Threatened Species Program

Swamp stringybark
Eucalyptus conglomerata
Recovery Action Plan 2025-2035

Queensland Government

Prepared by: Threatened Species Operations, Wildlife and Threatened Species Operations, Department of the Environment, Tourism, Science and Innovation

The Department of the Environment, Tourism, Science and Innovation acknowledges Aboriginal peoples and Torres Strait Islander peoples as the Traditional Owners and custodians of the land. We recognise their connection to land, sea and community, and pay our respects to Elders past, present and emerging.

The department is committed to respecting, protecting and promoting human rights, and our obligations under the Human Rights Act 2019.

Citation

DETSI. 2025. Swamp stringybark *Eucalyptus conglomerata* Recovery Action Plan 2025-2035. Queensland Government Department of the Environment, Tourism, Science and Innovation.

Acknowledgements

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INTRODUCTION

The 'swamp stringybark *Eucalyptus conglomerata* Recovery Action Plan' was developed as part of the Queensland Department of the Environment, Tourism, Science and Innovation (the department) *Threatened Species Program 2020–2040* framework. It provides the strategic management direction for the recovery of the swamp stringybark. The plan identifies the key threats impacting on the species and sets out the recovery actions needed to address these threats and facilitate the species' recovery in Queensland. The goals, objectives and actions under this plan have been based on the best available information and developed in collaboration with key stakeholders.

The adaptive management approach that underpins this Recovery Action Plan (RAP) ensures that evidence-based decision making, and the most effective management interventions are used in the recovery effort for the long-term.

Successful implementation of the recovery actions depends on the commitment and cooperation of all relevant stakeholders. The delivery of actions identified in the plan is a shared responsibility and one that is achieved through a collaborative and participatory approach. This document is non-statutory and does not bind any one potential contributor to resourcing or implementing the plan.

This RAP was approved by the department and is subject to modification as dictated by new findings, changes in status of the taxon or ecological community, and the completion of recovery actions. Information in this RAP was accurate as of February 2025.

Term and review date

Timeframe: 10 years from 2025 to 2035

Review date: 2030

For further information on this or other Recovery Action Plans please contact Threatened.Species@des.qld.gov.au.

Acronyms and Abbreviations

DETSI – Department of the Environment, Tourism, Science and Innovation

DETSI - TSO – Threatened Species Operations

DETSI - QHBS – Queensland Herbarium and Biodiversity Sciences

CG – Community Groups

KKPBC – Kabi Kabi Peoples Aboriginal Corporation

QPWS&P – Queensland Parks and Wildlife Service & Partnerships

NSC – Noosa Shire Council

RI – Research Institutions

SCC – Sunshine Coast Council

SUMMARY

Species

- Swamp stringybark, *Eucalyptus conglomerata*

Conservation Status

- Queensland *Nature Conservation Act 1992*: Endangered
- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC): Endangered
- Taxon status under the International Union for Conservation of Nature (IUCN) Red List of Threatened Species: Endangered

Current Population and Distribution

- The swamp stringybark is endemic to Queensland and found on the Sunshine Coast from Kin Kin in the north to Beerwah in the south. The swamp stringybark consists of 10 sub-populations and has been recorded from 22 locations. Population estimates from the early 1990's identifies the total population is approximately 1100 plants.

Key Threats

- Small and restricted population size.
- Inappropriate fire regimes.
- Changed surface and ground water regimes.
- Land use.

Vision Statement

By 2035, all known sub-populations of swamp stringybark and the habitat required for the survival of the species are protected. Management actions that are informed by the best available knowledge are being undertaken to reduce threats to the sub-populations and their habitat. The conservation of the swamp stringybark is embraced by the local community who are active participants in the species recovery.

Goals

1. Population monitoring measures swamp stringybark response to management and informs future management actions.
2. Research improves biological and ecological knowledge and management of swamp stringybark.
3. Threats that impact the swamp stringybark and its habitat are managed and populations are maintained or increased by 2035.
4. Improve engagement with the local community to increase support for the recovery and management of swamp stringybark.

FIRST NATIONS PEOPLE

The department is committed to progressing self-determination by recognising the rights and interests of First Nations people across Queensland. The *Gurra Gurra Framework 2020–2026* accelerates this commitment by reframing our relationship with First Nations peoples to work in genuine partnership to safeguard ecological and cultural values across Queensland.

The department acknowledges and respects First Nations peoples' lived experiences, knowledge, skills and expertise, and seeks to incorporate their perspectives into the policies, programs and systems that guide land and sea management. We commit to work in genuine partnership with First Nations people across Queensland to ensure their vision and knowledge of Country is appropriately reflected in the Threatened Species Program.

