

PROJECT TIMELINE (DETAILED)

2015	<p>Flora, Vegetation Studies – Proposed Weed and Botanical Assessment of Hotham River Project was undertaken by Mattiske Consulting Pty Ltd of the Hotham</p>	<p>River and Tunbridge Gully Project area which found <i>Juncus acutus</i> was invading the project area.</p>
2016	<p>Stage 1 weed control was conducted March - April 2017 across the Tunbridge Gully Project area. Boddington District High School (BDHS) students grew seedlings for the July 2016 planting event.</p> <p>Total amount of seedlings planted: 350 Total number of volunteers: 24</p>	<p>Species planted include: <i>Eucalyptus patens</i> – Swan River Blackbutt <i>Eucalyptus rudis</i> – Flooded Gum <i>Eucalyptus wandoo</i> – White Gum <i>Melaleuca raphiophylla</i> – Swamp Paperbark <i>Melaleuca cuticularis</i> – Saltwater Paperbark</p>
2017	<p>Spraying for <i>Juncus acutus</i> – Glyphosate 360 (frog friendly) and Wetter. All areas of the Hotham River and Tunbridge Gully project were sprayed.</p> <p>Total amount of seedlings planted: 520 Total number of volunteers - 66</p> <p>Species planted include: <i>Allocasuarina humilis</i> – Dwarf Sheoak <i>Calothamnus quadrifidus</i> – One Sided Bottlebrush <i>Casuarina obesa</i> – Swamp Sheoak</p>	<p><i>Hakea undulata</i> – Baby leafed hakea <i>Hakea lissocarpha</i> – Honey Bush <i>Juncus pallidus</i> – Pale rush <i>Juncus pauciflorus</i> – Loose Flower Rush <i>Juncus subsecundus</i> – Finger rush <i>Melaleuca incana</i> – Grey honey myrtle <i>Melaleuca raphiophylla</i> – Swamp paperbark</p> <p>One monitoring transect established in May 2017 Photo monitoring points established</p>
2018	<p>Spraying for <i>Juncus acutus</i> – Glyphosate 360 (frog friendly) and Wetter. Note: private property closest to dam not sprayed due to access issues. A cool burn was conducted throughout the area in April 2018 by the members from the Boddington Shire local volunteer brigades to reduce the head mass of <i>Juncus acutus</i>.</p> <p>Total amount of seedlings planted: 9,500 Total number of volunteers: 131</p>	<p>Seed supply: <i>Bolboschoenus caldwellii</i> – Marsh Club rush <i>Carex appressa</i> WA – Tall Sedge <i>Chorizandra enodis</i> – Black Bristlerush <i>Ficinia nodosa</i> – Knotted Club Rush <i>Gahnia trifida</i> – Coast Saw sedge <i>Juncus subsecundus</i> – Finger Rush <i>Microlaena stipoides</i> – Weeping Grass</p>
2019	<p>Spraying for <i>Juncus acutus</i> – Glyphosate 360 (frog friendly) SOA and Wetter (two private properties at the commencement of the Gully were not sprayed)</p> <p>Total amount of seedlings planted: 5,588 Total number of volunteers - 111</p> <p>Species planted include: <i>Allocasuarina humilis</i> – Dwarf Sheoak <i>Acacia microbotrya</i> – Manna wattle <i>Anigozanthos manglesii</i> – Red & green kangaroo paw <i>Atriplex semibaccata</i> – Creeping Saltbush <i>Callistemon phoeniceus</i> – Lesser bottle brush <i>Calothamnus quadrifidus</i> – Crimson net bush</p>	<p><i>Casuarina obesa</i> – Swamp Sheoak <i>Eucalyptus patens</i> – Swan river Blackbutt <i>Eucalyptus rudis</i> – Flooded gum <i>Hakea undulata</i> – Baby leafed hakea <i>Juncus pallidus</i> – Pale rush <i>Juncus subsecundus</i> – Finger rush <i>Kennedia coccinea</i> – Coral creeper <i>Kennedia prostrata</i> – Running postman <i>Kunzea recurva</i> – Mauve kunzea <i>Melaleuca incana</i> – Grey honey myrtle <i>Melaleuca raphiophylla</i> – Swamp paperbark <i>Melaleuca viminea</i> – Mohan</p>
2020	<p>Spraying for <i>Juncus acutus</i> – Glyphosate 360 (frog friendly) SOA and Wetter. Note: one private property closest to dam not sprayed due to access issues.</p> <p>Total amount of seedlings planted: 6,352 Total number of volunteers - 83</p> <p>Species planted include: <i>Acacia microbotrya</i> – Manna wattle <i>Anigozanthos manglesii</i> – Red & green kangaroo paw <i>Atriplex semibaccata</i> – Creeping saltbush <i>Callistemon phoeniceus</i> – Lesser bottle brush <i>Calothamnus quadrifidus</i> – Crimson net bush</p>	<p><i>Casuarina obesa</i> – Swamp Sheoak <i>Eucalyptus patens</i> – Swan river Blackbutt <i>Eucalyptus rudis</i> – Flooded gum <i>Hakea undulata</i> – Wavy leafed hakea <i>Juncus pallidus</i> – Pale rush <i>Juncus subsecundus</i> – Finger rush <i>Kennedia coccinea</i> – Coral creeper <i>Kennedia prostrata</i> – Running postman <i>Kunzea recurva</i> – Mauve kunzea <i>Melaleuca incana</i> – Grey honey myrtle <i>Melaleuca raphiophylla</i> – Swamp paperbark <i>Melaleuca viminea</i> – Mohan</p>

