

# Water, Watercourses and the WMLR

Dr Nadine Kilsby



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What are environmental flows  
and why do we need them?

## **Environmental water requirements**

- Volume, timing, frequency and duration of flow needed to maintain aquatic ecosystems at a low level of risk

## **Environmental water provisions**

- Negotiated outcome that considers all water users in determining how much water is available for the environment



1994

Environment recognised as a legitimate water user



1999 - 2005

Investigations and planning



2005

Prescription of WMLR water resources



2005 - 2013

WMLR Water Allocation Plan (WAP)



2011 - 2014

Environmental flows trial



2015

Environmental flows on licence



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*'neither desirable or realistic to restore the original flow regime...*

*'maintain the remaining, reduced ecological values while recognising the inherent limitations of high levels of development and urbanisation...'*

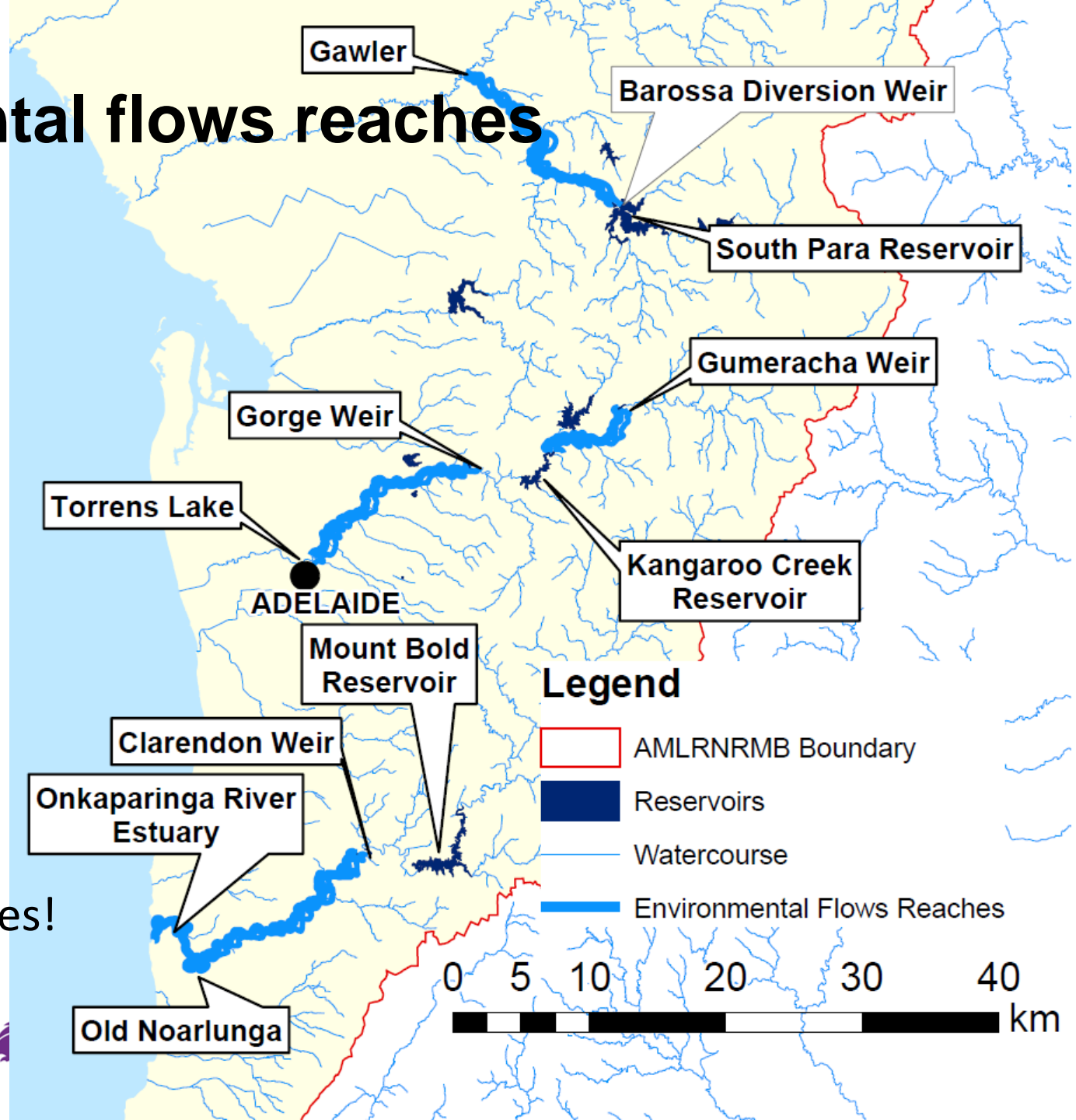
*Deliver a flow regime that maximises the probability of achieving self-sustaining populations of native biota that currently exist within the area, with increased resilience to periods of drought.*



# Environmental flows reaches

- 4 river reaches
- Flow release mechanism available
- Valuable aquatic environment likely to respond well to eflows

Low-flow bypasses!



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The background features several large, overlapping, organic shapes in a light purple color against a white background. These shapes are curved and fluid, creating a modern, abstract aesthetic. The text is centered within the composition.

Delivering environmental  
flows











What has been delivered?

# WMLR WAP 2013

*'SA Water has an obligation to ensure public water supply, and is also required to provide reasonable environmental flows in these watercourses.'*

*SA Water will supply up to 16.5 GL annually to be released from its reservoirs for environmental flow purposes, subject to the outcomes of trial investigations of required flow regime.'*



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# South Para

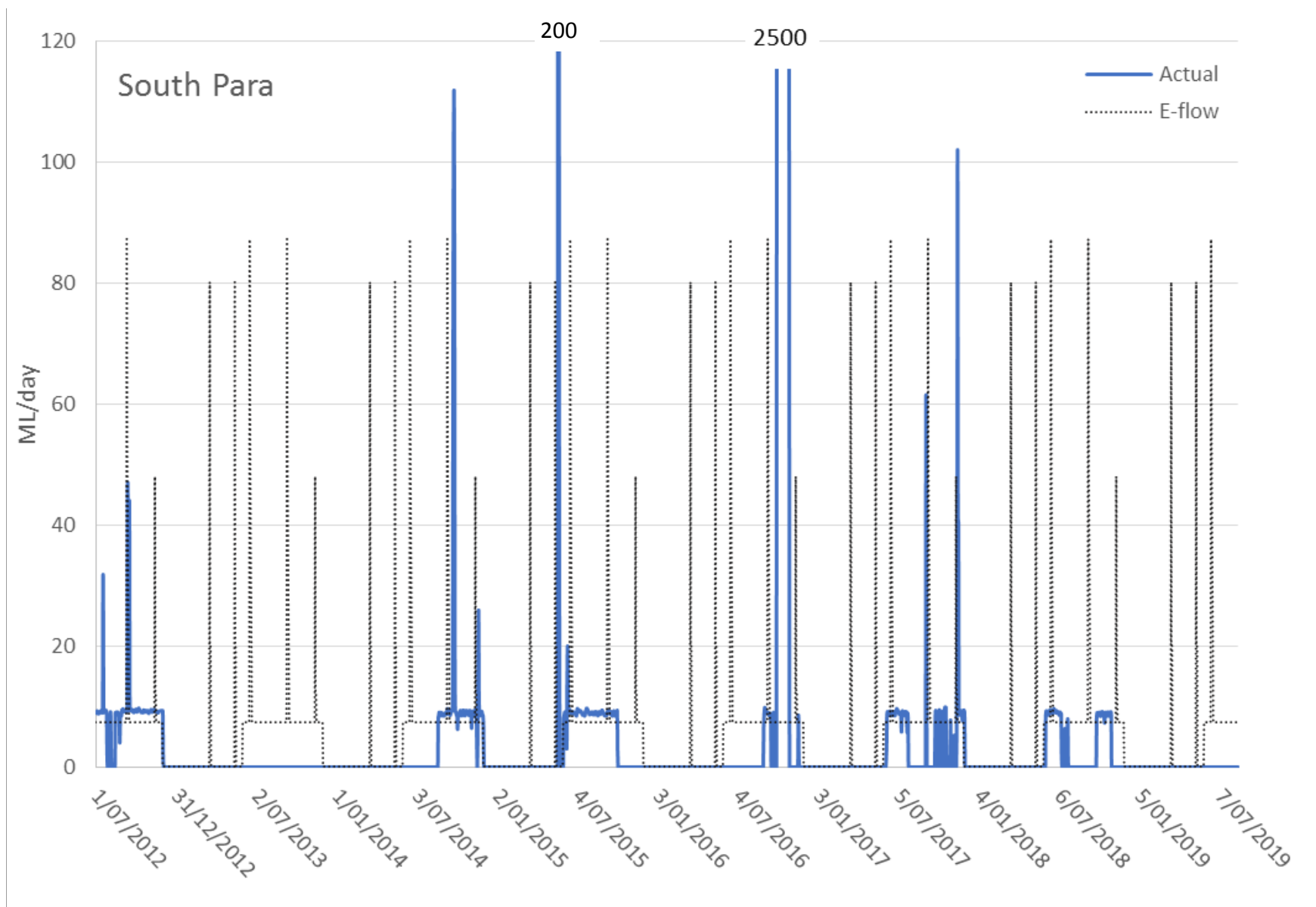
Total planned: 2.015 GL

Cease to flow: Dec-Mar  
Base: 7.32 ML/day  
Flush: 86,55,40,30,20 ML/day  
Fresh: 48,12,12 ML/day  
Fresh: 80,20,20 ML/day