The swamp stringybark occurs on Kabi Kabi Peoples Aboriginal Corporation land. Consultation with the Kabi Kabi Peoples Aboriginal Corporation will occur as soon as practicable including ascertaining the cultural significance of swamp stringybark.

SPECIES BACKGROUND

Conservation Status

The status of the swamp stringybark is listed in Table 1.

Table 1 Status of the swamp stringybark

Legislation	Conservation status
Nature Conservation Act 1992	Endangered
Environment Protection and Biodiversity Conservation Act 1999	Endangered

The swamp stringybark is also listed as Endangered on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species and its population is considered to be declining (IUCN 2019).

Taxonomy and Description

The swamp stringybark *Eucalyptus conglomerata* (*Eucalyptus* series Capitellatae (Pachyphloiae), Myrtaceae) was first collected by C.T. White near Beerwah in 1919, with the species described by Maiden and Blakley in 1929 (Chippendale 1988). Swamp stringybark is a small tree or mallee shrub to 12m, with grey to grey-brown fibrous bark (stringybark) (Chippendale 1988). Adult leaves are dull green in colour, 6-10cm long and 1.5-2.5cm wide. Flowers are creamy white and up to 1cm in size (Halford 1996) on an angular or flattened peduncle 5-10mm long in umbels of seven (Chippendale 1988).

Biology and Ecology

Flowering has been observed in late autumn to early winter (Drake 1995). Flowers take approximately 12 months to develop, and flowering is influenced by climatic conditions rather than fire (T. Bean pers. comm. 2023). Pollination of the swamp stringybark has not been studied but is likely to be facilitated by bees or nectivorous birds, with fruit samples having consistent signs of insect damage, including insect larvae (Drake 1995). Seed germination in nurseries appears to be rapid and there does not appear to be any dormancy mechanisms (Drake 1995). However, seedlings have not been observed in the wild, even following fire (Drake 1995, Department of National Parks, Sports and Racing 2012).

Swamp stringybark regenerates vegetatively after fire and mechanical disturbance by producing shoots from stems, branches and lignotubers (Drake 1995, Department of National Parks, Sports and Racing 2012).

The fire requirements of the species are unknown, but Regional Ecosystems that the species has been recorded in have a recommended fire interval between 4-25 years, with the current intervals between prescribed fire generally being 7-15 years at many locations (C. Thompson, QPWS&P pers. comm. 2023).

Other aspects of the species' biology and ecology remain unstudied.

Species Population and Distribution

Swamp stringybark has a distribution extending from Kin Kin to Beerwah. Fensham et al. (2020) estimated its extent of occurrence (EOO) as 951 km^2 and area of occupancy (AOO) as 132 km^2. It is known from 10 sub-populations[1] and 22 known locations (Figure 1), with a total population size of

[1] This report aligns the term population with the IUCN definition to describe the total population size. The term sub-population is used to define the separate populations identified by Drake (1995) using criteria defined by the IUCN, while multiple locations contribute to sub-populations.