CASE STUDY 040
2015-2021

REGIONAL GOALS

People

Biophysical



Restoration of Tunbridge Gully

Restoration of Tunbridge Gully is a collaborative community project to improve the health of Tunbridge Gully and the Hotham River in Boddington. The project was to enable the removal of the invasive weed *Juncus acutus*, which threatens the biodiversity and ecology of Tunbridge Gully and the Hotham River and restore the creekline with local native plant species and improving the amenity of the area.

Tunbridge Gully is a tributary of the Hotham River one of the two major rivers within the Hotham-Williams subcatchment of the Peel-Harvey Catchment.

The removal of invasive weeds and restoration of the area aims to improve the overall health of the waterway which in turn leads to environmental, cultural and recreational benefits. Engagement with the Boddington community, including the local school through planting events has led to increased awareness of invasive weeds, increased cultural awareness and the importance of the waterways within the Peel-Harvey catchment.

FUNDING PROGRAM

South32 Worsley Alumina

PHCC PROGRAM

Hotham-Williams

PHCC PROJECT

Restoration of Tunbridge Gully

FUNDING

South32 Worsley Alumina \$158,006

IN KIND

Boddington District High School, Friends of the Reserves – Boddington (Inc), Shire of Boddington, Newmont Australia

REGIONAL COVERAGE



LOCATION

Slightly south of the Boddington Town Site, bordering either side of the Bannister/ Marradong Road

STAKEHOLDERS

South32 Worsley Alumina, Boddington District High School, Friends of the Reserves – Boddington (Inc), Shire of Boddington, Newmont Australia