Gove  
Sout





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# Onkaparinga

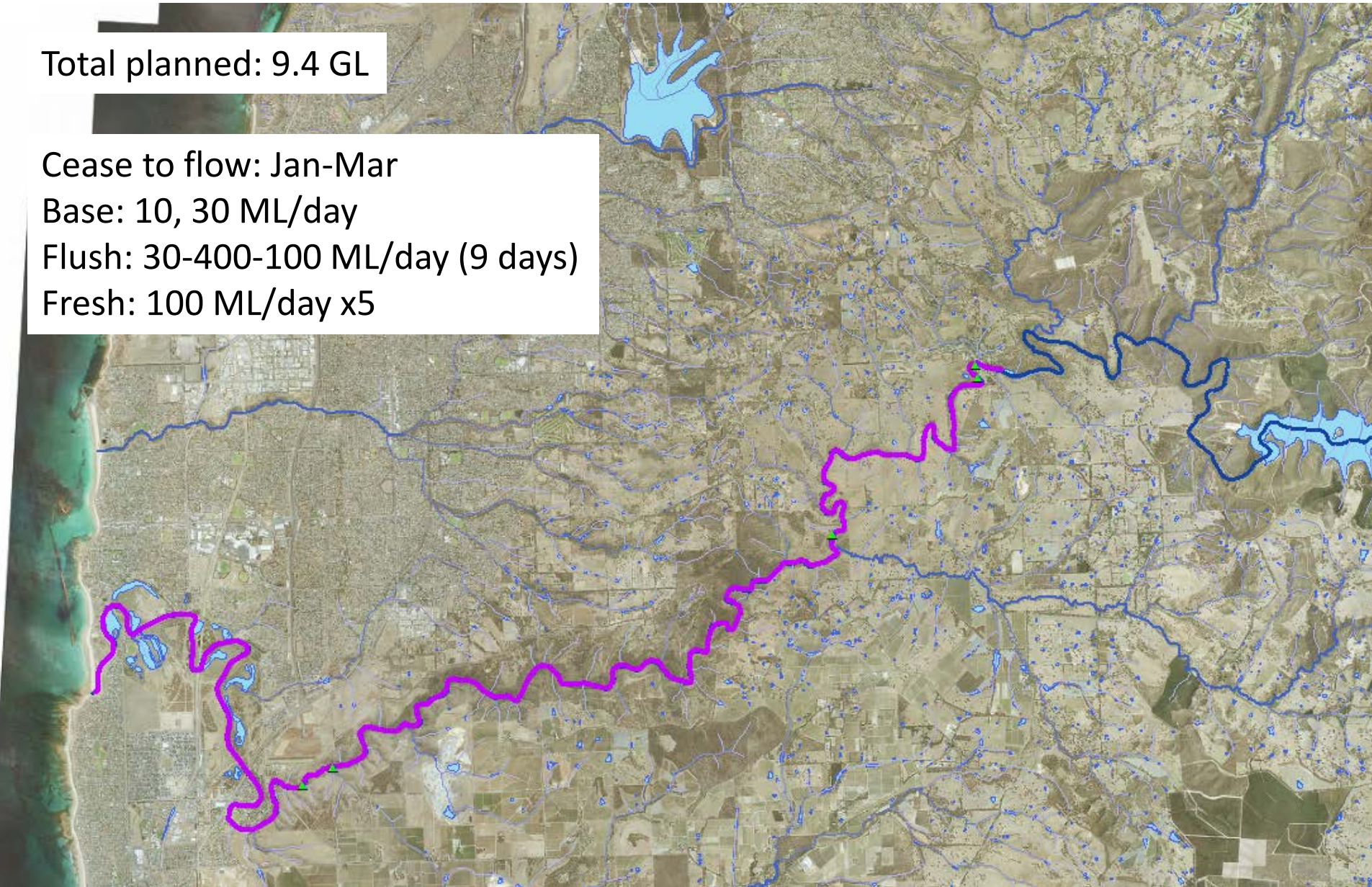
Total planned: 9.4 GL

Cease to flow: Jan-Mar

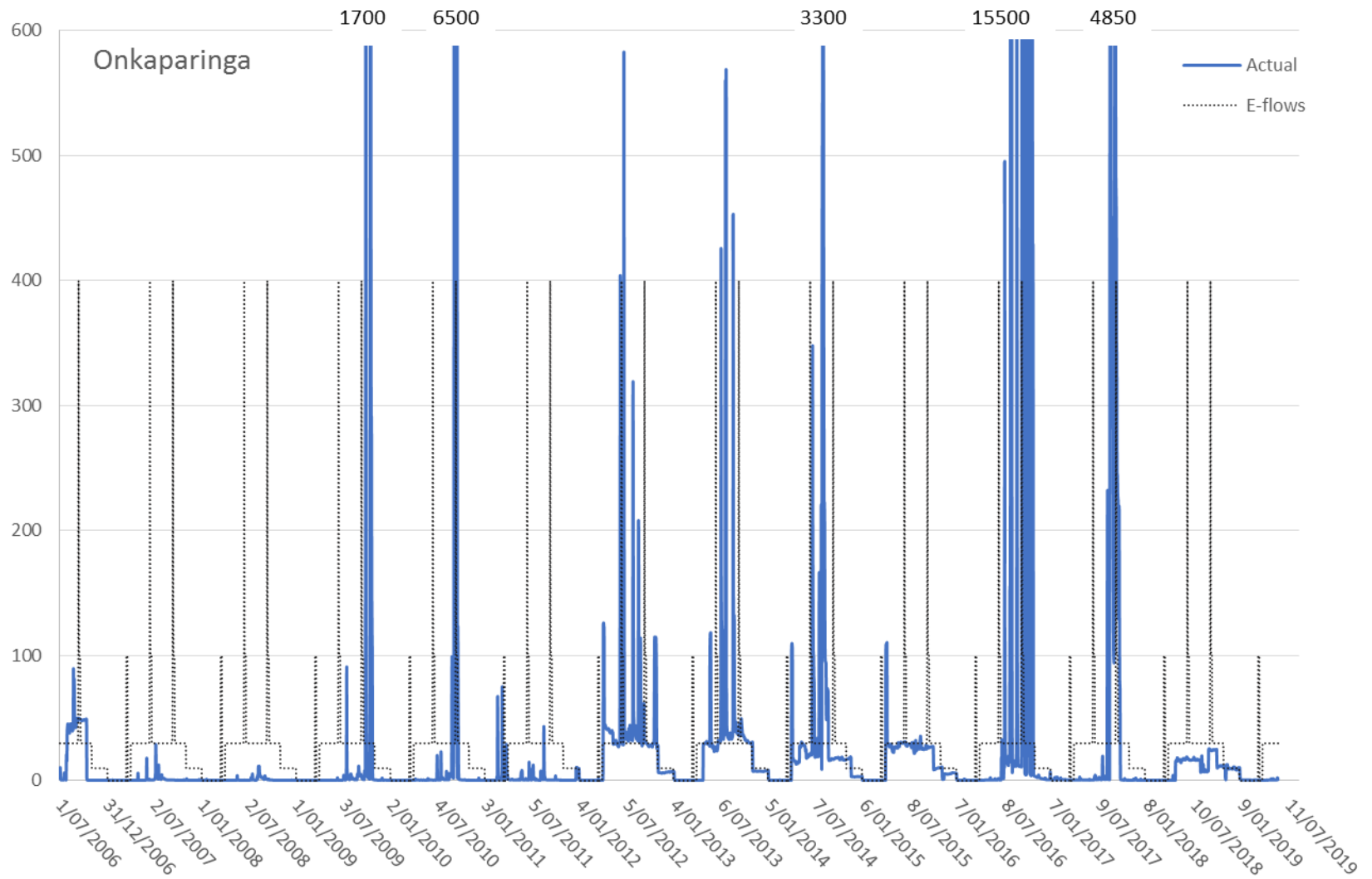
Base: 10, 30 ML/day

Flush: 30-400-100 ML/day (9 days)

Fresh: 100 ML/day x5







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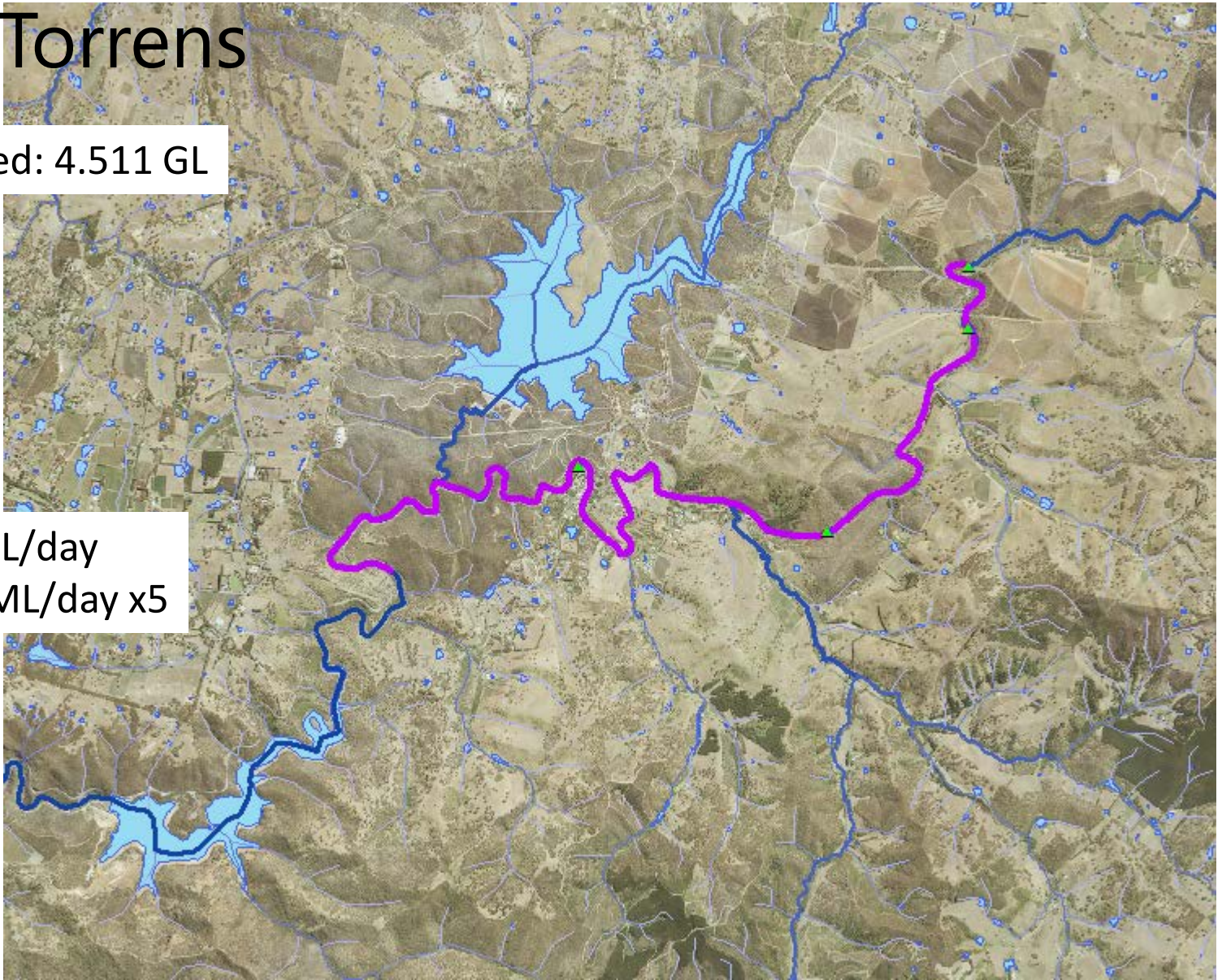