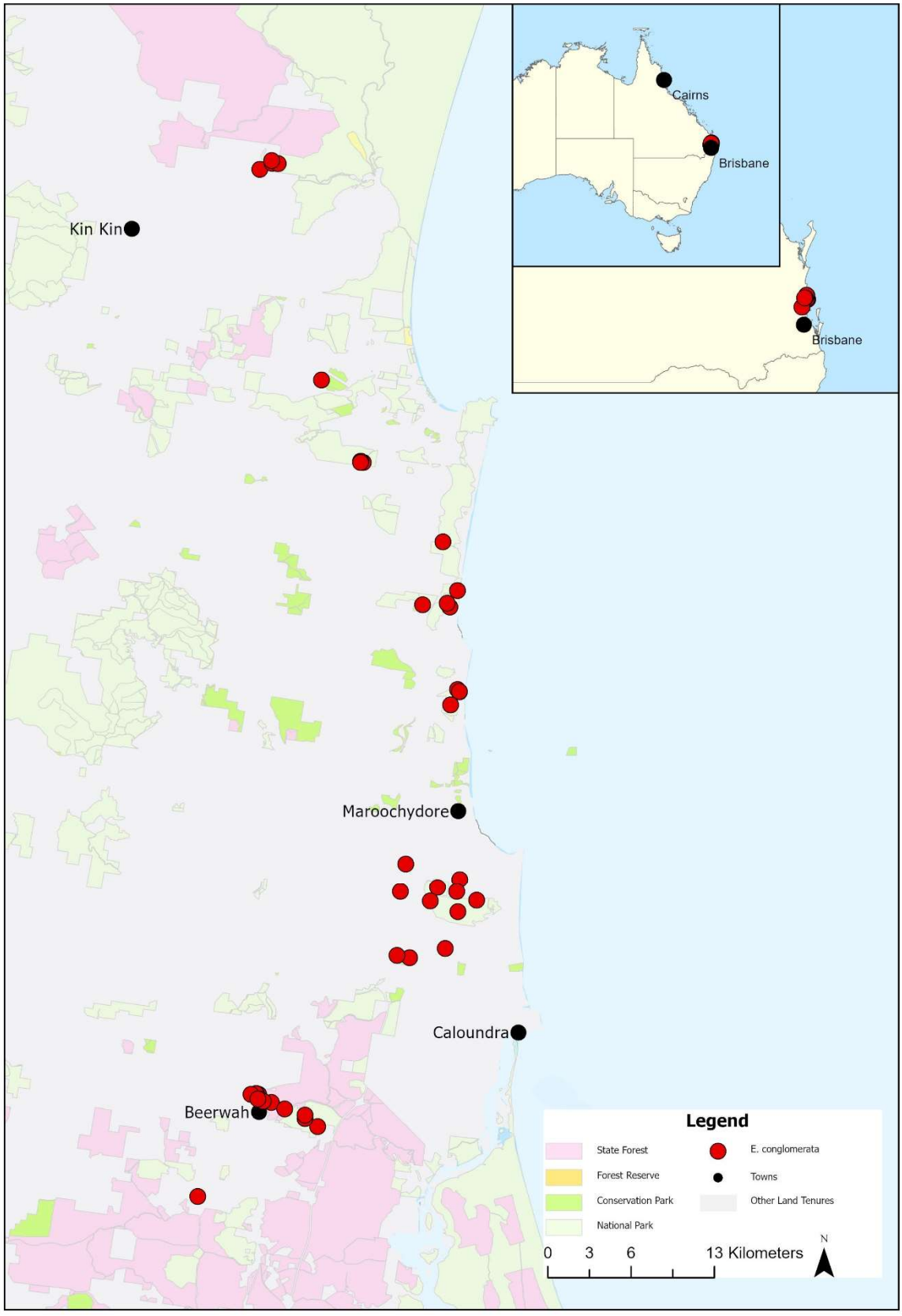

Figure 1 Distribution of the swamp stringybark

approximately 1100 plants (Drake 1995). Approximately one third of sub-populations occur on National Park or Conservation Park, one third on State Forest and Sunshine Coast Council Reserves and the remaining third on private land (Halford 1996). The largest single sub-population is known from Kin Kin, with approximately 234 trees across two locations (~21% of the total population), with most sub-populations consisting of less than 100 trees (Figure 2) (Drake 1995).

Since this data was collected by Drake (1995) sub-populations along the Eumundi – Noosa Rd and around the Mooloolah River National Park have been impacted by development (S. Novello pers. comm. 2023). However, it is unclear how this has impacted the total population size of the swamp stringybark.

Most sub-populations appear to consist of mature individuals, with only three of 22 locations recording trees as having an average diameter-at-breast-height (DBH) less than 100mm (Drake 1995). There has been no species wide assessment of status since Drake (1995) however a single sub-population in the Blue Gum Creek section of the Glass House Mountains National Park was re-surveyed in 2012 prior to and following a prescribed burn (Department of National Parks, Sports and Racing 2012). This assessment revealed very little change in the number of individuals (98 in 1995 compared with 102 in 2012) but noted a general increase in the number of stems in each size class and a lack of recruitment (Figure 3) (Department of National Parks, Sports and Racing 2012).

