

THE FRESHWATER TURTLE TIMES

**1 MILLION TURTLES COMMUNITY CONSERVATION PROGRAM UPDATES,
RESEARCH INSIGHTS AND MORE**



Photo Credit: Marilyn Connell (QLD)

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AUSTRALIAN MUSEUM
**EUREKA
PRIZES**
2023 WINNER

IT HAS BEEN A BUSY 2023 TURTLE MONTH!

This has been our busiest Turtle Month and nesting season yet, as the numbers in TurtleSAT clearly show! We now have over 20,000 total records, 830 nests protected with mesh and over 1450 turtles saved. Additionally, a number of fox proof fences have been installed by community groups and individuals at nesting hotspots to protect nests for future years.



A big thank you to all our turtle champs!

Hats off to everyone who has entered data to TurtleSAT, helped a turtle across a road, found a nesting location, protected a nest or nesting hotspot, used the nest predictor tool to locate new areas to search, and applied for a grant for conservation activities.

Thank you also to those who have spread the word through talks and community events, handed out our postcards and talked to their family, friends and local community about turtle conservation. Even following, liking and sharing our updates on social media is a great contribution – it's a simple thing that anybody can do to raise awareness about freshwater turtle conservation.



Your Feedback Matters

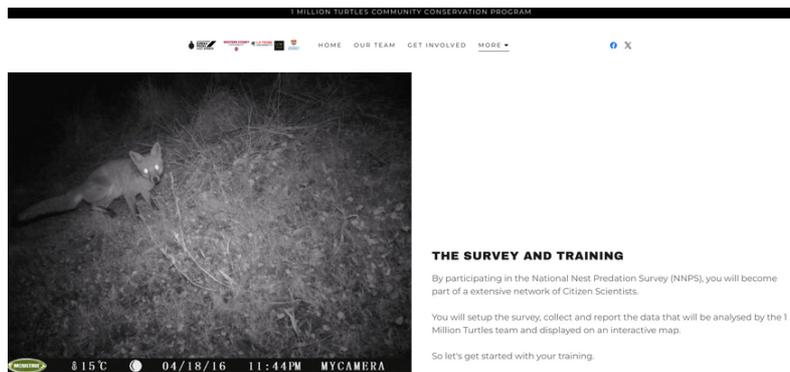
Another BIG thank you to everyone who has participated in our 'Program Evaluation Survey'. This survey has been sent to everyone with a TurtleSAT registration. The responses are so very valuable for finding out what you love and value about the 1 Million Turtles Community Conservation Program and TurtleSAT, and what we could do better going forward. If you haven't sent your response in yet, there is still time. Click 'Start' below to have your say! The evaluation survey may take up to 15 mins or lesser (depending on the length of your responses).



National Nest Predation Survey

We are still very keen for more data on the impacts of foxes on turtle nests. For more information on how to get involved: <https://1millionturtles.com/nnp-survey>

If you have any questions about data entry or other queries please email: 1millionturtlesprogram@gmail.com



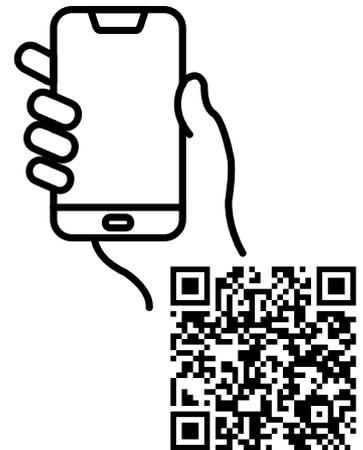
TurtleSAT Updates

Important: Map issue resolved

We apologise for the recent temporary glitch in the TurtleSAT system. Some of you may have experienced the 'DONE' button disappearing when you tried to indicate your location through the map. We are not sure what caused this, but it is now fixed.

Did you miss our Turtle Month Webinar on 25 Oct 2023?

Watch it now - scan QR code to watch it on your phone or click 'Watch Now' below to view it on your desktop



TurtleSAT Updates

How are TurtleSAT data used?

With so much information in TurtleSAT now, many of you may be wondering how are the data being monitored, analysed and are making a difference for freshwater turtle conservation. We have included an example here of how these data and the TurtleSAT platform have been used by individuals for local action and also Australia-wide by the 1 Million Turtles Team.