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# Upper Torrens

Total planned: 4.511 GL

Base: 2.5 ML/day  
Flush: 200 ML/day x5

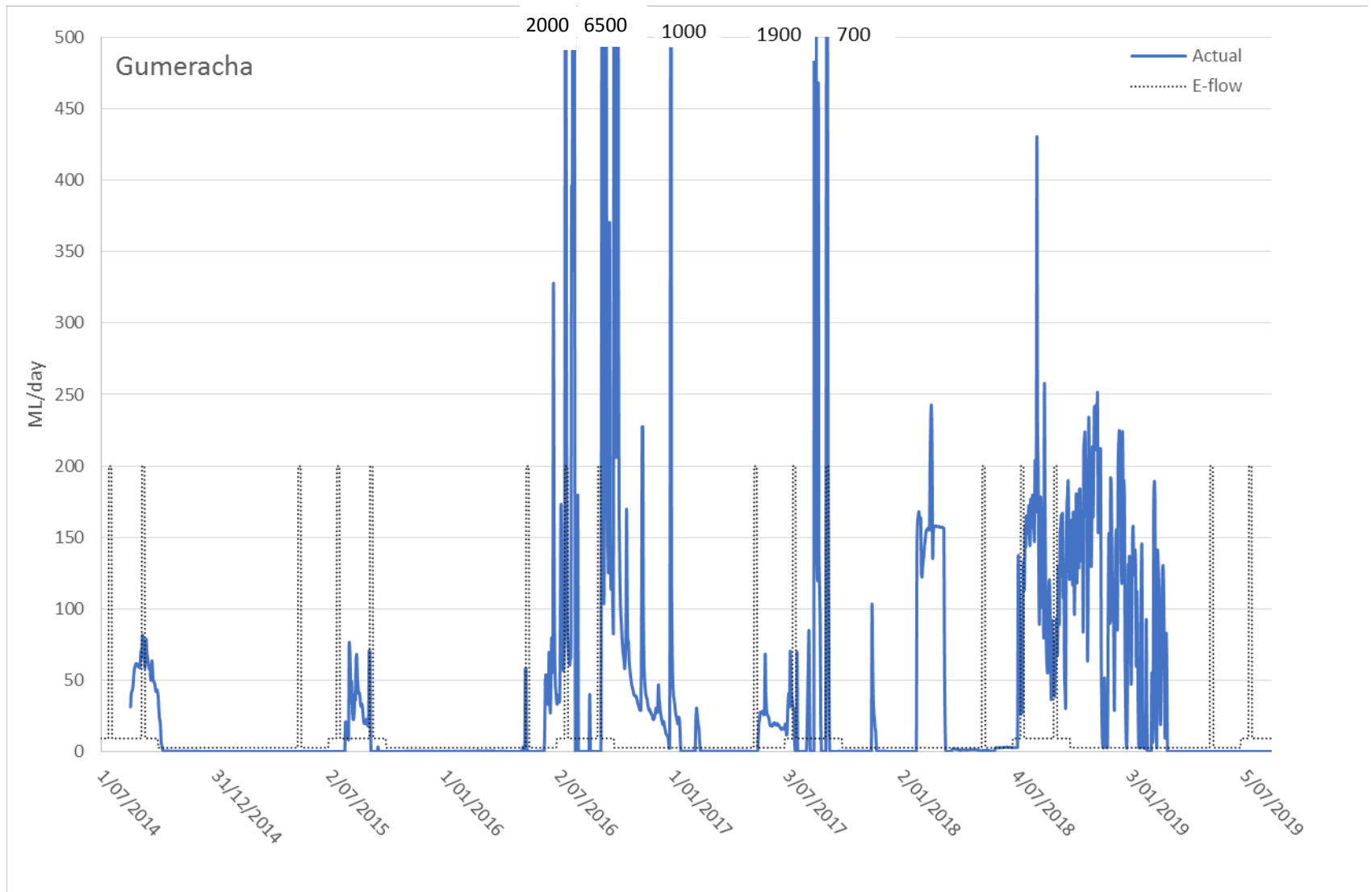


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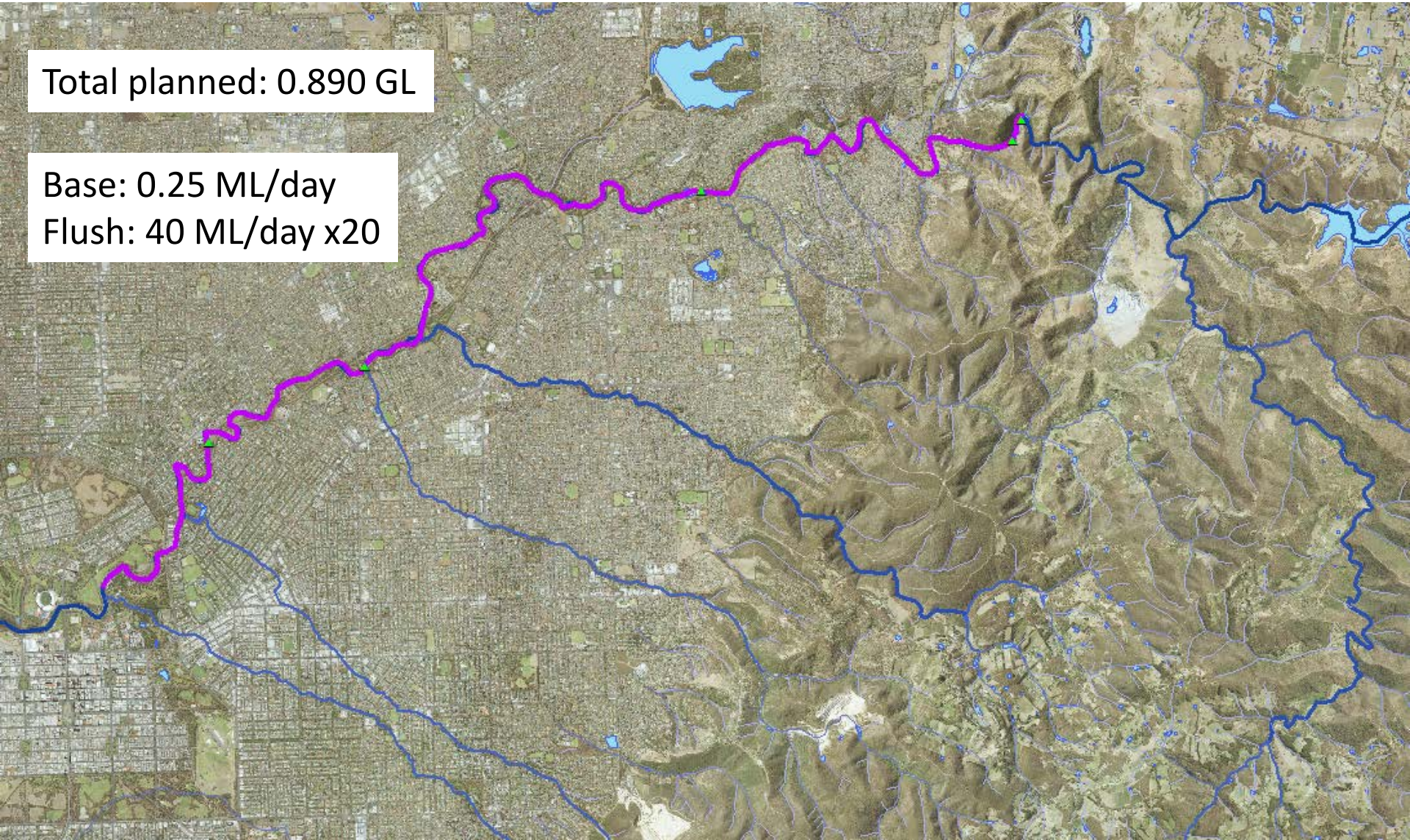
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# Lower Torrens