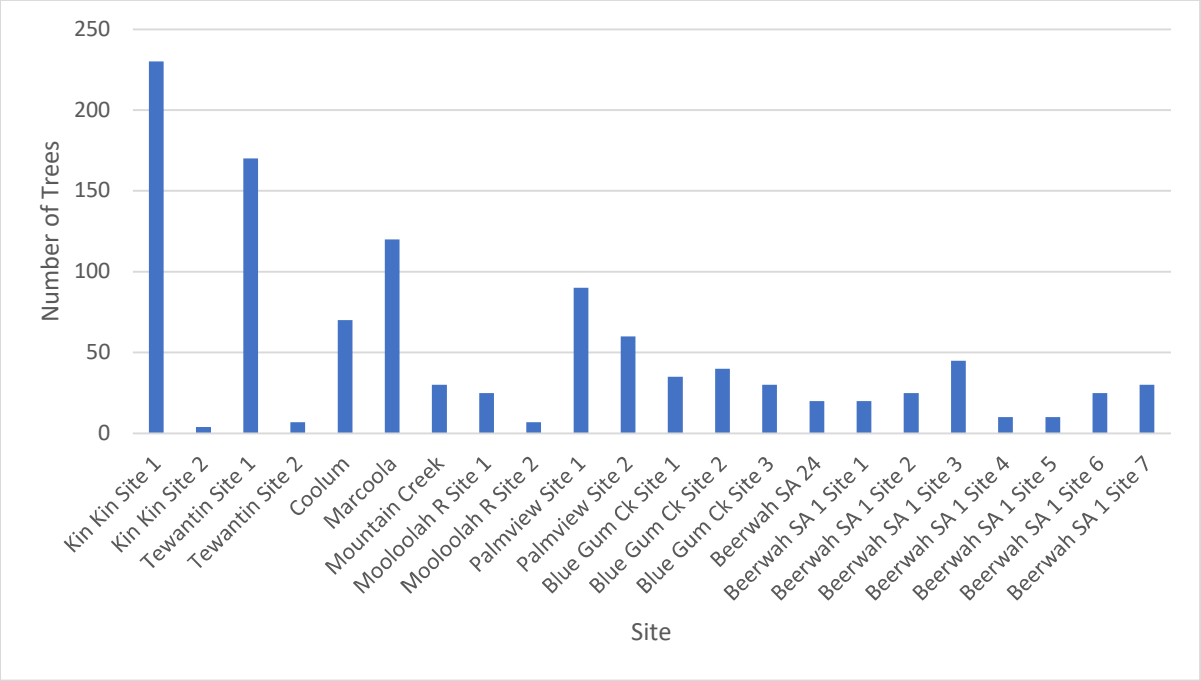

Figure 2 Number of individuals at each location swamp stringybark has been recorded (Drake 1995).

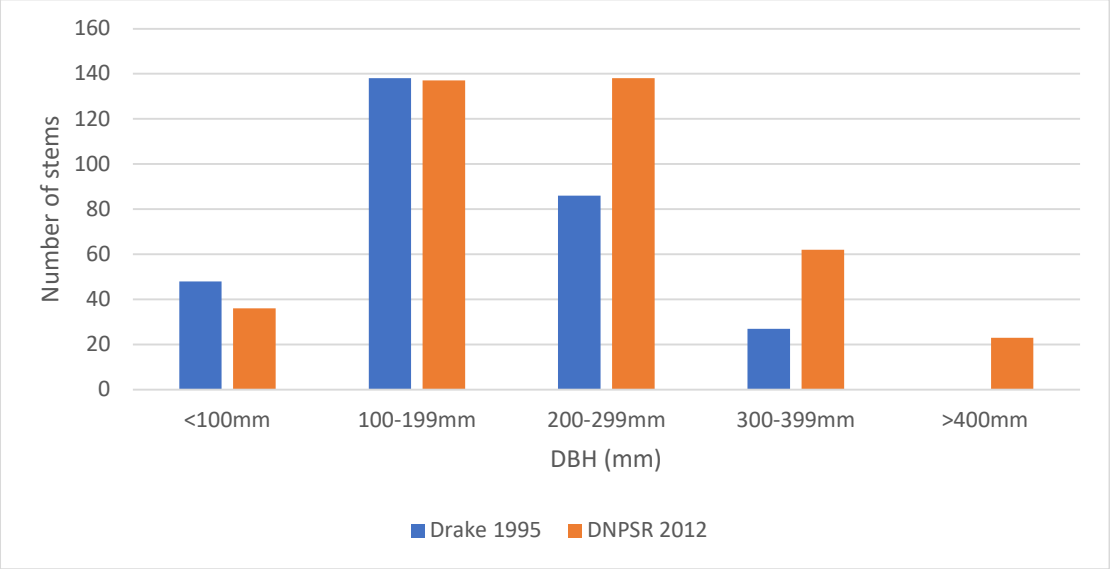

Figure 3 Difference in the number of stems per size class (DBH mm) at Blue Gum Creek between 1995 & 2012.

A recent review of the status of the entire genus Eucalyptus in Fensham et al. (2020) considered swamp stringybark to be declining (IUCN 2019) as threats remain active and little or no regeneration of individuals has been observed (Drake 1995, IUCN 2019). However, this assessment was not based on field data and the true extent of any decline is uncertain.

Habitat Requirements

The swamp stringybark grows on coastal flats to an altitude of 30m ASL. It typically occupies the margin between wet heath and open forests on deep, infertile sandy acidic soils (pH 3.9-5.2) (Halford 1996; T. Bean pers. comm. 2023). These areas are characterised by poor drainage and the soils can be seasonally waterlogged. Soil depth and soil moisture levels appear to be limiting factors in the species distribution. This is further supported by the observation of mature trees dying or resprouting due to periods of prolonged drought (Drake 1995).

