

Review of the environmental values of Yambuna and Warrigal creeks - summary

The Goulburn Broken CMA engaged Jacobs to undertake a study of Yambuna and Warrigal Creeks in mid-2018 to identify the creeks' current environmental values. The study also considered the effects of a changed watering regime.

About the creeks

Yambuna Creek is a flood runner which originates at the Goulburn River near Scobie Road in Yambuna. It flows east towards Kanyapella Basin where it is connected to Warrigal Creek via a constructed drain across the top of the basin.

Warrigal Creek flows north from Kanyapella Basin and enters the Goulburn River near Bangerang Road in Kanyapella. The two creeks have a combined length of about 22 km.

Before 1900 and development of the irrigation network, the creeks would have been connected when floodwaters entered Yambuna Creek and flowed west to fill Kanyapella Basin. It's understood that this would have happened about every two years. The rest of the time the creeks would have been dry or a chain of pools.

Both creek systems have been significantly altered from their natural condition because of:

- disconnection from the floodplain due to construction of levees;
- change to flows due to the creeks' connection to the Central Goulburn irrigation area and drainage network;
- run-off from drains; and
- the numerous regulators and weirs that have been built along the creeks.

These changes meant that instead of only flowing occasionally, Yambuna and Warrigal creeks had steady, year-round flows for much of the 20th century, which affected the creek's natural values.

In the 21st century, the regime has changed again, with flows reduced initially as a result of the Millennium drought and more recently due to modernisation of the irrigation network. The creeks now only flow after end-of-season de-watering of the irrigation network, after heavy rain, or due to disposal of groundwater to drains from salinity control pumps.