Marilyn Connell is part of Tiaro Landcare in Qld, a group that have been very actively involved in the conservation and monitoring of the freshwater turtles. This is how TurtleSAT has helped their initiatives:

Marilyn Connell



Marilyn Connell is keen to find out what is happening to the turtles. (ABC Rural: Kallee Buchanan)

Image source: ABC Rural

Marilyn is also a valued member of the 1 Million Turtles program team

Trying not to lose valuable turtle sighting records is a quandary for researchers and community members, particularly those like me who have been collecting records over many years. Laptops change, software gets modified, even my own computer filing system has changed over time. It's so easy to lose precious observations in the mire of a multitude of versions of Excel files.

For the past 20 plus years, I have led a Landcare turtle conservation and research program and have accumulated lots of turtle observations. I started using TurtleSAT on 30 Oct 2014 to record my observations at the same time as keeping a personal workbook of records. The latter was time consuming as it involved finding the latitude and longitude of the location and remembering when next at my computer, to find the Excel file and add the data. Now I only use TurtleSAT. It is so simple. I only need to take a photo, upload it immediately to TurtleSat App, use the map to record the location, answer a few questions and it's done. At any time, I can download an Excel file from TurtleSAT of all my records onto any device.

A bonus is being able to visually see all my records on a map. Interrogating the map revealed there was a length of highway where turtles were being killed. Without the TurtleSAT map, we wouldn't have realised the concentration and extent of roadkill, and as a result the ABC ran a story to help us raise awareness. Now that my observations are stored on TurtleSAT they are also accessible to scientists from around Australia and will contribute to understanding turtles beyond my lifetime.

While the 1 Million Turtles team wishes they could keep an eye on all entries to TurtleSAT, with data coming from all over Australia and now over 20,000 records and counting, this is unfortunately not possible. The 1 Million Turtles team does keep a general eye on the data coming in, particularly for their state of interest (see your State reps on last page). The 1 Million Turtles research team has also used TurtleSAT data to create the Turtle Nest Predictor Tool and undertake weather cue modelling for nesting, both of which will greatly enhance our ability to help citizen scientists find and protect turtle nesting hotspots.

The nest predictor tool uses environmental data from known turtle nesting areas to predict additional locations where turtles are likely to nest. It considers vegetation cover, soil type, tree cover, and distance from the water at each nest that has been uploaded into TurtleSAT, and then provides a map of all of the similar locations across nearby habitats. We can then look in those predicted areas to see if turtles have actually nested there.

The weather cue modelling similarly aims to identify the weather cues (temperature, precipitation, barometric pressure, moon phase, etc) that are associated with turtle nesting. We will then be able to provide more precise call-outs to citizen scientists on when to expect nesting. Please note that this model is probably 1-2 years away in the future, as it is a new student project. Both of these tools will feed into future management decisions so that local managers, including local Councils, can identify times and places most likely to have turtle nesting occur.

TurtleSAT's Role in Conservation Status Updates

TurtleSAT data have also been influential in the conservation status updates for turtle species that has led to some species being listed on the Environment Protection and Biodiversity Conservation Act threatened species list, like the Western saw-shelled turtle, *Myuchelys belli* https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=86075, with more species to be assessed over time.

Putting Your Data to Use

In the meantime, we would like to encourage all of you to keep an eye on your own records and other records from your nearby area to look for possible trends in turtle and nest numbers that may be increasing or decreasing. Look out for any discrepancies (e.g., turtles reported in your local area such as a shopping centre which would be unlikely), and check your records on the map after each submission. A good practice would also be to always log in with your details when submitting any data.

Need some Help?

If you are concerned about turtle numbers in your local area and there isn't currently any community, Local Council or state government action to address this, please reach out to us 1millionturtlesprogram@gmail.com and we will be able to offer advice on some activities you can do through 1 Million Turtles program and try to put you in contact with the right people in your area who could help.



Spotlight on community turtle conservation Western Australia Shines



Thank you to Atlanta, Nadine and Lauren from WA for sending us an update of their Turtle Month and Nesting Season activities.

Atlanta Veld- Albany

This season saw the first coordinated turtle tracking season in the Albany areas of Western Australia, thanks to the Save Our Snake Necked Turtle program. The impressive effort involved 32 volunteers who clocked up over 700 hours around Tjuirtgellong / Lake Seppings Albany WA between 1 October and 1 December 2023. This resulted in 240 turtle sightings including 9 dead turtles. 288 nests were recorded, 125 were predated but 163 were able to be protected. With an average of 12 eggs per nest this equates to around 1950 hatchlings that potentially might emerge July / August 2024 as a result of these conservation actions.

