (MSQ Beacon to Beacon - Centreline)	10m	-		
Tida' Works	30m			
Woonings	30m from modeling (providing minimum 5m from vessel on modeling)	-		
Foreshore Access	10m	-		
in-water urban utilities (submarine cables & o polines)	5m	-		
In-water transport infrastructure (cross-river cable barges, forry terminals otcl	3 0 m	-		

*Substrate may be placed on existing rocky reef where the substrate is not supporting significant habitat *Unless approval is granted for enhancement of significantly degraded areas **Except with written agreement of MSQ to extend further offshore (e.g. Tewantin Site).

- 5.3. The Restoration Footprints are the area of riverbed encompassed by a group of restoration substrate reef patches. Restoration Footprints are to be within the selected Restoration Sites. Phase 1 Restoration Sites are listed below and detailed on drawing NRN-2021-03, -04, -05 & -06,
 - Goat Island Restoration Site
 - Tewantin Restoration Site
 - Noosa Sound West Restoration Site
 - Noosa Sound Easts Restoration Site

. Works may provide some erosion protection; however, they have not been designed specifically for this purpose



APPROVED PLAN OPW22/0029 **NOOSA COUNCIL** 19 MAY 2022

EGEND

PHASE 1 SITE

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OJECT NAM Noosa River Oyster Restoration

General Notes and Site Selection

DRAWING No.		REVISION:
N	A	
DRAWN : SK	CHECKED :BC	APPROVED : AJ Cafachan
for	3200	V RPEQ 2870
SIZE: A3	SCALE : A3	DATE : 05 Aug, 202



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Hotel

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RPEQ 2876

05 Aug, 2021

DATE ·

Existing mangroves				— Exis	iting Vegetation (Not mangrove	es)	
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