

Communities, collaboration & conservation

WHO?

Johns Hill Landcare Group

The Emerald Star-Bush Community Partnership Project

WHAT?

Taking action to enhance our knowledge of the Sherbrooke amphipod and the Emerald star-bush, and raising awareness of their importance within our environment.

WHY?

Both species are only found in certain areas in and around the Yellingbo Conservation Area.

Their habitat is under threat from everyday activities associated with urban living, leaving them vulnerable to extinction.

Increased knowledge is the key to developing effective conservation strategies.

HOW?

Collaborating with community groups, scientists, private land owners, public land managers, municipal councils and natural resource managers.

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Joint action is the key to helping two unique organisms avoid extinction.



Photo: Kevin Teasdale

The Emerald star-bush and the Sherbrooke amphipod are only found in certain areas in and around the Yellingbo Conservation Area.

The Emerald star-bush's natural distribution is around the town of Emerald, while the Sherbrooke amphipod (a tiny, freshwater crustacean) has been found in Sherbrooke, Shepherds, McCrae and Cockatoo Creeks.

While their geographic isolation has caused both species to develop unique characteristics, it has also left them vulnerable to extinction caused by loss or damage to their preferred habitat.

Indeed, the Emerald star-bush and the Sherbrooke amphipod are classified as threatened under the Victorian Flora and Fauna Guarantee Act 1988 (FFGA).

Their narrow distribution also means that scientifically, there is comparatively little known about each species, making conservation efforts more challenging.

Fortunately, Johns Hill Landcare Group and the Emerald Star-Bush Community Partnership Project have stepped in, collecting valuable data and raising awareness about both

species
you don't
to be a
scientist
to
protect
biodiversity.



Illustration: Savina Hopkins

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Why are these organisms important?

All species, big or little, play specific roles in the environment. Removing a species - even one as small as an amphipod - will have consequences throughout the entire ecosystem.

The Sherbrooke amphipod (Austrogammarus haasei)

The Sherbrooke amphipod is a freshwater crustacean no more than 1.65cm long that eats plant detritus that accumulates in the shaded areas of streams. As well as being a food source for native fish and other animals, it helps to recycle nutrients (including carbon) through the ecosystem.

The Sherbrooke amphipod is slightly smaller than the equally-endangered Dandenong amphipod (which is also threatened), and has white eyes instead of brown.

The Sherbrooke amphipod is very sensitive to changes in its environment. While this makes it an excellent bio-indicator, it also means that it is very vulnerable to activities that negatively affect water quality. Allowing fertilisers, effluent, pesticides and sediment to enter waterways via runoff is a major threat to the amphipod's survival.

Left: The type of intact stream habitat preferred by the Sherbrooke Amphipod. Photo taken from draft report on the Sherbrooke Amphipod by Ashleigh Summers, Aviya Nacarella and Annika Lamb.

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The Emerald star-bush
(*Asterolasia asteriscophora subspecies albiflora*)

The Emerald star-bush is a slender shrub that grows to around 1.5m tall. As well as being an extremely attractive plant - particularly in spring when it bears masses of white, star-shaped flowers - it provides habitat for native birds, insects and small marsupials.

Unlike the more widespread lemon star-bush which has yellow flowers, the Emerald star-bush has white flowers.

Emerald star-bush colonies have been identified along roadsides where they risk being slashed or sprayed as part of road, shire and utility maintenance programs.

Another threat is fire - specifically, the star-bush's need for it, and our difficulty in managing it within a residential landscape. Without regular burning, its seed bank will not germinate naturally, and plants risk being outperformed by other species.

Protecting existing colonies, therefore, relies heavily on weed control, educating private and public land managers to identify and protect remnant populations, and boosting numbers with propagated plants.

Photo: Kevin Teasdale

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Collecting valuable data

An important starting point for any conservation effort is the collection of data relating to the size, health and location of populations or colonies.

Comparing sets of data enables changes to be detected, and the rate of change assessed. A rapid decline in a population or colony, for example, would indicate that action needs to be taken quickly to prevent numbers dropping to a critical level.

The data also provides valuable information about the species that can be used to shape future conservation efforts.

In 2014, the Emerald Star-Bush Community Partnership Project (ESBCPP) volunteers surveyed areas in Emerald and surrounding areas where the star-bush had previously been recorded.

