

Newsletter of the Friends of the Western Swamp Tortoise

Protecting habitat in City of Swan

The Friends of the Western Swamp Tortoise became aware of an Amendment (132) to be presented to the City of Swan late last year at **Ellen Brook** and **Twin Swamps Nature Reserves**.

Our Chairperson, Jan Bant, addressed the Councillors at an Agenda meeting on 10 November 2021, speaking for five minutes on the impact likely if the buffer zones were changed. The situation became critical after 5th February 2021, when 90% of the **Ellen Brook NR**, habitat of the last truly self-sustaining population of the tortoises, was burned. Most areas were totally burnt out, including our restorative revegetation plantings, and only black ash remained.

Any potential development in the buffer zones (the Amendment proposed modifying the minimum lot size from 8ha to 2ha) would have had a detrimental impact on the area. Subdivision potentially adds more people, buildings, animals and polluting run off to the catchment area of the Ellen Brook. In addition, more dwellings could change the hydrology of the area. Any development would have also decreased the potential to add acreage to the Reserves.

Following speakers expanded on the possible pollution issues and hydrology problems which might ensue. Jessica Shaw, Swan Hills MLA, reminded the Councillors that the protection of the tortoise is of State and National significance and urged a postponement until the EPA has completed its review of Guidance Statement 7.

The following Wednesday, at an Ordinary Meeting of Council, Cr McCullough moved that the council not support proposed amendment 132. Her motion was accepted unanimously. We thank the City of Swan Councillors for their open-minded approach to this Amendment, and their continued protection of the Western Swamp Tortoise.

FoWST will continue to assist DBCA and scientists to monitor the health of tortoises, including studying their breeding rates, which may have been impacted by the fire and the conditions. It will be a long road to recovery after the fire, but we are determined to make it.

Go to our website or our Facebook page for updates (see back page for URLs).



Far left: Parents and kids from NIDO Early Learning group get their hands dirty for the tortoise at EBNR (July 2021)

Left: Post-fire replanting at EBNR by FoWST & volunteers (July 2021)

Western swamp tortoises on the move



Above: Two swamp tortoises found while radio tracking (photo: Bethany Nordstrom)

In addition to losing much of their habitat on the Swan Coastal Plain, our tortoises face the additional threat of climate change, as the seasonal swamps they inhabit will hold water for increasingly shorter periods of time. Recovery of the western swamp tortoise depends on securing and drought-proofing high-quality habitat in their indigenous range (in particular in and around Ellen Brook NR) and exploring new conservation options that account for future climate change.

One of these options is assisted colonisation – the intentional translocation of species outside their indigenous range to mitigate a threat – and has been explored as an option for the swamp tortoise by a team at the University of Western Australia (UWA) for over a decade. Assisted colonisation trials to wetlands near the south coast began in 2016, with juveniles bred at The Perth Zoo. These southern wetlands have longer hydroperiods than those near Perth, but are also cooler, and are expected to offer ideal microclimates for western swamp tortoises in about

20 years. Juveniles fared particularly well in a small trial wetland near the township of East Augusta, and grew comparable amounts to those released at Moore River National Park in the same year. It is thought that the good growth was partly due to the high abundance of aquatic food resources such as tadpoles, as well as longer wet periods that resulted in longer times for foraging in the south compared to the north. In a second year-long assisted colonisation trial in 2018-19, small biotags were attached to the tortoises, and allowed the UWA researchers to reconstruct the behaviours of tortoises in different climates, including in their native habitat in Ellen Brook NR. In particular, they identified the weather conditions that allowed tortoises to be most active, and the cues that triggered the start and end of the aestivation (summer dormancy) period.

A third assisted colonisation trial commenced in the East Augusta region in August 2021, led by UWA PhD candidate Bethany Nordstrom, with support from many DBCA staff and the Western Swamp Tortoise Recovery Team. The objective of this latest assisted colonisation trial is to understand whether energy requirements of the species can be met in cooler climates, over both the short- and longer-term. More than 70 juvenile tortoises bred at The Perth Zoo were released, and most carried biotags that continuously recorded their activity patterns and shell temperature. These biotags (and one of the stationary receiver towers that collected data transmitted from the tags) were purchased by the Friends of the Western Swamp Tortoise, for which the research team are very grateful!



Above: one of the biotags provided by FoWST (photo: Bethany Nordstrom)



Over the past six months, tortoises have shown positive growth rates, gaining on average 5% of their body weight upon release. Bethany collected close to 7 million data points from the biotags, which will allow her to thoroughly evaluate the consequences of tortoises operating in a cooler climate. The tortoises have now moved into aestivation to wait out the hotter summer weather, and will continue to be monitored until the winter rains return. If the trial continues to meet criteria where it can be considered a success (acceptable growth and mortality) then our swamp tortoises may have a new area to call home, and one that could safeguard the species as the climate changes.