Total planned: 0.890 GL

Base: 0.25 ML/day  
Flush: 40 ML/day x20

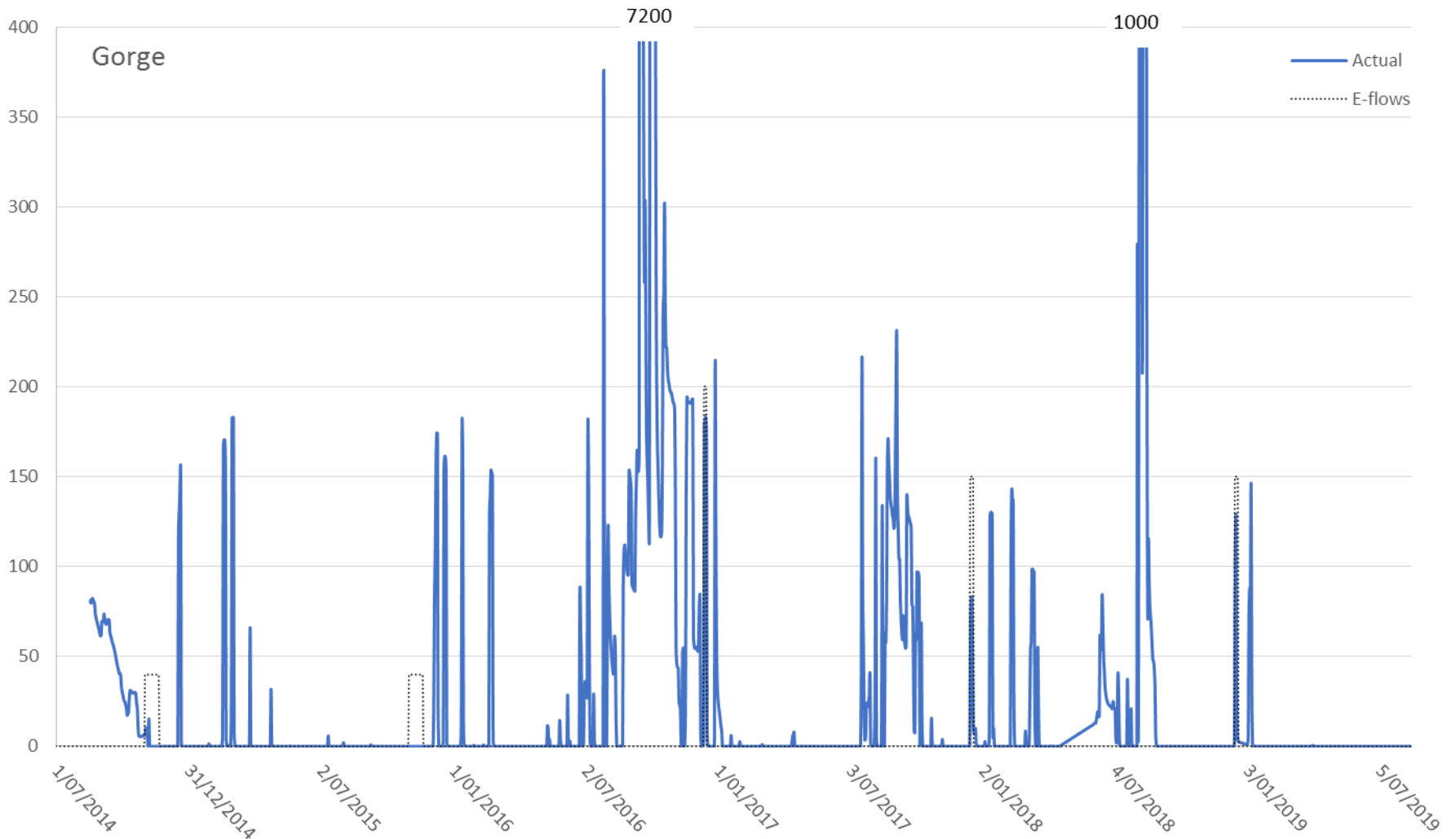


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Monitoring/trial outcomes

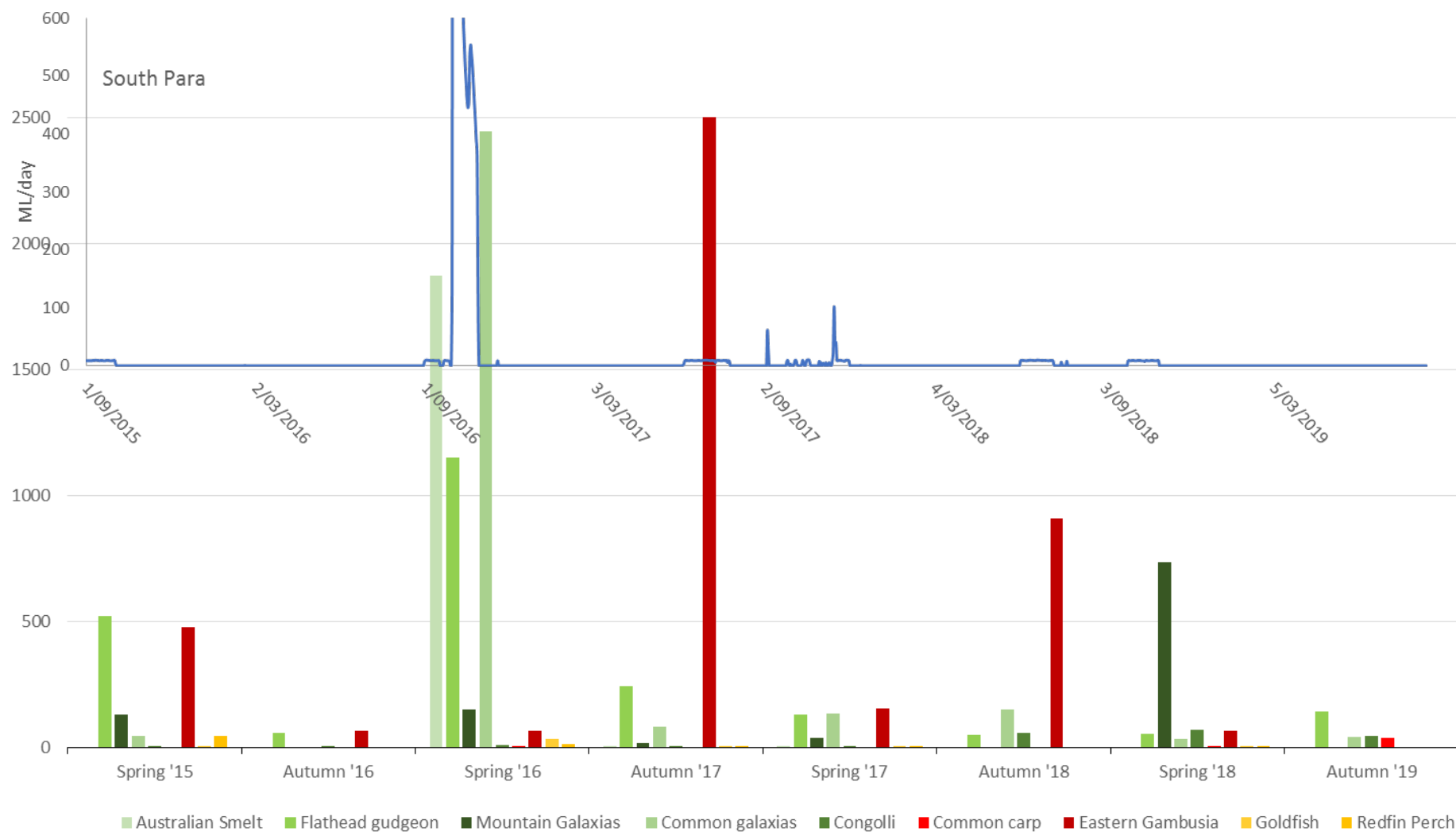


# Achievement of reach trial objectives

Indicator	South Para
<b>Physical habitats and water quality</b>	
Pool depth & persistence	✗ / ✓
Water quality in pools	✗ / ✓
Connectivity & riffle habitat	✗ / ✓
<b>Biotic components</b>	
Aquatic Vegetation	✗ / ✓
Terrestrial vegetation	✗
Macro-invertebrates	✗
galaxias	✗ / ✓
Flathead gudgeon	✗ / ✓
Diadromous fish	✗ / ✓
Redfin perch	✓
Eastern gambusia	✗
Trout	
Carp	



What about the last few years?

