WetMAP Stage 4 Vegetation





Building our knowledge of the ecology and management of Tall Marsh

Aim

To clarify the current state of knowledge of *Phragmites australis* (Common Reed), *Typha* spp. (Cumbungi) and *Juncus ingens* (Giant Rush) dominated Tall Marsh vegetation, particularly regarding management actions to reduce Tall Marsh in wetlands that receive water for the environment.

Background

Tall emergent macrophytes are perennial plants that grow to >2m in height, and naturally occur in many Victorian wetlands. They can play important ecological functions, including providing habitat for waterbird species. There are three dominant species which typically dominate the Tall Marsh EVC (Ecological Vegetation Class): *Phragmites australis, Typha* spp. and *Juncus ingens*. These species can become difficult to manage in some wetlands, where hydrological conditions favour their growth and expansion.

These species tend to thrive when wetlands experience repeated prolonged shallow flooding and the absence of prolonged dry periods. They can expand through rhizomes (horizontal underground stems), floating vegetative plant material and seed recruitment. Historically, before water regulation, these species were likely restricted in their distribution because of natural fluctuations in water regimes including deep floods that lasted for several months, followed by dry phases.

When Tall Marsh dominates large areas of wetlands, this can reduce the extent of other vegetation types as well as areas of open water and mudflats. This can result in declines and losses of other native wetland plant species, thereby reducing and simplifying vegetation diversity.

Wetland Monitoring and Assessment Program for environmental water





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In some Victorian wetlands where Tall Marsh has expanded, including Ramsar sites, there are ecological objectives to reduce this spread. In general, manipulation of water regimes is considered difficult or unachievable as a tool to reduce the spread of Tall Marsh. Control programs primarily focus on reducing plant biomass and height, through a combination of slashing, chemical spraying and/or burning. This is then followed up by delivering water for the environment to submerge and ultimately drown rhizomes. Ideally, this is repeated over time to reduce plant vigour and extent, with a water regime implemented to disadvantage Tall Marsh.

Documentation of past control efforts for Tall Marsh is limited. Understanding the details of technical, logistical, ecological, and planning issues and outcomes could greatly inform future efforts. In 2015, the North Central Catchment Managment Authority conducted a review of Tall Marsh management (*Phragmites australis* and *Typha* spp.) and undertook a workshop (Roberts and Kleinert 2015). This work identified a key knowledge gap - the need to understand the benefits of different control methods and quantify the impacts of these methods.

Research question

What is the current state of knowledge of *Phragmites australis*, *Typha* spp. and *Juncus ingens* dominated Tall Marsh EVC in Victoria?

Approach

Literature review

• Conduct a brief updated review of the ecology, distribution and physiology of the key Tall Marsh species, *Phragmites australis, Typha* spp. and *Juncus ingens*. This will focus in particular on:

- o aspects directly relevant to these species in Victorian wetlands which receive water for the environment
- o information gathered since Roberts and Kleinert (2015).

Data collation

• Collate and share data, knowledge and lessons learned from Tall Marsh management programs, particularly programs that use water for the environment, including both successes and failures. This will be undertaken via:

o structured interviews with Victorian wetland managers

o a workshop with relevant stakeholders.

Knowledge gap identification

• Identify the priority knowledge gaps regarding management of Tall Marsh.

Management recommendations

• Using this updated knowledge base, identify how water for the environment can be used in wetlands to manage Tall Marsh most effectively.

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Timeline July 2023 - June 2024

Outputs

- A literature review
- A summary of the structured interviews and workshop
- A list of recommendations on how water for the environment can be used most effectively to manage Tall Marsh in Victorian wetlands.
- A list of the priority knowledge gaps in approaches to manage Tall Marsh.

Outcomes

• Enhanced awareness of Victorian wetlands managers regarding current ecological and management knowledge of Tall Marsh.

• Enhanced decision-making regarding management and control options for Tall Marsh.

• Enhanced decision-making regarding delivery scenarios of water for the environment, the potential risks of expansion of Tall Marsh and realistic strategies to reverse expansion.

• Enhanced understanding of the values and threats of Tall Marsh.

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Giant Rush

Roberts & Kleinert (2015). Managing Typha and Phragmites. Report from workshop held in 2014. North Central Catchment Management Authority, Huntly.

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ISBN 978-1-76136-475-4 (pdf/online/MS word)





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