Friends of Yellagonga - Volunteers Nadine Jaeger & Lauren Hampson

Nadine and Lauren have relatively recently worked with Friends of Yellagonga to map and protect turtles and nests around wetlands in the northern suburbs of Perth. You can read more about their journey to be part of the protection of around 300 turtles and 145 nests this season below (written by Nadine and Lauren).

Prior to the involvement with the Turtle Tracking program, Lauren and Nadine learned of the Southwestern snake-necked turtles through pure chance encounters. In 2021, Nadine had the privilege of witnessing the awe-inspiring journey of our snake-necked turtles, from hatchlings to mass nesting events along Scenic Drive, Lake Joondalup, which is part of the Yellagonga Regional Park in the northern suburbs of Perth, Western Australia. However, as she learned more about the turtles over the years and observed the challenges they faced during these vulnerable life stages, it became clear that the turtles needed help.

After engaging with locals and Friends of Yellagonga (FOY) volunteers in 2022, she joined the group to contribute her support. Similarly, in 2022, Lauren attended a weeding day at Tanah Close, Lake Goollelal, where she and fellow FOY volunteers stumbled upon numerous predated turtle nests – a devastating discovery. Although saddened by this finding, it sparked Lauren's interest and drove her to find out more about the southwestern snake-necked turtles in our local wetlands. As soon as the opportunity arose to help the turtles, she jumped at the chance to get involved.



Nadine and Lauren - Stars of this community spotlight

After attending the Saving Our Snake-Necked Turtle (SOSNT) program training session in 2023, Lauren, Nadine, and 85 dedicated community members became volunteer Turtle Trackers. It has been a pleasure collaborating with SOSNT, Murdoch University, Department of Biodiversity, Conservation and Attractions, Friends of Yellagonga, City of Wanneroo, City of Joondalup, and our fantastic community, all of whom have made a significant impact on Yellagonga Regional Park turtles in the first year of this citizen-science initiative – with around 300 turtles and 145 nests protected!

With teams of volunteers covering various sites across the regional park, individually tailored rosters, and a WhatsApp group for communication throughout the season, everyone played a part in supporting this precious species and each other. It's breathtaking seeing these beautiful turtles absolutely everywhere on mass nesting days, and sharing this experience with so many like-minded people created an incredible sense of community. One moment you're monitoring one or two turtles and admiring them from afar as they emerge from Lake Joondalup; the next, you're messaging the group letting them know you might need assistance – with six appearing within a few metres of each other, and more appearing in the distance.



Large female returning to lake after nesting - narrowly missed being hit by a truck

It was fascinating being out there and constantly learning about snake-necked turtles and their habits. Often, we'd watch a single turtle for a few hours while she looked for a spot to nest, dug the hole, laid her eggs, covered and compacted the nest, then headed back to the lake. Using the TurtleSAT app proved invaluable for logging sightings and nest locations, providing insights into nesting hotspots over the season.

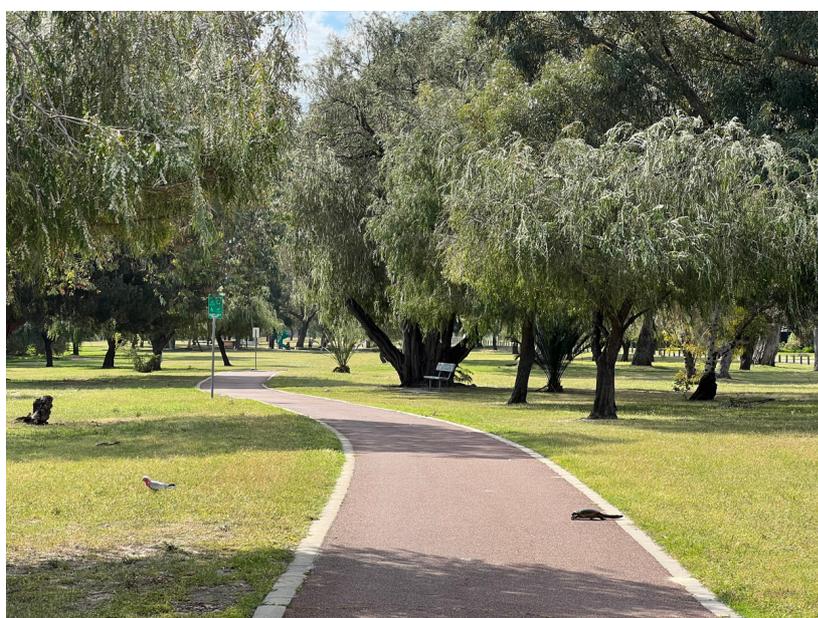
With the information we were gathering, interestingly we found turtles were commonly emerging from the lake to nest from around 1pm, with some still out after 6pm! This made it easier to anticipate increased turtle activity, making our time more productive when protecting the nests. It would be interesting to explore whether similar behaviour is apparent in other wetlands across Southwest WA. We also recognised mass nesting events often correlated with a drop in barometric pressure, a drop in temperature and sometimes sudden cloud cover and rain, and even thunderstorms. Many of us assisted during these en-masse events, rain or shine, with volunteers coming from other sites and local residents working together to protect nesting turtles and cover their nests – even in instances where turtles chose to nest in private gardens, and we had to ask permission to enter people's yards!