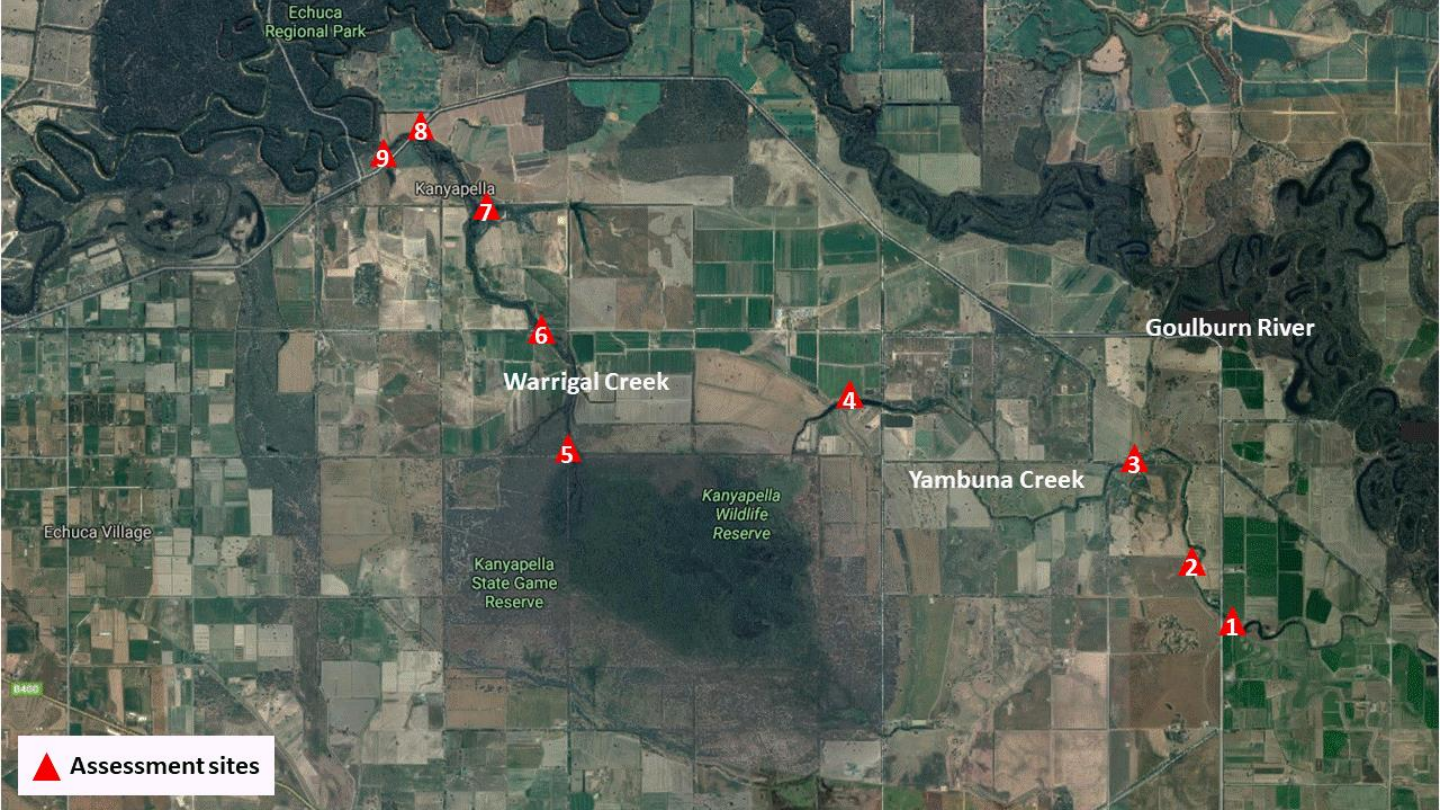
The study approach

Jacobs initially carried out a desktop review of previous studies and databases. This helped identify the types and probability of high value wildlife (eg. superb parrot, silver perch) and vegetation (eg. plains woodland and grassland) that could be expected to be found in and along the creeks.

Nine sites (see over page) along Yambuna and Warrigal creeks were then visited by a panel of specialists in fluvial geomorphology (the study of a waterway's physical features), vegetation and aquatic fauna to assess the current condition of the creeks and surrounds.

The following observations were made during these visits:

- Physical features - The range and diversity of Yambuna Creek's features (ie. pools, large woody debris) are in a degraded condition relative to what would be naturally expected. Warrigal Creek appears to have retained more of its natural features, is wider and has a healthier riparian zone.
- Vegetation assessment - River red gums, cumbungi and some native rushes and sedges were observed along with exotic species. No threatened species were observed.
- Aquatic fauna - There were local accounts of native species including Murray cod, golden perch and other small-bodied native fish having inhabited the creek in the past. The suitability of the creeks for fish has been significantly reduced by the number of barriers to fish passage (ie. regulators), unreliable water supply and poor water quality.



- Other wildlife - A range of common frog species are probably found within both creeks and landholders reported sightings of turtles and bush-stone curlews (threatened species) and antechinus.

Effects of increased groundwater disposal

The community was keen to understand whether increased groundwater disposal in the creeks would affect environmental values and the area's aesthetics. Jacobs therefore considered the impacts of increased groundwater entering drains upstream of the creeks, as well as the potential for elevated salinity levels associated with a greater volume of groundwater flowing in the creeks.

Jacobs concluded that :

- Vegetation - Creek-side vegetation was more diverse and in better condition than in-stream vegetation. Higher flows could result in improvement to the relatively poor water quality and in-creek vegetation. However, benefits would depend on the volume and quality (in particular, the salinity levels) of the water being received by the creeks. Erosion was also a consideration.
- Fish - Any change that increased the availability of aquatic habitat (ie. increased water volume), provided that the water was of suitable quality, would benefit fish. However, any increase in the number of fish that the creeks could support would also require re-colonisation from the Goulburn River via a natural flood through Yambuna Creek (ie. a moderate to major flood).

- Physical features - Although the creeks' riparian areas and instream woody debris appeared to be capable of supporting a high diversity of vegetation, they do not appear to do so at the moment. Again, the limiting factors on the creeks' over-arching health appears to be the water quality and unreliable flows.

Where to next?

The Goulburn Broken CMA is keen to continue to work with the area's private and public land managers to improve the health of the creeks. A number of landholders have been funded to carry out revegetation, fencing and pest plant and animal control to great effect.

While the creeks are not considered regional priorities for river protection and restoration in the Goulburn Broken Regional Waterway Strategy, they are close to the Ramsar-listed Barmah National Park and two nationally important wetlands, the Kanyapella Basin and the Lower Goulburn River Floodplain. This opens up opportunities for landowners to access more grants to help create and link corridors of vegetation right across this landscape through projects such as the Victorian Government-funded Linking Lower Goulburn and the Australian Government-funded Linking Landscapes and Communities projects. Other options include delivery of water for the environment to the basin.

For a copy of the full Jacobs study report please contact:
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