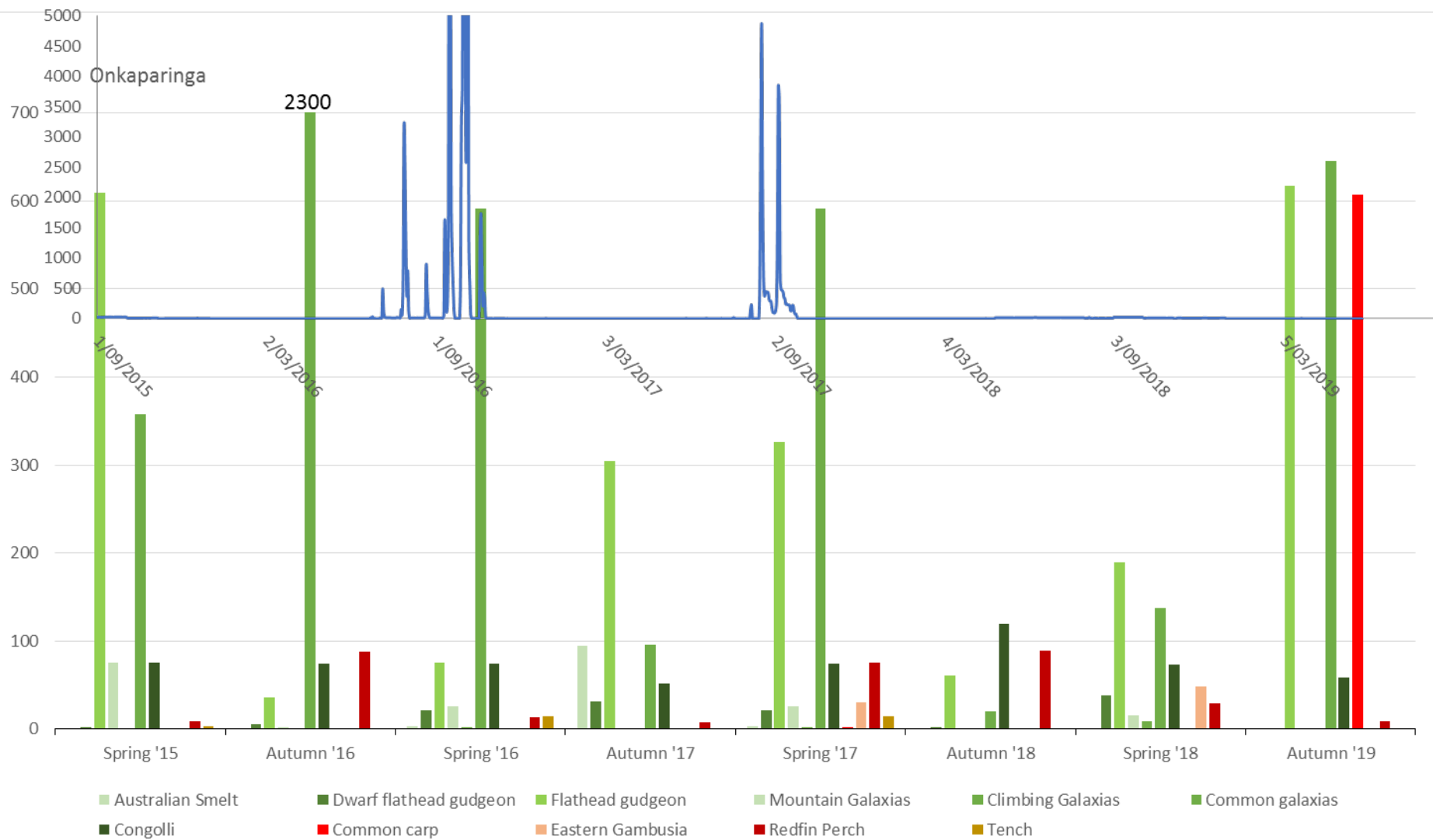


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6 sites



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5 sites





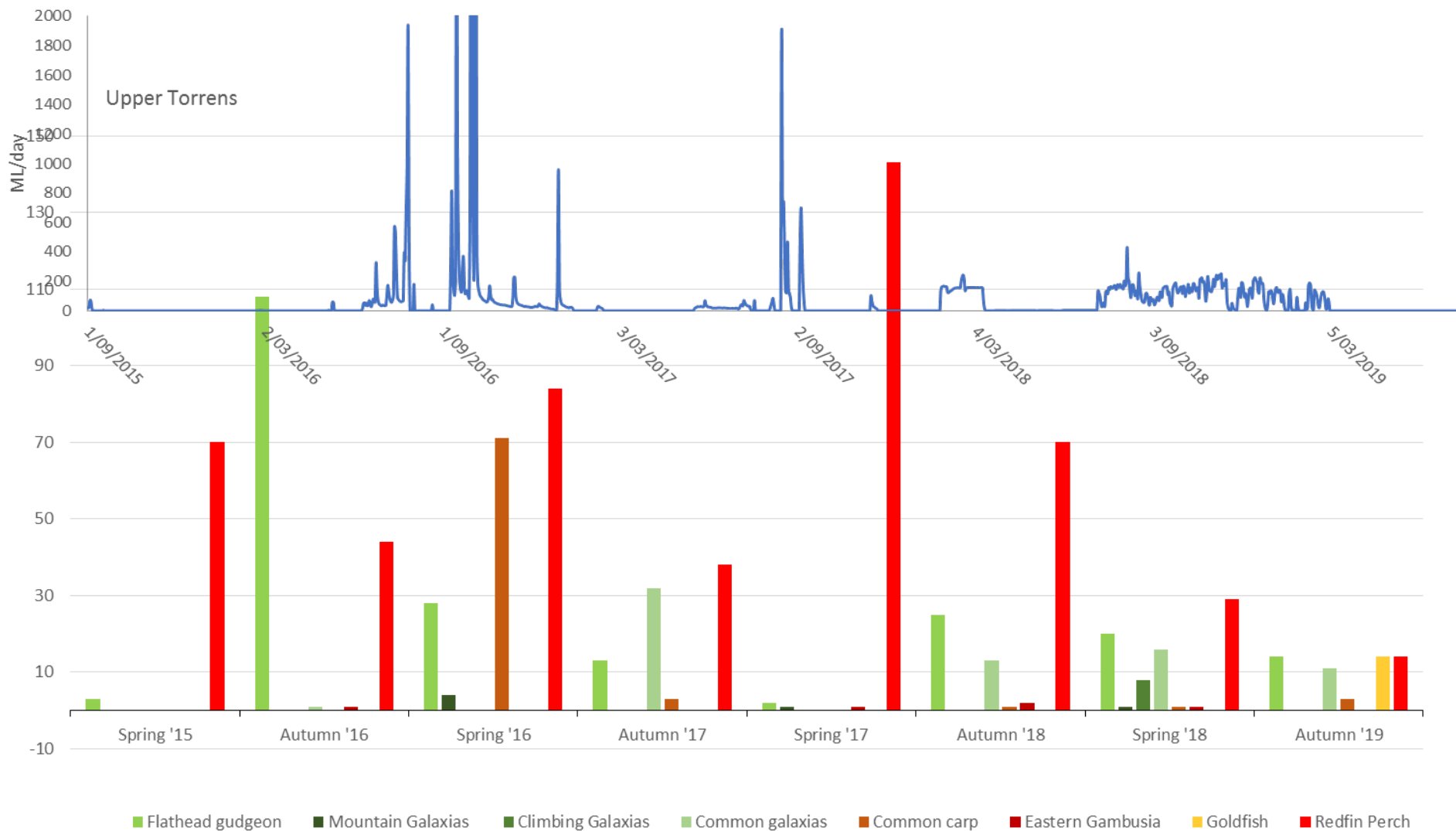
The short-finned eel discovered in the Onkaparinga River



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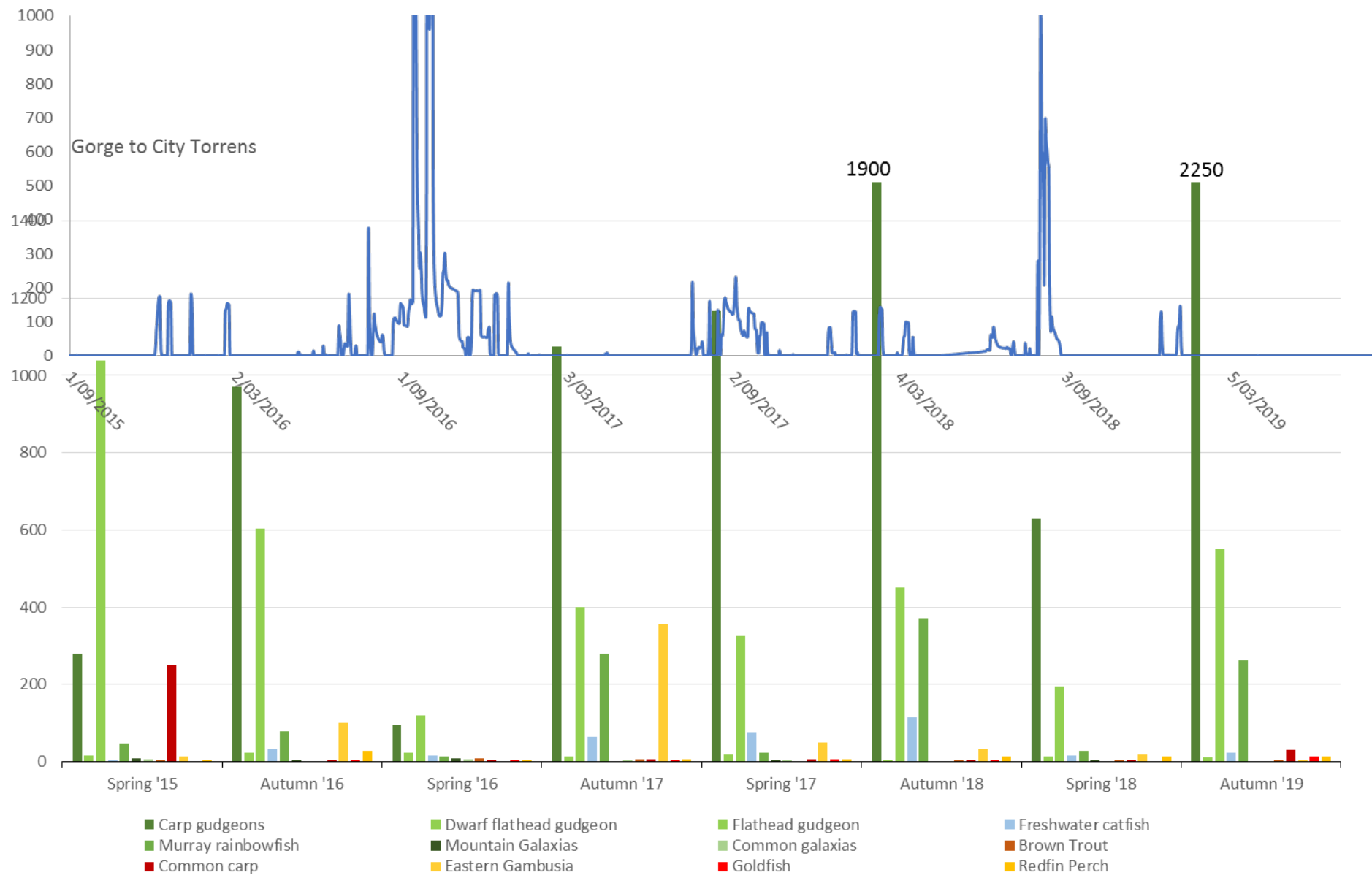


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4 sites



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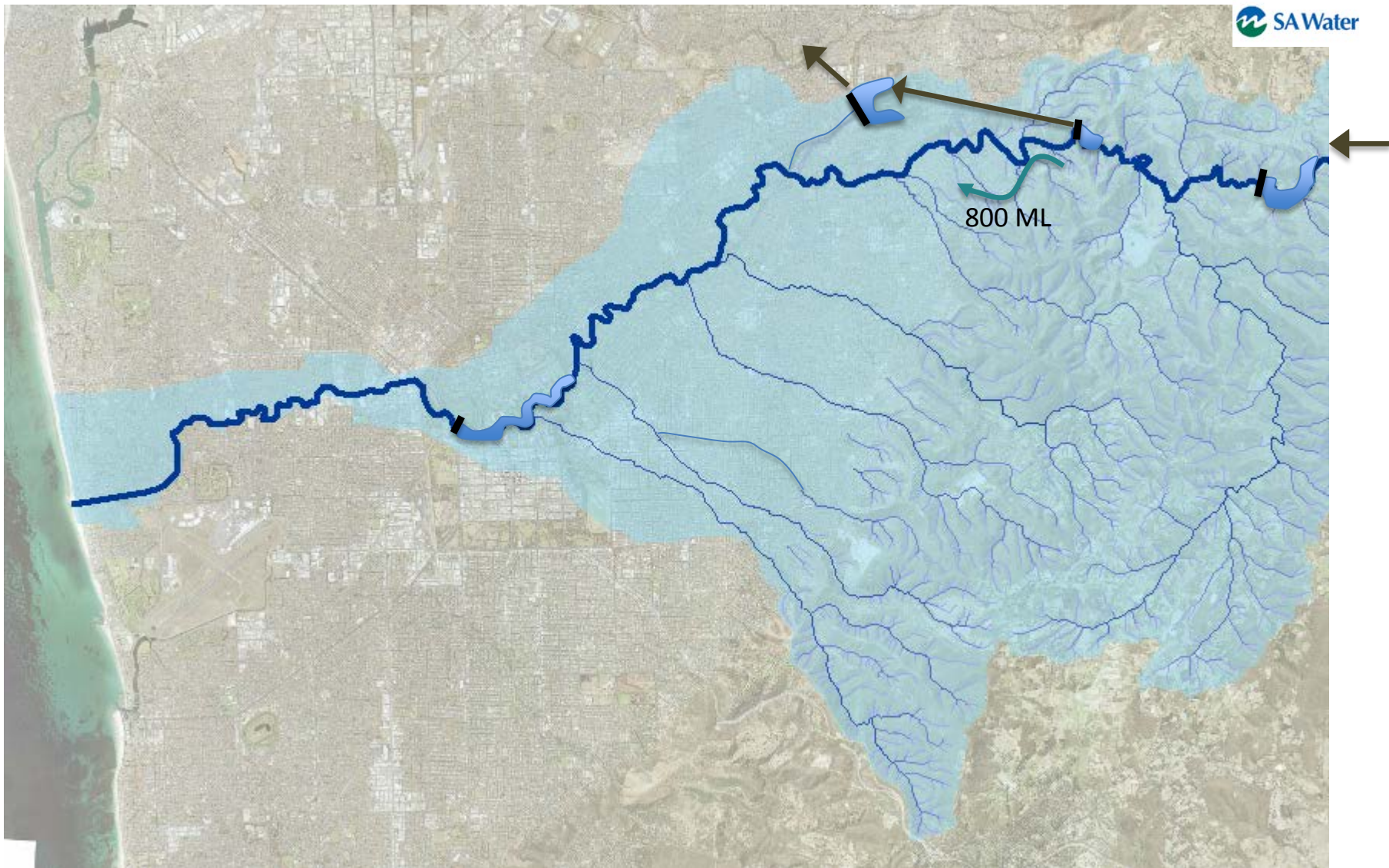
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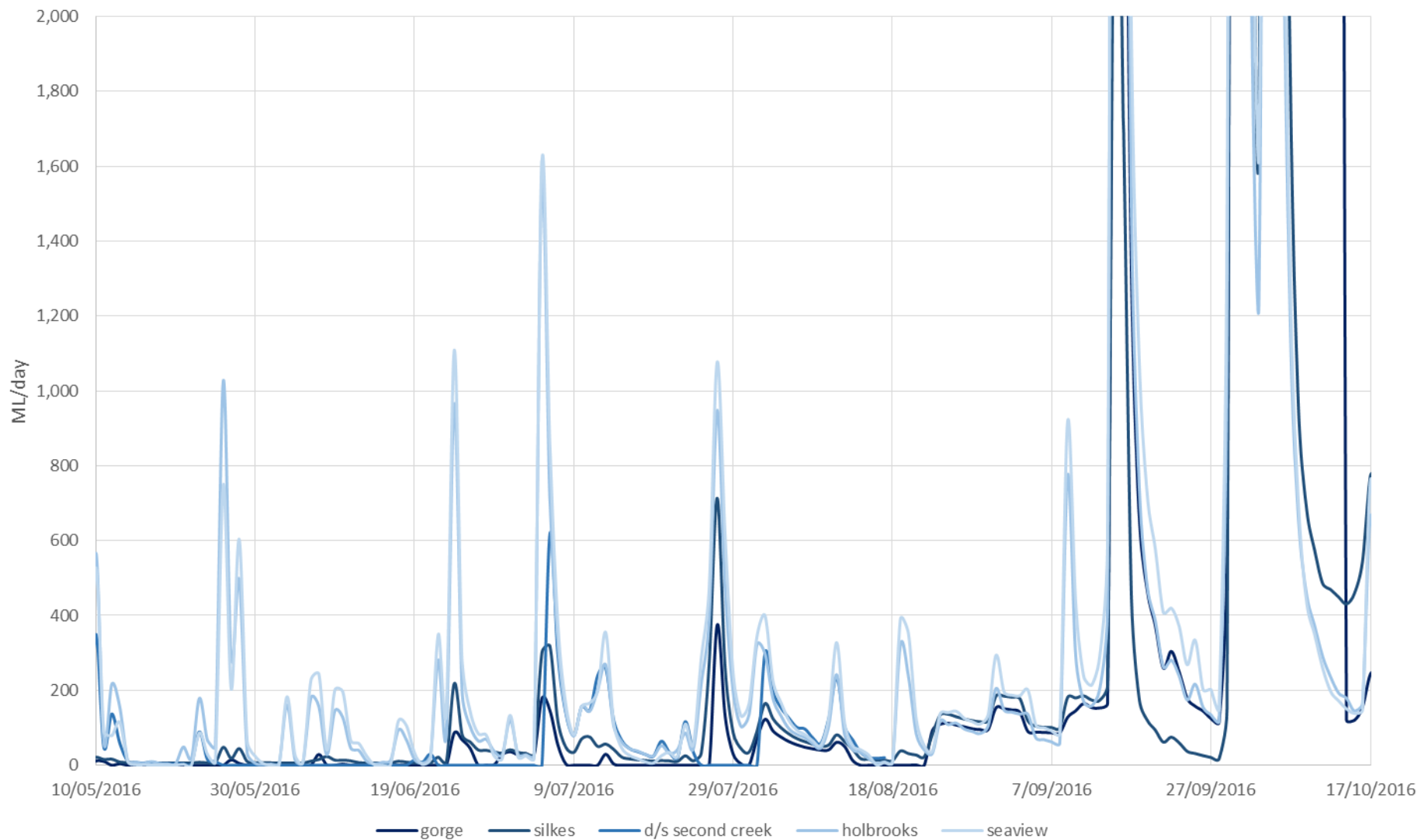
7 sites