Left: PhD candidate Bethany Nordstrom downloading the data from the stationary receiver tower (photo: Alan Harvey)

From the WST Recovery Team meeting

Unfortunately the extremely hot summer we've just experienced has desiccated some of the germinated seeds from our seed bombs, which were distributed last winter at Ellen Brook NR. However, there are still some seeds in the soil, and we can expect them to germinate over the next couple of winters.

A very determined fox dug a 5-metre long tunnel under the outside skirt of the protective fence to gain access to EBNR.

The scientists on the Recovery Team were so worried about the tortoises in EBNR after the Feb 2021 fire that they spent a lot of time and effort on post-fire monitoring. As a result, 2021 had the highest capture rate for recent years: 77 individuals were caught and examined. The good news is that the fire seemed to have had little negative impact on the animals—at least so far.

The Perth Zoo Captive Breeding Program successfully hatched 65 tortoises this season (**right**). Adelaide and Monarto Zoos in South Australia (our "insurance colony"), also report successful hatchings.



"Westy" is Thriving

Education is an important aspect of the work done by Friends of the Western Swamp Tortoise. In 2017 our Vice President of our group, Cathy Levett, wrote a wonderful book titled *Westy* to explain the journey and life cycle of Western Swamp Tortoises who start their life at Perth Zoo. Cathy kindly decided to donate all proceeds of book sales to the Friends Group, and we are pleased to announce this figure has now reached \$6200. Even more important than the money, we are pleased that the book is now being used by many schools, libraries, and kindergartens throughout the state. A mammoth effort for such a small book.



Speaking of our valued sponsors, **Margaret River Chocolate Company** has recently added a **tortoise-decorated mug filled with chocolate tortoises** to their range (**left**).

New neighbours!

The tortoises' new neighbours to the west of the Ellen Brook Nature Reserve, **Satterley's Clementine Estate**, are keen to collaborate to feature the Western Swamp Tortoise. Our representatives are having ongoing meetings with Satterley management to determine how best we can educate the new householders and raise the profile of the animal that lives on their doorstep.

Where are they now?

(Late summer / Bunuru — autumn / Djeran): Through the hot months, all the tortoises aestivate (enter a torpid state) in burrows, sheltered places and artificial tunnels around the edges of the dried up swamps, waiting until the cooler weather and rains begin. Eggs that have been laid the burrows hatch from late autumn to early winter, and the hatchlings are about as big as a ten cent coin. They may wait in their nests until the swamps fill, before emerging.

Right: an artificial tunnel helps the tortoises find shelter from the sun through the hot, dry summer.



Like a presentation for your school or group?

If you know of a **school** or **community group** that would like us to come and talk please contact Jan on 0408 024 800 or Cathy via westernswamptortoise@yahoo.com.au.

At schools we include an exciting free games session for the younger children.



You can help save an endangered species, right on your doorstep!

Membership of the Friends is **FREE** and we have lots of great activities, including behind-the-scenes zoo visits and tortoise release days.



Join us to help save the tortoise... because EXTINCTION SUCKS!



For further information on any of the group's activities, contact Jan on

9344 2872 or 0408024800

Email: westernswamptortoise@yahoo.com.au

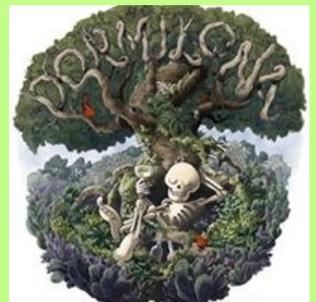
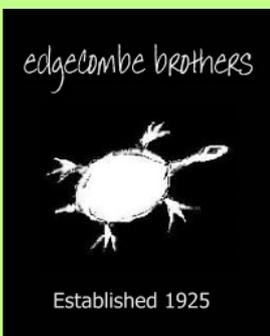
check out the website <https://westernswamptortoise.com.au>

or find us on **Facebook** www.facebook.com/FriendsOfTheWesternSwampTortoise/ where we usually post the very latest news.

Committee: Jan Bant, Chair; Cathy Levett, Vice-chair; Bob Height, Treasurer; Jemma Simpson, Secretary; Tanya Marwood (general); education sub-committee—Jan Bant & Cathy Levett.



Our current sponsors and recovery partners include:



Department of Biodiversity, Conservation and Attractions



...as well as **Boral**, the **University of Western Australia**, **Curtin University** and **Adelaide Zoo**.