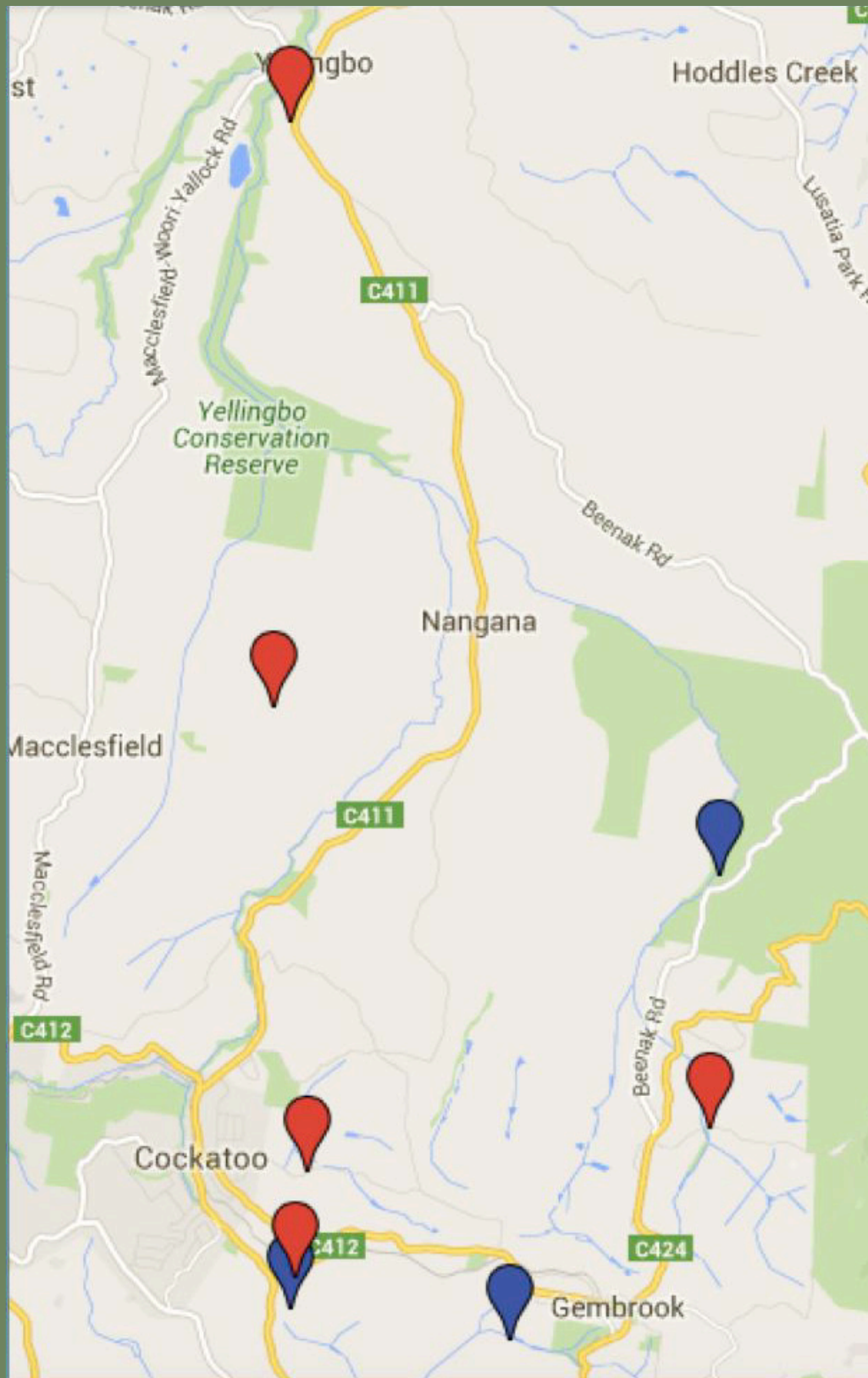
Unfortunately, many roadside star-bushes had been lost since the previous survey in 2008. This prompted the ESBCPP to mark remaining plants with distinctive blue stakes, and embark on a program in conjunction with the Cardinia Shire Council to alert road, council and utility crews about the importance of not disturbing them.