Current Threats

Current threats to the swamp stringybark include:

- Small and restricted population size.
- Inappropriate fire regimes.
- Changed surface and ground water regimes.
- Land use.

Small and restricted population size

Drake (1995) undertook surveys of all known populations and identified 10 sub-populations of swamp stringybark from 22 locations, with the largest sub-population being 234 trees. A lack of recruitment into sub-populations has been observed (Drake 1995, Department of National Parks, Sports and Racing 2012). While eucalypts are long lived (Fensham et al. 2020), lack of recruitment could have serious implications for the future viability of smaller sub-populations, contributing to further fragmentation and population declines of the species.

The loss of individuals and/or sub-populations in small populations can result in reduced genetic variation, higher levels of inbreeding and the loss of unique alleles (Frankham et al. 2010). This can further contribute to loss of fitness within the species and potentially lead to population decline. Ex-situ management and/or translocations can assist with the management of genetic diversity; however, any such actions need to be informed by genomic analysis to ensure maximum genetic diversity is captured in ex-situ actions or translocations (Rosetto et al. 2021).

Pollination pathways of the swamp stringybark have not been studied and it remains unknown if cross pollination between sub-populations and/or locations is occurring.

Inappropriate fire regimes

Vegetative regeneration of swamp stringybark following fire has been observed in the wild, but recruitment from seed has not. It is thought fire may promote germination by reducing leaf litter and providing light for seedlings. However, frequent burning has the potential to threaten emerging seedlings (Drake 1995, Fensham et al. 2020) and the appropriate fire interval and intensity requires investigation (Threatened Species Scientific Committee 2008).

Fire management within the habitat occupied by swamp stringybark is based on the regime described in the SEQ Regional Planned Burn Guidelines (Queensland Government 2023). The Regional Ecosystems that the swamp stringybark has been recorded in have recommended fire intervals ranging from 4 to 25 years (Queensland Government 2023). The current fire interval is reportedly ~7-15 years and is driven by the need to reduce fire risk for adjacent urban areas and the fire requirements of co-occurring threatened fauna species (C. Thompson, QPWS&P pers. comm. 2023). The current fire regime should be maintained until changes are informed by research. The preferred fire regime to maintain swamp stringybark populations is unknown.

Changed surface and groundwater regimes

Urban development and associated infrastructure can alter both surface and groundwater regimes in swamp stringybark habitat. Stormwater discharge from developments can directly impact soil moisture levels, reducing the suitability of habitat for swamp stringybark (Drake 1995). Woody thickening of heathlands, particularly by broad-leaf paperbark *Melaleuca quinquenervia* has been observed (T. Doyle, QPWS&P pers. comm. 2024). This has potentially been caused by re-direction of stormwater and raised fire breaks which increases the hyrdoperiod in heathland habitats, facilitating woody thickening (T. Doyle, QPWS&P pers. comm 2024).

Land use

Clearing for urban development and agriculture have likely resulted in the considerable past loss of habitat for the swamp stringybark (Fensham et al. 2020). The former remains a significant threat, given the remaining distribution of the species relative to major development and transport corridors. The Sunshine Coast region is one of the most rapidly increasing population centres in Queensland (Mallawaarachchi et al. 2006; Spearitt 2009) and clearing for housing development and associated infrastructure (e.g. roads and other transport corridors, stormwater discharge) remains an ongoing threat to sub-populations and habitat of the swamp stringybark (Fensham et al. 2020). Remaining sub-populations that are located on private land remain at risk of loss and further fragmentation.

Potential Threats

Other potential threats to the species include, but are not limited to:

- Weed invasion.
- Human impacts.
- Plant pathogens.
- Climate change.

The impact of these potential threats is not well understood and there is limited evidence to suggest that actions to address these threats would improve recovery for swamp stringybark. A brief description of the current observations or knowledge on these threats is provided below and will be the subject of ongoing discussions or research as required. These threats are not currently considered a priority for the life of this plan.

Weed invasion: groundsel *Baccharis halimifolia* has been recorded within swamp stringybark habitat at Palmview Conservation Park (Drake 1995). Weeds may compete with swamp stringybark for moisture and nutrients and smother smaller plants, particularly seedlings, and may also increase fuel loads and alter fire regimes. The discharge of nutrient-laden storm water from existing or future developments has the potential to increase nutrients in the infertile soils that swamp stringybark is found, potentially assisting weed establishment (Drake 1995). Ongoing surveillance should be undertaken to ensure early detection and management of significant weeds.

