FACT SHEET

September 2021

Flinders Pier Marine Ecology and Pier Removal Impact Assessment

Key findings of a study to describe the marine life under the pier and identify any potential impacts of removing an inner timber section of pier to the marine ecosystem at that location.

Key information

Exploring the underwater environment at Flinders Pier on Bunurong Sea Country is like entering another world. You can see a huge variety of species such as Magpie Perch, Old Wife, Shortfin Pike, Smooth Stingrays, Bluethroat Wrasse and seastars. It's also well known as a place to see Victoria's official marine faunal emblem the Weedy Seadragon *(Phyllopteryx taeniolatus).*

Parks Victoria is committed to protecting the sensitive marine values that exist in the area so commissioned the Flinders Pier Marine Ecology and Pier Removal Impact Assessment (2021). The report, prepared by environmental marine biology consultants CEE Pty Ltd, examines the marine ecosystem at the pier, maps habitat and marine life, and identifies any potential impacts proposed partial pier removal works may have at that location, along with recommended mitigation strategies.

Background

Having reached the end of its design life, a 180-metre timber inner section of Flinders Pier from the foreshore to the vehicle turnaround is being considered for removal for safety reasons. Part of this section is already closed to the public due to failure. Removal will not affect continued public access to the popular 327 metre pier experience currently available.

A sustainable approach to the future management of the pier that ensures the best outcome now and for many years to come is the primary goal.

Funding to remove the dangerous and duplicated section comes from the Victorian Government's $24 million Piers and Jetties economic stimulus package.

Key findings

Local marine environment characteristics:

1. Flinders Pier is located in Western Port and experiences large tidal variations. Tides range over 3 metres which is a strong influence on the distribution patterns of marine bioata along the relatively flat seabed under the pier. The ecological values of the marine biota inhabiting the seabeds and artificial habitats created by the pier structure increases with increasing distance from the shore and water depth.
2. The first 120 metres of pier is above the low tide mark. The seabed under the first 80 metres of pier comprises bare, flat, fine sand and is sparsely inhabited by common invertebrates including barnacles, limpets and marine snails. While sparse seagrass can be found alongside the pier from 80 metres (just above low tide) to 140 metres, the seabed beneath the pier is bare of seagrass because of insufficient light with the pier above it. The seabed alongside the remaining 40 metres of timber pier to be removed is habitat for the seagrass *Amphibolis antarctica*. The seabed beneath the pier is bare of seagrass because of insufficient light caused by shading from the pier deck.

3. The remaining 140 metres outer section of pier that is being retained provides most of the valuable marine ecosystem of the area.
4. The predominant habitat for Weedy Seadragons is the beds of Sea Nymph seagrass (*Amphibolis antartica),* a common seagrass species found on exposed areas of rocky coastline across southern Australia and widespread in the Flinders region, providing shelter from turbulence and predators, and containing high numbers of the small crustaceans they eat.
5. At Flinders Pier, seadragons are most abundant from the middle to outer sections often seen amongst the seagrass meadows alongside the pier and sometimes around the piles. They are less abundant under the nearshore sections of pier (up to 120 metres) where the seabed is flat, bare and sandy sparsely covered with *Zostera muelleri* seagrasses.

Impact assessment:

1. The overall footprint of any effects of the work is considered to be minimal compared to the size of the surrounding coastal habitat. Risks and impacts can be minimised through the development of a Construction Environmental Management Plan.
2. Localised work away from the seadragons main habitat means effects on the abundance, behaviour or movement of this species population is expected to be negligible. Being mobile creatures, they are able to swim away from any disturbance and find protection in the outlying seagrasses or kelp.
3. Some minor impacts to seagrass beds found alongside the middle section of pier (from 120 to 180 metres) may occur as a result of the works but recolonisation is expected to occur over time. The retained newer concrete section will continue to provide habitat in the shoreward and middle sections of pier.
4. Seagrasses may re-establish in the nearshore area of the seabed that is presently shaded by the existing timber section to be removed.
5. The piles in the inner section of pier (first 80 metres) provide minor habitat for marine biota that are common and resilient to the harsh life in the upper intertidal zone. Some loss of marine invertebrates, like sponges and macroalgae attached to the permanently submerged piles to be removed is possible. Other cryptic fish such as gobies, blennies and pipefish that use these for habitat will move to other locations. These species are abundant and represented on natural reefs and remaining piles.

