Evaluating Riparian Buffer Zones in Temperate Streams

BACI and Space-For-Time, comparing two approaches used for monitoring invasive species removal and riparian restoration in south-eastern Australia

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Willows in Australian streams

Willows in the Upper Barwon Catchment

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Willows removal works

Riparian restoration of Charley Creek Tributary in the Gellibrand catchment, photo from the Corangamite Catchment Management Authority

Before-After-Control-Impact

Monitoring start

2020 2021 2022 2023 2024

Willow removal works

Monitoring end

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Medium- to Long-term effects of Willow removal and riparian revegetation

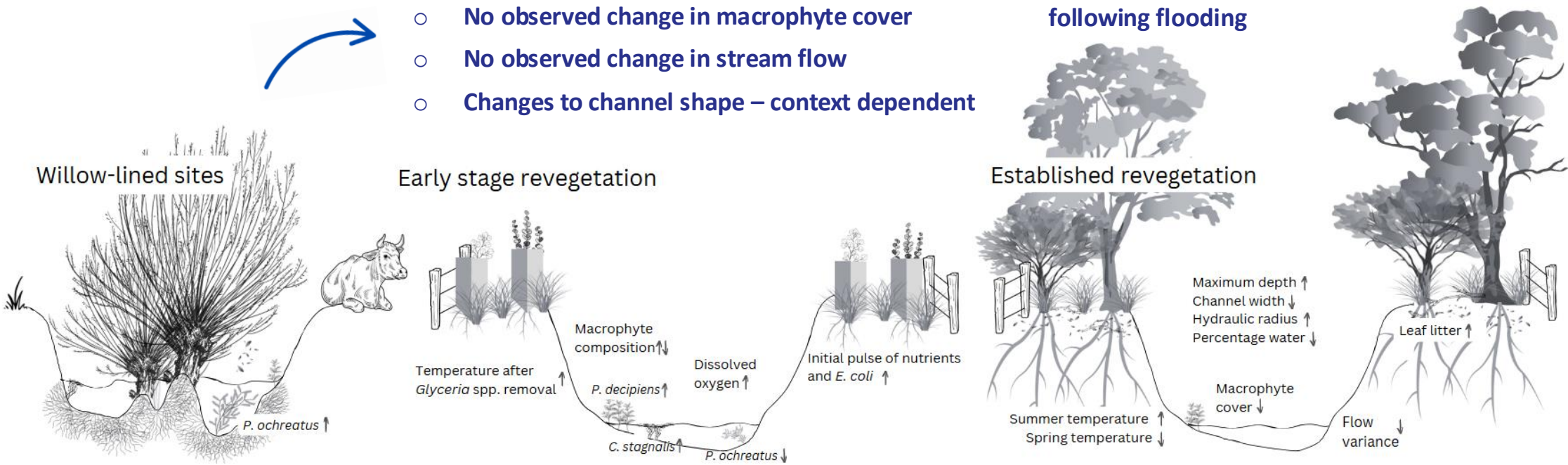
Revegetation sites
(ages 3-18 years)

Willow sites

Synthesis

- Initial pulse of poor water quality
- Increases in dissolved oxygen
- Increases in temperature (possible to ameliorate with flow releases)
- **No observed change in macrophyte cover**
- **No observed change in stream flow**
- **Changes to channel shape – context dependent**

- **Decrease in spring temperatures**
- **Increase in summer temperature**
- **Deeper, narrower channels with higher hydraulic radius**
- **More homogenous stream flow**
- **Increased scouring of aquatic macrophytes following flooding**



Thank you

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