The background features several large, overlapping, organic shapes in a light purple color against a white background. These shapes are fluid and non-geometric, creating a modern, artistic feel. One large shape on the left curves upwards and to the right, while another on the right extends horizontally. A third shape is positioned more centrally, overlapping the others.

# The Urban Torrens





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Do we have  
too little  
or  
too much  
water in the Torrens?

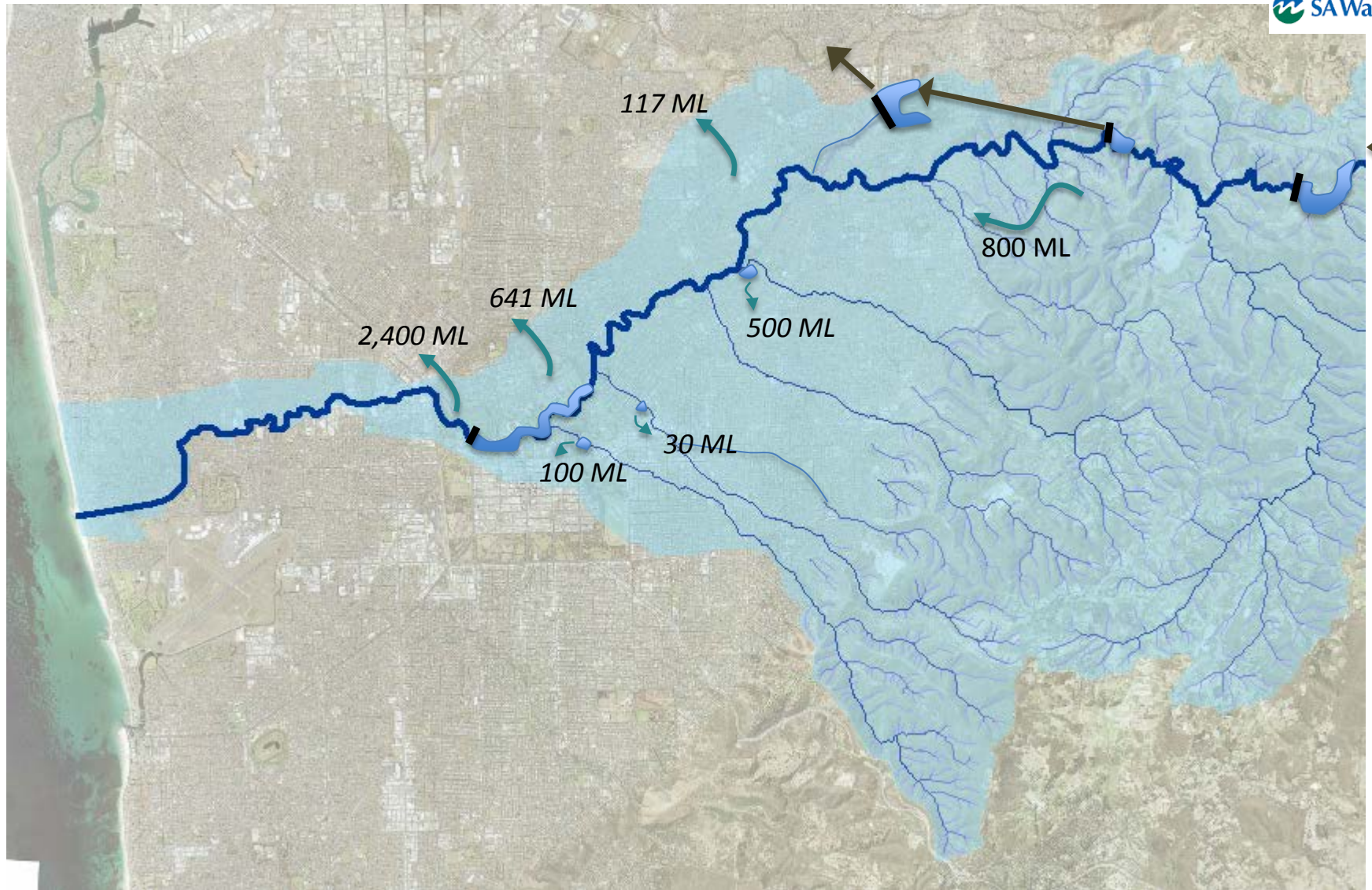


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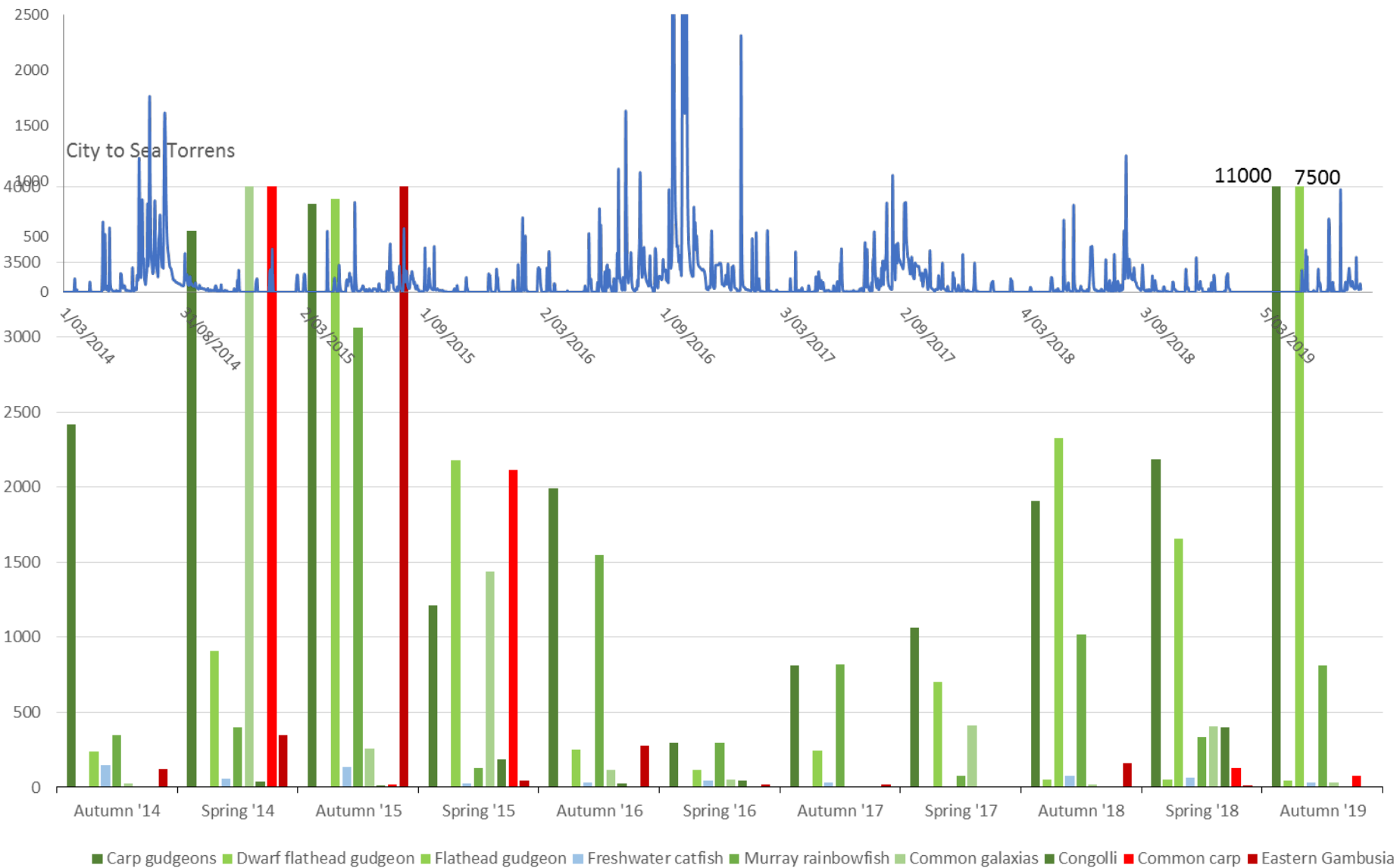


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**8 sites**



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# Rare fish discovered following success of biodiversity monitoring program in South Australia

ABC Rural By Courtney Fowler

Posted 20 Jan 2017, 6:06pm



PHOTO: The rare pouched lamprey discovered in the River Torrens has not been recorded in the region since 2008.