BENEFICIARIES

Hotham-Williams community, Tunbridge Gully & Hotham River, Boddington Community

PROJECT MANAGER

Mel Durack

STEERING COMMITTEE

Hotham-Williams Steering Committee - Darralyn Ebsary, Eliza Dowling, Claire Reid



BURNING



SPRAYING



MONITORING



PLANTING

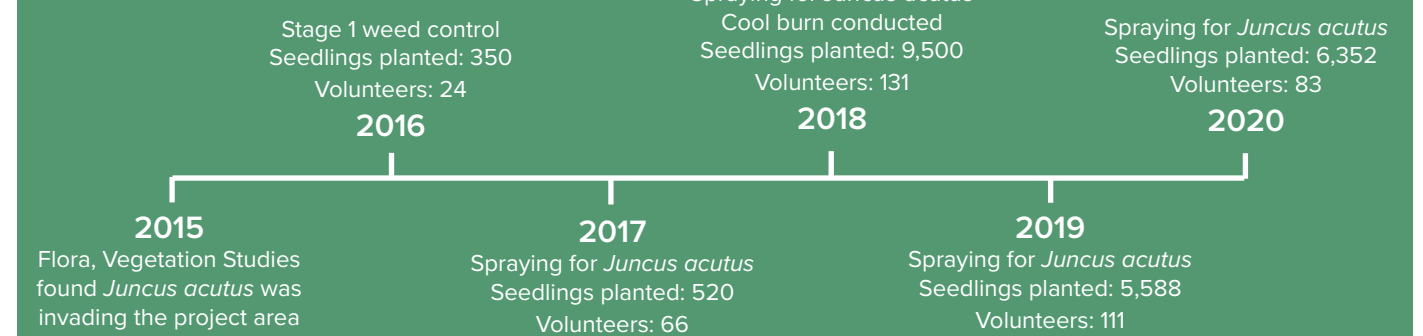
Juncus acutus

Tunbridge Gully commences at the base of the Boddington water supply dam (adjacent to Newmarket Road) and flows through Blue Gum Park, along Hakea Road, to the east of the Boddington Pool and into the Hotham River. 80% of this area was heavily infested with *Juncus acutus* (Sharp Rush).

Sharp rush is an erect robust tussock-forming perennial herb to 1.5m height. It has numerous unbranched cylindrical flowering stems (culms) 2 to 5 mm in diameter that are glabrous, rigid, slightly furrowed and filled with continuous pitch. Similar in appearance, leaves are blue-green, numerous and emerge from the base of the plant giving it its hemispherical shape. A distinguishing feature is the stiff, sharply pointed, leaves and bracts that terminate in a tip that is painful to touch. (Managing Weeds in Bushland – Urban Nature Department of Environment and Conservation).



PROJECT TIMELINE



KEY OUTCOMES

- To improve the biodiversity and ecological function of Tunbridge Gully and Hotham River by removing invasive weeds and planting native vegetation.
- Increase cross cultural knowledge through engagement with local Noongar community.
- Provide education and training opportunities for long term site works and maintenance.
- Improve aesthetics and recreational opportunities.
- Establish demonstration site.

FUTURE ACTIVITIES

PHCC plans to continue restoration activities at iconic local areas such as Tunbridge Gully as identified in the recent Hotham-Williams River Action Plan.

VOLUNTEERS

Peel-Harvey Catchment Council, South32 Worsley Alumina, Boddington District High School, Friends of the Reserves - Boddington (Inc.), Newmont Australia and Shire of Boddington

PUBLIC AWARENESS

Juncus acutus (Spiny Rush) is known to hybridise with the native *Juncus kraussii*, which has a marginally greater salinity tolerance. It has the potential to displace *Juncus kraussii*, particularly in areas that received regular freshwater input. (FloraBase – the Western Australian Flora database).

COLLABORATION

Peel-Harvey Catchment Council, South 32 Worsley Alumina, Boddington District High School, Friends of the Reserves - Boddington (Inc.), Newmont Australia and Shire of Boddington.

LINKS TO OTHER PROJECTS

Hotham-Williams Rivers & Tributaries' Natural Resource Management and Conservation Project (PHCC & Newmont Boddington partnership).

REFERENCES

FloraBase – *Juncus acutus* L. Spiny Rush <https://florabase.dpaw.wa.gov.au/browse/profile/1175>

Managing Weeds in the Bushland – Sharp Rush *Juncus acutus* – Urban Nature Department of Environment and Conservation, Swan Region

www.dpaw.wa.gov.au/images/documents/conservation-management/off-road-conservation/urban-nature/brochures/sharp_rush_juncus_acutus_managing_weeds_in_bushland.pdf