Human impacts: where swamp stringybark is located in local parks or on the urban interface, individuals or sub-populations may be impacted by multiple human impacts, including rubbish dumping and people directly impacting trees (Drake 1995). These human impacts have the potential

to affect the long-term health of individuals and while unlikely to threaten the total population, some sub-populations, particularly small ones, could be severely impacted.

Plant pathogens: Myrtle rust (*Austropuccinia* spp.) impacts have been observed on new growth of a few swamp stringybark trees following fire. The limited extent of infection suggests that sub-population or species level impacts are unlikely (Department of National Parks, Sports and Racing 2012) and there is no evidence of myrtle rust being a substantial threat at a species level to any naturally occurring eucalypt populations (Fensham et al. 2020). Ongoing monitoring for myrtle rust infection may be warranted as evidence suggests that the susceptibility of some species may change over time, especially if new strains of myrtle rust develop and spread.

Recent detections of *Phytophthora cinnamomi* on the QPWS&P estate have occurred in south-east Queensland (J. Rowland, QPWS&P pers. comm. 2024). The development of Phytophthora dieback requires the presence of the pathogen, a susceptible host and suitable environmental conditions that favour infection (DEE 2024). It is currently unknown if the swamp stringybark is susceptible to *Phytophthora* spp. but cannot be ruled out.

Root rot *Phellinus noxius* is a disease that causes tree decay and death by causing root rot in trees and is naturally found in sub-tropical areas in Australia (DAF 2024). The susceptibility of the swamp stringybark to this disease is unknown.

Climate change: climate change has been considered a potential threat to swamp stringybark populations due to projections of reduced rainfall, increased periods of drought and increased temperatures in south-east Queensland, all of which contribute to more severe fire weather (CSIRO 2020). It has been noted that reduced annual average rainfall and increased periods of drought may cause habitat alteration and increased senescence of swamp stringybark sub-populations (Drake 1995, Department of National Parks, Sports and Racing 2012). However, moisture limits of eucalypt species range are poorly related to drought induced dieback (Fensham et al. 2014) and bioclimatic predictions cannot reliably predict the survival, extinction or impacts of climate change on eucalypt species (Fensham et al. 2020).

The impacts of these climate projections on swamp stringybark sub-populations and habitat, either individually or collectively, are unclear.

Threat Assessment

Each current threat has been assessed to determine their level of impact to the survival of the species (see Table 2). This has helped to inform the priorities for management response outlined in this plan. The qualitative assessment is based on current management practices. The levels of risk and associated priority for threats are defined below:

Very High – immediate mitigation action required

High – mitigation action and an adaptive management plan required, the precautionary principle should be applied

Moderate – obtain additional information and develop mitigation action if required

Low – monitor the threat occurrence and reassess threat level if likelihood or consequences change

Categories for likelihood are defined as follows:

Almost certain – expected to occur every year
Likely – expected to occur at least once every five years
Possible – might occur at some time
Unlikely – such events are known to have occurred on a worldwide basis but only a few times
Rare or Unknown – may occur only in exceptional circumstances; OR it is currently unknown how often the incident will occur

Categories for consequences are defined as follows:
Not significant – no long-term effect on individuals or population
Minor – individuals are adversely affected but no effect at population level

Moderate – population recovery stalls or reduces
Major – population decreases
Catastrophic – population extinction

Table 2 Threats to the swamp stringybark including the extent and risk of the threat.

Likelihood of occurrence	Consequences				
	Not significant	Minor	Moderate	Major	Catastrophic
Almost certain					
Likely				**Land use** **Changed surface water and groundwater regime**	
Possible			**Small and restricted population**	**Inappropriate fire regimes**	
Unlikely					
Rare or unknown					

Previous and current conservation and management actions

Drake (1995) prepared a recovery statement for the swamp stringybark and it remains the most comprehensive summary of threats and recovery actions of the species to date. A Conservation Advice (Threatened Species Scientific Committee 2008) was prepared and largely draws on information from Drake (1995) with some additional material. This information has been used to summarise the species biology and ecology as well as the threats. Many of the actions from these documents are reflected in this Recovery Action Plan with additional actions to address contemporaneous threats.

A local community group, Noosa Bush Beach and Creek Care Association, is actively involved in the species management, including the propagation and planting of the species in the Noosa area. The potential for continuation of this work, and the benefits of ex-situ and translocation actions, will be determined following genomic analysis.

RECOVERY STRATEGY

This Recovery Action Plan guides recovery actions for swamp stringybark for the next 10 years, by explicitly considering actions to address the species current threats. Potential threats may be considered within the context of monitoring or research actions but are not otherwise addressed.

Vision

The long-term vision of the recovery program for the swamp stringybark extends beyond the life of this plan but is important to state to ensure a consistent, long-term strategy.