(Supplied: Dr Nick Whiterod)



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Blue green algae



Gover  
South







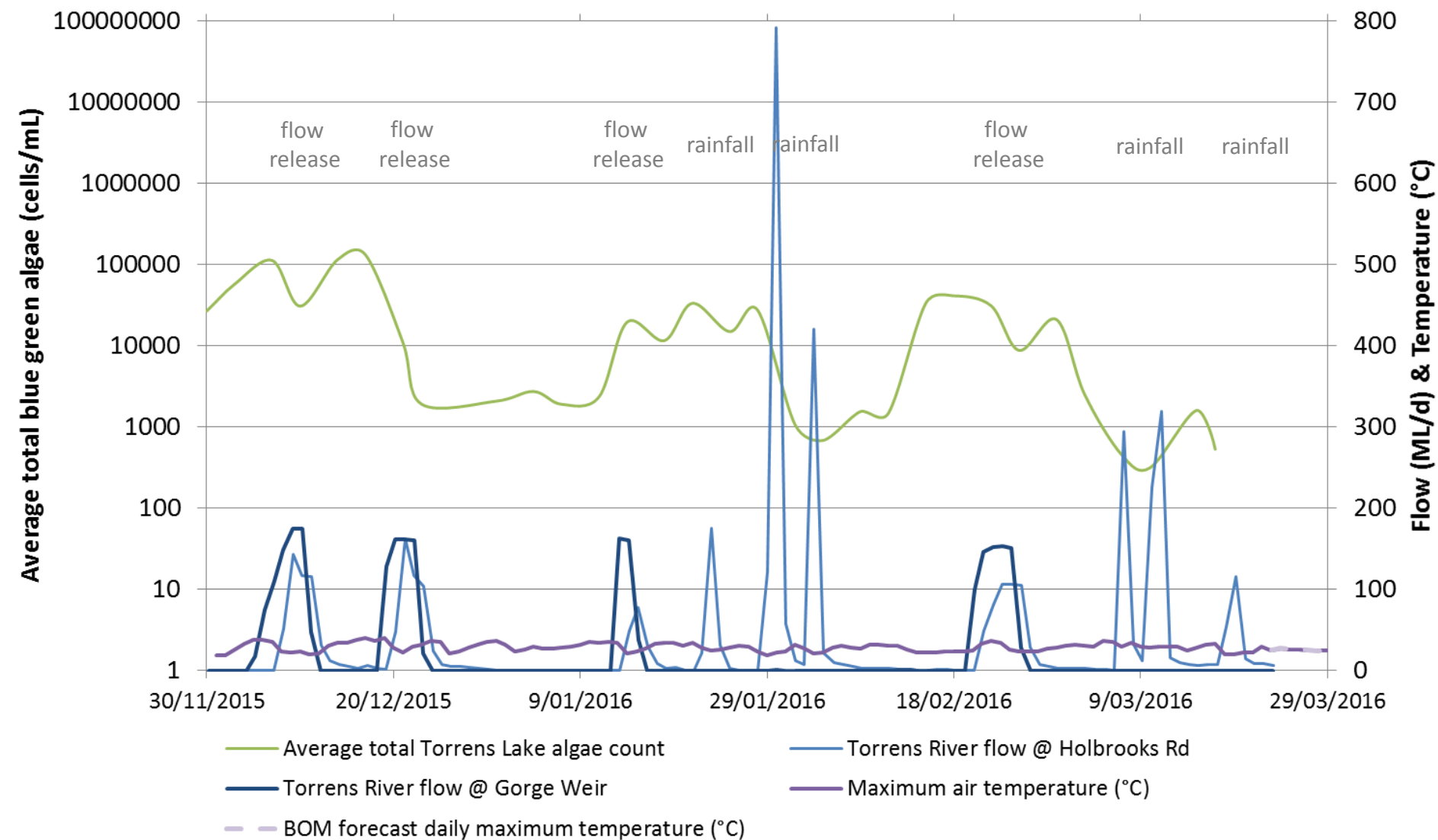
The background features several large, overlapping, organic shapes in a light purple color against a white background. These shapes are fluid and non-geometric, creating a modern, artistic feel. One large shape on the left curves around the center, while another on the right extends towards the edge. A third shape is positioned above the center, and a fourth is below it. The overall composition is balanced and visually appealing.