On a more positive note, the volunteers were able to identify significant new colonies on private land. They advised owners how to protect them, and were also able to obtain seeds and cuttings for propagating new star-bushes.



Photo: Emerald Star-Bush Community Partnership Project

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In 2015, Johns Hill Landcare Group (JHLG) carried out its own research project. It partnered with Melbourne Water and students from Monash University to monitor creek sites in the Yarra Catchment to learn more about the Sherbrooke amphipod.

Their efforts revealed that the amphipod is not restricted to Sherbrooke Creek as previously thought. Specimens whose DNA matched that of amphipods found at Sherbrooke Creek were also found at three sites (*marked in blue on the map at right*) in Shepherds and Cockatoo Creeks.

Importantly, each discovery site was located in parts of creeks that were within, or downstream, of parkland. This indicates that the amphipod needs good water quality and intact habitat to survive.

This information may be used in the future to support restrictions on land use around these sites to protect the amphipod.

Map taken from draft report on the Sherbrooke Amphipod by Ashleigh Summers, Aviya Nacarella and Annika Lamb.

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Encouraging others

Another important part of a successful conservation strategy is raising awareness about the need for action and encouraging others to get involved.



Both the ESBCPP and JHLG have tapped into local media, running stories about the star-bush and the amphipod.

The ESBCPP has been particularly proactive at instilling a sense of pride and ownership in the star-bush, to the extent that it has been unofficially adopted as Emerald's mascot or emblem. This has been achieved through a vast number of initiatives that include designating 2013 'the Year of the Emerald Star-Bush', celebrating 'Emerald Star-Bush Awareness Week' every October and installing street signage (with DELWP funding) declaring Emerald 'Home of the Emerald Star-Bush'.

Other initiatives include encouraging the local primary school to adopt the star-bush as its uniform emblem and setting up information podiums at Emerald Scout Hall and Emerald Lake Park. The ESBCPP also sells Emerald star-bush plants and merchandise, which has helped build recognition of the plant and its value, and raise funds for its projects.

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The value of partners

Collaborative partnerships add value to environmental projects in several ways, including giving weight to funding applications.

Working in partnership with Melbourne Water's Waterwatch program and Monash University gave JHLG access to resources that enhanced the scope and results of its project.

Likewise, the ESBCPP - which is made up of individuals from the community and representatives of the Emerald Village Committee, Cardinia Shire Environment Team, Friends of Emerald Lake Park, Friends of Wright Forest, Emerald Community House, Emerald for Sustainability and JHLG - has brought together people with a broad skill set, resulting in the successful completion of many projects on both public and private land.

Amazingly, an ESBCPP member has even been able to grow the Emerald star-bush from seed collected in compliance with a DELWP permit. This has led to the formation of a scientific partnership with the Royal Botanic Gardens to share propagation techniques and, more importantly, is allowing lost plants to be replaced with those of similar genetics.

So far, more than 1000 Emerald star-bushes - a combination of plants raised from seed, and propagated from cuttings by the Friends of the Helmeted Honeyeater - have been planted in and around Emerald. Sites include private gardens, roadside and bushland revegetation projects, and reserves like the Emerald Scout Hall, RSL Club and Emerald Lake Park.

ESBCPP has also obtained funding from DELWP to carry out weed control around star-bush colonies at the privately-owned Emerald Golf Course and Emerald Secondary College.

Photo: Emerald Star-Bush Community Partnership Project

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Looking ahead

JHLG is hoping to carry out future monitoring in other creeks in the Woori Yallock Catchment to identify other Sherbrooke amphipod populations and increase knowledge about its habits and habitat.

The ESBCPP is working towards having the star-bush registered as endangered under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC). (Currently, listing under the Victorian FFGA only protects star-bushes on public land; listing under the EPBC would protect star-bushes on private land as well.)

The Cardinia Shire Council is helping to fund the data collection required for the application.

You can get involved, too

You can get learn more about these projects by visiting www.emeraldstarbush.com and www.johnshill.org.au.

If you want to take an active role in collecting data about the biodiversity in your neighbourhood, www.vic.waterwatch.org.au and the Atlas of Living Australia (ALA) (www.ala.org.au) are excellent places to start.

The WaterWatch program provides training and support so that you can get monitor your local waterways, while the ALA provides links to biodiversity projects in your area that you can contribute data to.