By 2035 all known sub-populations of swamp stringybark and the habitat required for the survival of the species are protected. Management actions that are informed by the best available knowledge are being undertaken to reduce threats to the sub-populations and their habitat. The conservation of the swamp stringybark is embraced by the local community who are active participants in the species recovery.

Goals

There are four goals presented in the following section, each with specific objectives and actions, that are practical and operational steps toward achieving the long-term vision. These goals are for the life of the plan.

1. Population monitoring measures swamp stringybark response to management and informs future management actions.
2. Research improves biological and ecological knowledge and management of swamp stringybark.
3. Threats that impact the swamp stringybark and its habitat are managed and populations are maintained or increased by 2035.
4. Improve engagement with the local community to increase support for the recovery and management of swamp stringybark.

Recovery Action Table

Actions identified for the recovery of the swamp stringybark during the life of this plan are described below under each of the relevant goals and objectives. The information in the Action Table should be interpreted as follows:

Factor	Description	1	2	3
Priority	Level of importance of the action	Taking prompt action is necessary to mitigate the threats and ensure the persistence of the species	Action is necessary to mitigate threats and work towards the long-term recovery of the species	Action is desirable, but not critical to recovery at this time but will provide for longer term recovery
Timeframe	Expected time to implement and /or achieve the result	Very short: 1-2 years	Short: 2-5yrs	Medium: 5-10yrs

Cost[1] - Indicative cost estimate $100s; $1000s; $10,000s; $100,000s; $1,000,000s

Potential Contributors[2] - Identify who leads the action (L). Other contributors (C) are also identified where possible

Notes

1. Costs do not account for inflation, and do not include standard management activities on conservation estate by the department that are to be considered as in-kind contribution. If an action is attributed a cost and it is led by the department then at least a partial in-kind contribution is assumed. The provision of funds necessary to implement actions are subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities.
2. The nominated lead for actions is not necessarily responsible for cost, however the lead should coordinate as necessary to determine source/s of funding for the activity.

Recovery Action Tables for the swamp stringybark that lists the goals, objectives, performance indicators and actions for the duration of the plan.

Goal 1: Population monitoring measures swamp stringybark response to management and informs future management actions.

Objective 1.1: By 2035, the response of swamp stringybark to management actions is understood and trends in the population have been assessed.

Performance indicators

- Scientifically robust monitoring methodology has been developed for swamp stringybark.
- All known sub-populations have been re-surveyed.
- Population and sub-population trends have been assessed and reported to QPWS&P, SCC and DETSI-TSO.

Action	Priority	Indicative cost	Timeframe	Potential Contributors
1.1.1 Develop population and habitat monitoring plan and commence implementation by June 2025.	1	$10,000's	1	DETSI-TSO (L), QPWS&P (C), SCC (C), FNG (C), QHBS (C)
1.1.2 As sufficient data is collected, undertake analysis to increase understanding of trends in populations	2	$1,000's	2	DETSI-TSO (L), QPWS&P (C), SCC (C), QHBS (C)
1.1.3 Periodically review management actions based on observed population trends.	3	$1,000's	3	DETSI-TSO (C), QPWS&P (C), SCC (C), QHBS (C)

Objective 1.2: Review impact of threats to all sub-populations of swamp stringybark and identify management actions by 2025.

Performance indicators

- Threats to swamp stringybark are known and research informs management interventions.

Action	Priority	Indicative cost	Timeframe	Potential Contributors
1.2.1 Conduct assessment of known threats to each sub-population, clarify impacts and identify priority management actions by December 2025.	1	$1,000's	1	DETSI-TSO (L), (QPWS&P (C), SCC (C)
1.2.2 Implement appropriate threat mitigation actions in priority areas.	1	$10,000's	1	DETSI-TSO (C), (QPWS&P (C), SCC (C)

Goal 2: Research improves biological and ecological knowledge and management of swamp stringybark.

Objective 2.1: Research to improve our understanding of the life history, ecology, and germination requirements of swamp stringybark has been undertaken by 2035.

Performance indicators

- Reproductive strategies and requirements, including population age structure, generation length, time to reproductive maturity, response to fire and germination requirements, are well understood and informs management.
- Conservation genetics of swamp stringybark are well understood and informs management responses.

Action	Priority	Indicative cost	Timeframe	Potential Contributors
2.1.1 Undertake research to document population age structure, conservation genetics, habitat constraints, reproductive strategies, and response to fire for swamp stringybark by 2035.	1	$10,000's	1	DETSI-TSO (L), QPWS&P (C), SCC (C), RI (C)
2.1.2 Incorporate research findings into management strategies, including fire and genetic conservation strategies, for swamp stringybark and its habitat by 2035.	2	$1,000's	3	QPWS&P (L), SCC (L)

Goal 3: Threats that impact the swamp stringybark and its habitat are managed, and populations are maintained or increased by 2035.