Weedy Seadragons and their significance:

Seadragons are a uniquely southern Australian group of fish and are in the same family (Syngnathidae) as seahorses and pipefish. They occur in high abundance in seagrass beds, kelp forest and sponge gardens from Newcastle NSW to Geraldton, WA. They are a 'Protected Aquatic Biota' under the Victorian Fisheries Act 1995. All members of the family Syngnathidae are listed marine species under the Commonwealth Environmental Protection and Biodiversity Act 1999 (EPBC Act). Listed marine species are protected under the EPBC Act from works undertaken on Commonwealth area or undertaken by a Commonwealth agency. The proposed works at Flinders Pier do not fall within this definition.

Conclusion

In summary, the report shows that with careful scheduling of works and the development of a Construction Environmental Management Plan, the potential impacts to the marine ecosystem in the nearshore area can be minimised, localised and will be temporary. Prioritising protection of the areas that are rich in natural seagrass habitat, which the report shows are mainly in the deeper water toward the pier head and beyond the shaded areas created by the timber structure, as well as the artificial habitats created by the low landing decks and remaining piles, will ensure minimal impacts.

Importantly, with the proposed section for removal being separate from the main Weedy Seadragon habitat the effect on the abundance, behaviour and movement of this fish is expected to be negligible.

The ecological assessment will be considered alongside a heritage impact assessment commissioned by Parks Victoria, and a third-party Victorian Heritage Register nomination statutory process underway through Heritage Victoria before any decision on the pier's future is made.

Other reports and references

- Victorian National Parks Association – Reefwatch
- Determining the specificity of fish-habitat relationships in Western Port (2013)
- Understanding Western Port Report (2011)
- Flinders Foreshore Reserve CMP (2010) - URS
- Flinders Pier and Foreshore CMP Ecology Baseline Survey (2007)

Further information

To view the **Flinders Pier Marine Ecology and Pier Removal Impact Assessment report** scan the QR code, visit parks.vic.gov.au/projects, call 13 1963 or email info@parks.vic.gov.au