Dilution flows



# Torrens Lake blue green algae count, river flow and air temperature

Summer 2015-16 results - updated 23/3/2016







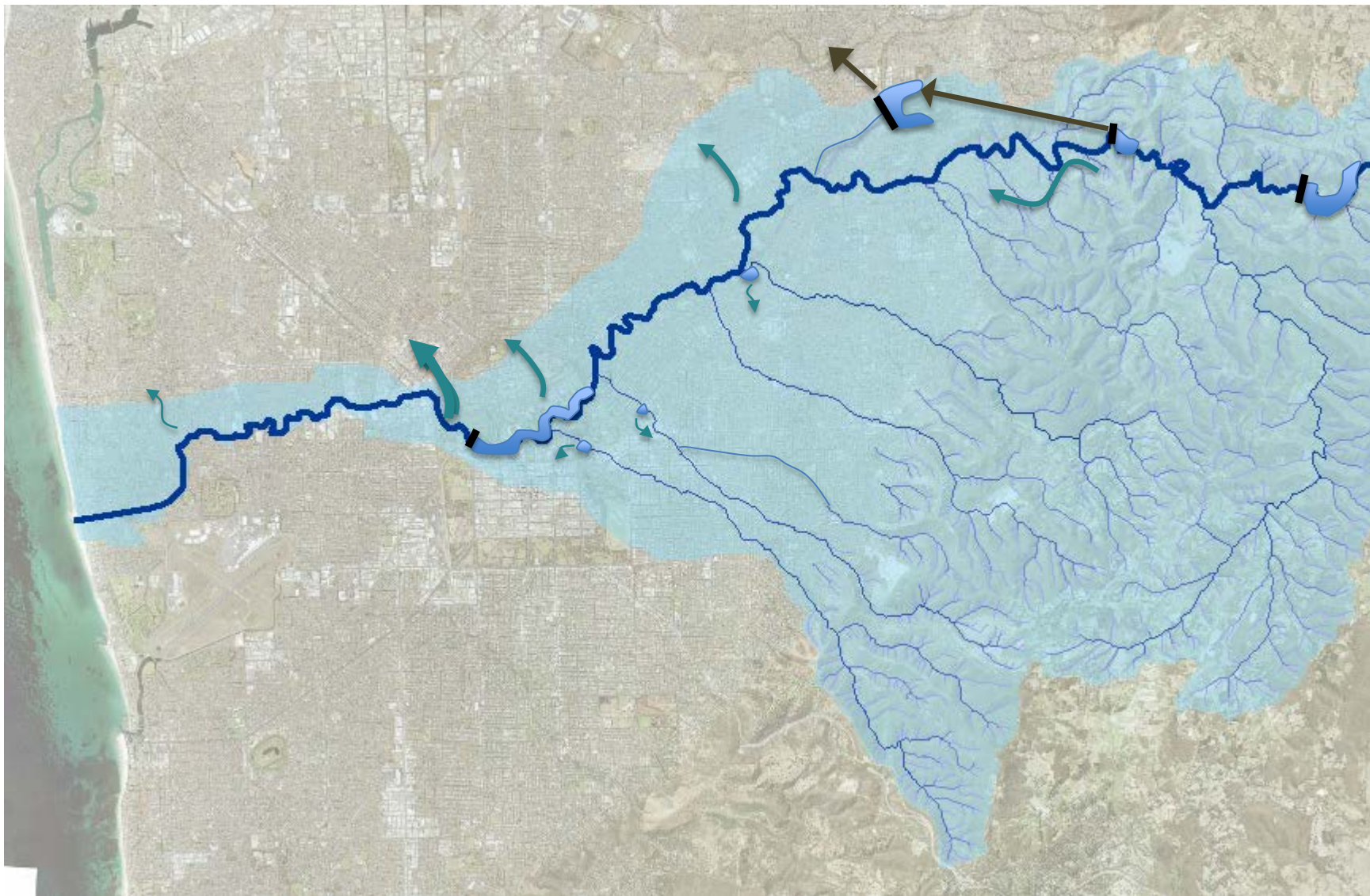




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Community values

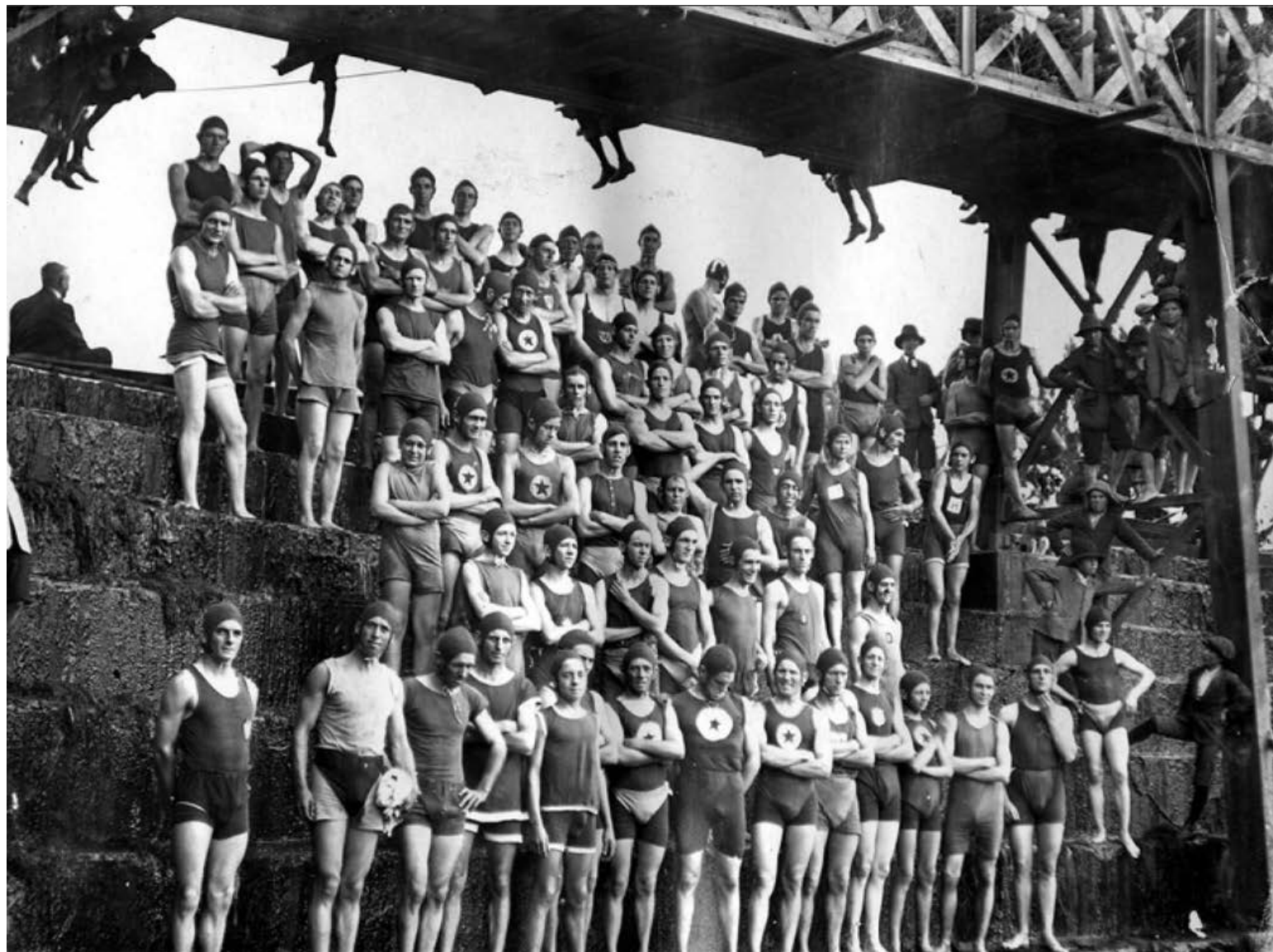




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📷 A waterskiing display team on the River Torrens in the 1960s.



📷 Ben Franks tries the River Torrens for barefoot skiing. Picture: Bianca De Marchi



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# What do you value most about the River Torrens Linear Park environment?

cultural heritage

river environment

picnic/BBQ facilities

bicycle path

open space

wildlife

1	
2	
3	
4	
5	
6	



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# What do you believe the three most significant environmental issues impacting the River Torrens are?

water quality

weeds

erosion

vandalism

algal blooms

river flows

flooding

other

Urban encroachment

1	
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9	



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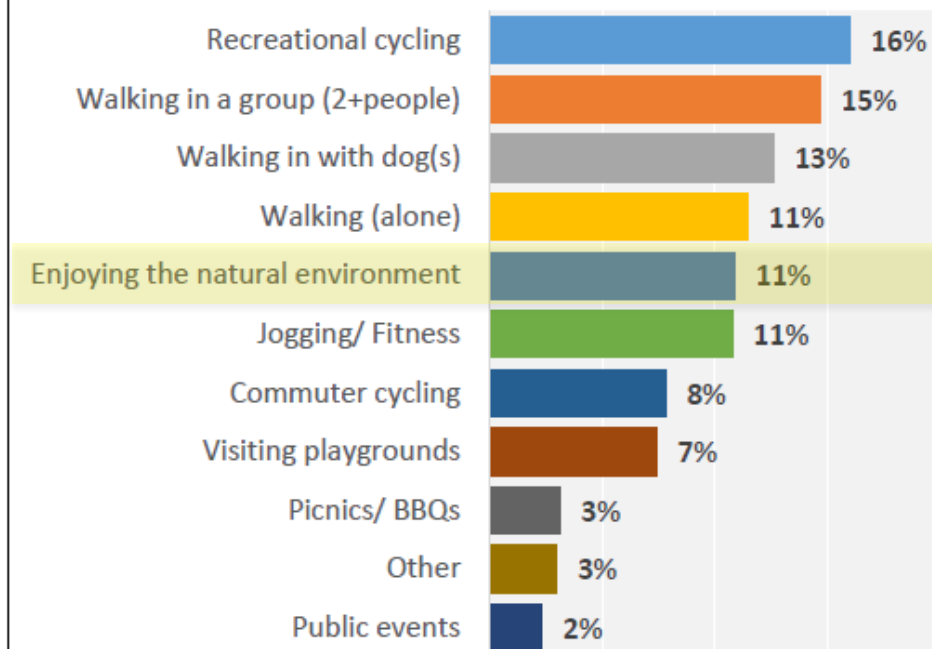


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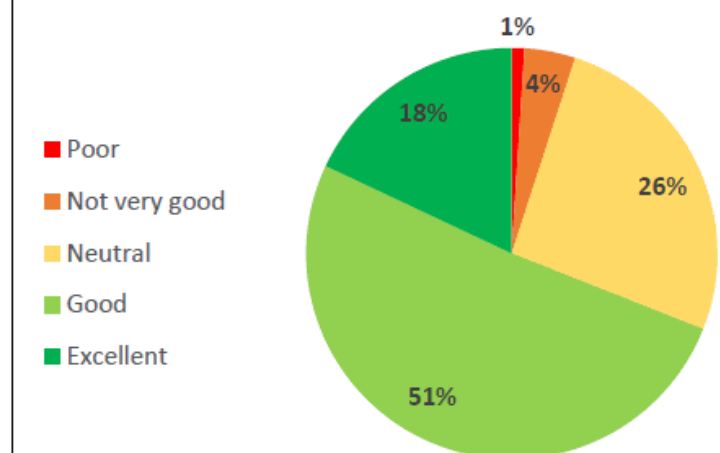




## Main Reasons to Visit River Torrens Linear Park



## Overall Experience





What's next?



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- Baseline decisions – e-flow delivery
- Landscape Boards changing
- River governance reviews





📷 Drone image taken of the Torrens River and its landscape close to Gorge Rd in the Adelaide Hills.  
Picture: Andrew Williams



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# Thanks Questions?



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Other watercourse works

# Raining rubbish: What fills the trash racks of Adelaide's rivers after a downpour?

ABC Radio Adelaide By [Brett Williamson](#)

Updated 9 Feb 2017, 10:05am



PHOTO: The trash rack at First Creek near the Botanic Gardens is cleaned after 30mm of rain. (ABC Adelaide: Brett Williamson)



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A suite of priority projects have been identified that are fundamental to the widespread adoption of WSUD and seek to address these essential needs.

[Learn More](#)

**Water Sensitive SA** is a capacity building program that provides stakeholders across all disciplines within the development and urban water management industries, with the support they need to achieve the best water sensitive urban design outcomes.

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WATER SENSITIVE  
COMMUNITIES**

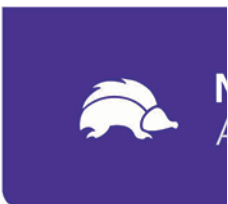


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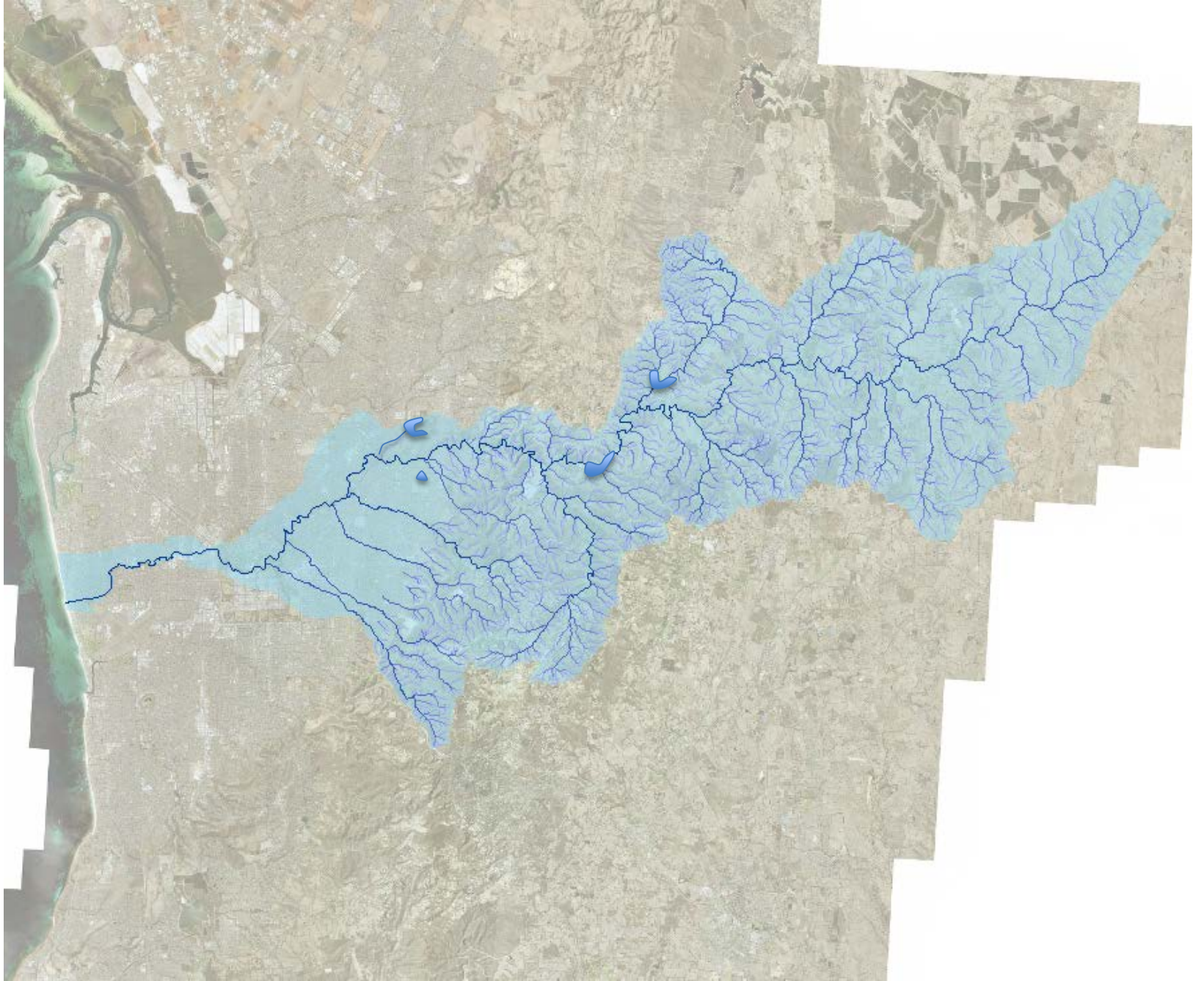




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