Objective 3.1: Reduce the impact of inappropriate fire regimes and unplanned fires on swamp stringybark habitat and populations by 2035.

Performance indicators

- Response of swamp stringybark to fire is incorporated into the fire management regime for the swamp stringybark.
- Wildfire is prevented from impacting swamp stringybark sub-populations.
- Ongoing monitoring identifies recruitment and increased population size of swamp stringybark.

Action	Priority	Indicative cost	Timeframe	Potential Contributors
3.1.1 Implement prescribed burns in line with appropriate fire regimes in swamp stringybark habitat to maintain/increase populations.	2	$10,000's	2	QPWS&P (L), SCC (L)
3.1.2 Undertake post-fire monitoring of swamp stringybark and share findings with stakeholders.	3	$10,000's	3	QPWS&P (C), SCC (C), RI (C)

Objective 3.2: Reduce the impacts of urban and infrastructure developments to swamp stringybark populations by 2035.				
Performance indicators • All swamp stringybark populations are protected in Council or QPWS reserves or private conservation areas.				
Action	**Priority**	**Indicative cost**	**Timeframe**	**Potential Contributors**
3.2.1 Engage with urban and infrastructure managers to avoid and/or mitigate direct and indirect impacts to swamp stringybark sub-populations and habitat.	2	$1,000's	2	TBD
3.2.2 Identify options to provide long-term protection to swamp stringybark sub-populations on private land.	2	$1000's	3	QPWS&P (C), SCC (C), DETSI-TSO (C)

Goal 4: Improve engagement with the local community to increase support for the recovery and management of swamp stringybark.

Objective 4.1: Increase participation of Kabi Kabi Peoples Aboriginal Corporation and incorporation of their land management practices in the management of swamp stringybark habitat by 2035.				
Performance indicators • Kabi Kabi Peoples Aboriginal Corporation participate in the planning and implementation of swamp stringybark management. • Cultural burning practices are incorporated into the management of swamp stringybark habitat.				
Action	**Priority**	**Indicative cost**	**Timeframe**	**Potential Contributors**
4.1.1 Investigate opportunities to incorporate Kabi Kabi Peoples Aboriginal Corporation knowledge into prescribed burning programs and/or implement fire programs.	2	$10,000s	2	QPWS&P (C), SCC (C), FNG (C)
Objective 4.2: Increase the profile of the swamp stringybark in the local community by 2028.				
Performance indicators • Increase in the number of local community members actively involved in, or supporting, the recovery of swamp stringybark.				
Action	**Priority**	**Indicative cost**	**Timeframe**	**Potential Contributors**
4.2.1 Use various media opportunities to promote the conservation value of the swamp stringybark.	1	$100's	1	DETSI-TSO (L), QPWS&P (C), SCC (C)
4.1.2 Identify opportunities for community participation (e.g. weed management, population monitoring, citizen science) in the recovery of the swamp stringybark and engage the community where appropriate.	2	$1,000's	2	QPWS&P (L), SCC (L), DETSI-TSO (C)

EVALUATION AND REVIEW

The plan will be implemented as resources allow by the relevant parties listed in the Recovery Action Table. A working group or recovery team may be established to support the implementation of actions and reporting of recovery outcomes.

Performance indicators are used to evaluate progress toward meeting the objectives. A comprehensive review of the extent to which actions have been delivered and progress made towards the goals of the plan will be undertaken after five years, and again at the completion of the plan. More frequent reviews may be undertaken if actions or research/learnings highlight a need. The evaluation findings will inform future implementation and improve program effectiveness.

All actions have been prioritised based on their benefit to the species, their likelihood of success and their cost. The provision of funds necessary to implement actions are subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities.

This plan may be changed at any point in time, in consultation with all stakeholders and the Kabi Kabi Peoples Aboriginal Corporation, to respond to unforeseen events.

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APPENDIX 1: Statement of Co-Benefit

Several other flora species listed under the NCA have been recorded as co-occurring with, or in the immediate vicinity of, swamp stringybark and as having similar threats. These actions listed above are likely to have positive outcomes for these listed species.

Species	NCA	EPBC Act
Acronychia littoralis	Endangered	Endangered
Allocasuarina emuina	Endangered	Endangered
Boronia keysii	Vulnerable	Vulnerable
Lenwebbia sp. (Blackall Range P.R.Sharpe 5387)	Endangered	
Pecteilis harroldii	Endangered	
Prasophyllum wallum	Vulnerable	Vulnerable
Zieria exsul	Critically Endangered	Critically Endangered