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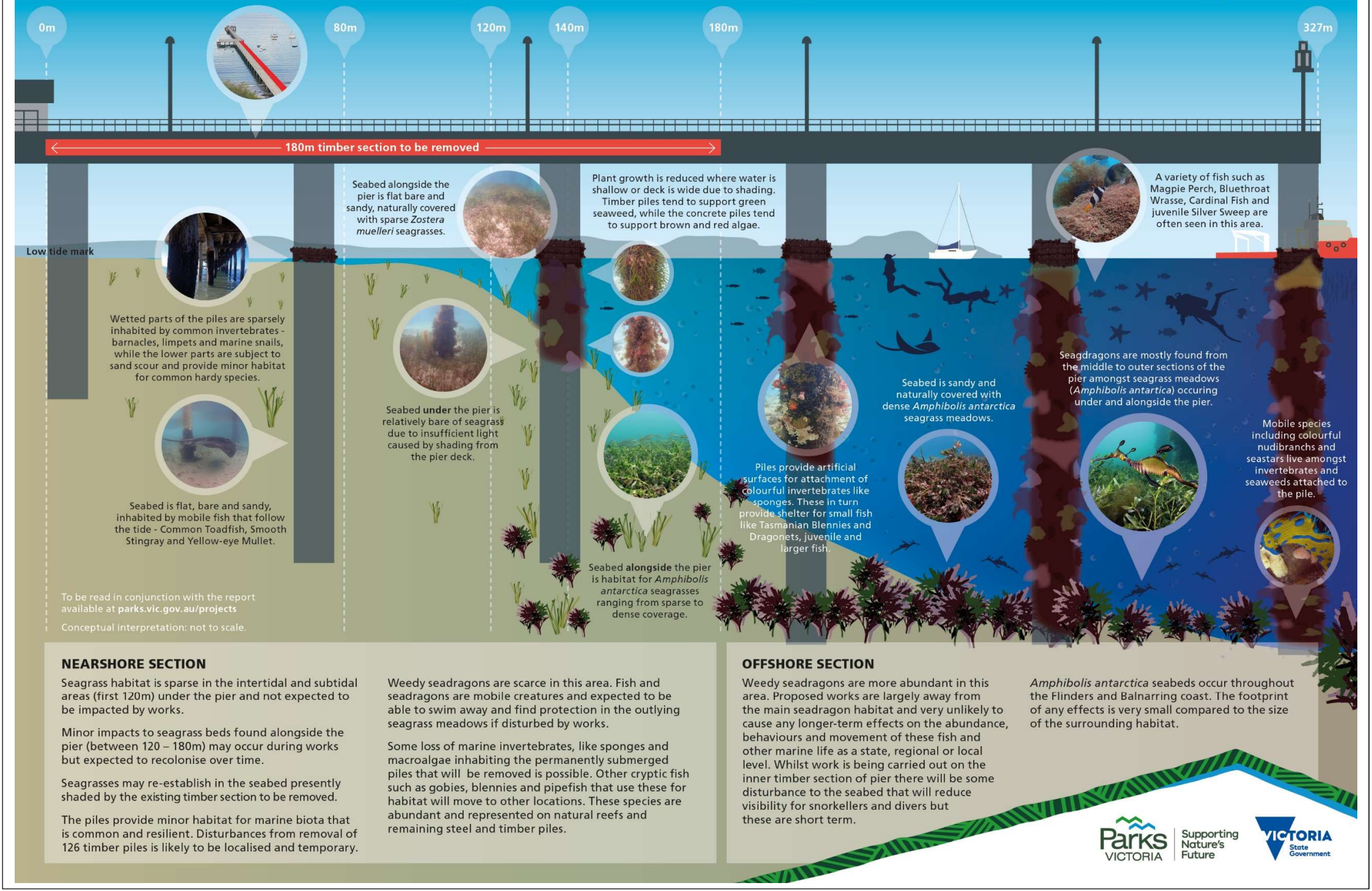
Flinders Pier Marine Ecology and Pier Removal Impact Assessment: Key Findings



NEARSHORE SECTION

Seagrass habitat is sparse in the intertidal and subtidal areas (first 120m) under the pier and not expected to be impacted by works.

Minor impacts to seagrass beds found alongside the pier (between 120 – 180m) may occur during works but expected to recolonise over time.

Seagrasses may re-establish in the seabed presently shaded by the existing timber section to be removed.

The piles provide minor habitat for marine biota that is common and resilient. Disturbances from removal of 126 timber piles is likely to be localised and temporary.

Weedy seadragons are scarce in this area. Fish and seadragons are mobile creatures and expected to be able to swim away and find protection in the outlying seagrass meadows if disturbed by works.

Some loss of marine invertebrates, like sponges and macroalgae inhabiting the permanently submerged piles that will be removed is possible. Other cryptic fish such as gobies, blennies and pipefish that use these for habitat will move to other locations. These species are abundant and represented on natural reefs and remaining steel and timber piles.

OFFSHORE SECTION

Weedy seadragons are more abundant in this area. Proposed works are largely away from the main seadragon habitat and very unlikely to cause any longer-term effects on the abundance, behaviours and movement of these fish and other marine life as a state, regional or local level. Whilst work is being carried out on the inner timber section of pier there will be some disturbance to the seabed that will reduce visibility for snorkellers and divers but these are short term.

Amphibolis antarctica seabeds occur throughout the Flinders and Balnarring coast. The footprint of any effects is very small compared to the size of the surrounding habitat.

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