We've also been meeting more and more people that have been quietly helping the turtles – and helping us along the way; local residents, wildlife rescue and rehabilitators, photographers, and volunteers involved in friends' groups, many with similar thoughts, stories, and experiences. A recurring sentiment emerged, however: turtle numbers were declining. Even local long-term residents said they weren't seeing nearly as many turtles nesting or hatching as they had in the past, but they were happy to see the work that was being done to help them now.

There are many threats these turtles now face, predominantly resulting from the lack of suitable nesting habitat around local wetlands due to urban development. Some of these threats include the risk of encounters with cars, bikes, lawn mowers, pedestrians, off-lead dogs, predation by introduced and native species, notably foxes and Australian ravens (ravens were also cleverly testing to see if mesh protectors were secured well enough), as well as obstacles such as open drains, curbs, fences, and litter. We can see just how much room for improvement and value there is in protecting and increasing native habitat – especially considering these turtles can travel up to 1km to find the perfect nesting spot! Some areas surrounding the wetlands are more densely vegetated, and there's a greater distance from roads and housing, providing better habitat for the turtles.

While monitoring for turtle activity in these areas proved more challenging, predated nests were sadly often the primary indicator. Contrasting this with sites like Scenic Drive, Banyandah Boulevard, Donnelly Park, and similar locations comprised of open expanses of mown grasses and weeds with little canopy cover, where much of the original vegetation has been removed since European settlement and continued encroaching development. Although this made it easier for us to detect turtle activity and protect the turtles and nests, it also unfortunately meant the turtles and their nests are more exposed and vulnerable, with hatchlings being even more so.

By continuing to work together and build on this project to protect turtles and their nests, along with undertaking revegetation efforts around the lake, we can significantly improve the habitat of our amazing Southwest Snake-Necked Turtles and help the turtles survive and thrive again. Hopefully, this work will also one day positively influence future development practices – to safeguard precious wetlands and their vital ecosystems.



There are four turtles in
this photo.

Can you spot them all?



A protected nest

Research Update

Hatchling Survival

Why is Conservation Never Easy?! Our ecosystems are so very complicated to manage once they have been altered. While we are working to protect nests and get more hatchlings back into our waterways, what happens to them once they are in the water? This is what a number of research projects are trying to find out.

The work of Tiaro Landcare to protect many Mary River Turtle nests and their collaboration with researchers from Charles Darwin University has led to approximately 10,000 hatchlings entering the river over the past two decades. However, a population study found very few have reached maturity i.e. about 20 years of age. Research is now looking into whether this high mortality of immature turtles is due to the presence of large predatory native catfish that seem to have thrived since the introduction of a tidal barrage.

Tiara and District Landcare is also working with the Mary River Catchment Coordinating Committee to help hatchlings upstream of Gympie, where fork-tailed catfish numbers are lower, and hopefully they will have a greater chance of making it to breeding age. Read more of the story here: [Researchers probe mass deaths of 'bum-breathing' Mary River turtle babies - ABC News](#)

ABC RURAL

Researchers probe mass deaths of 'bum-breathing' Mary River turtle babies

ABC Rural / By Jennifer Nichols

Posted Mon 15 Jan 2024 at 10:38am, updated Mon 15 Jan 2024 at 1:35pm

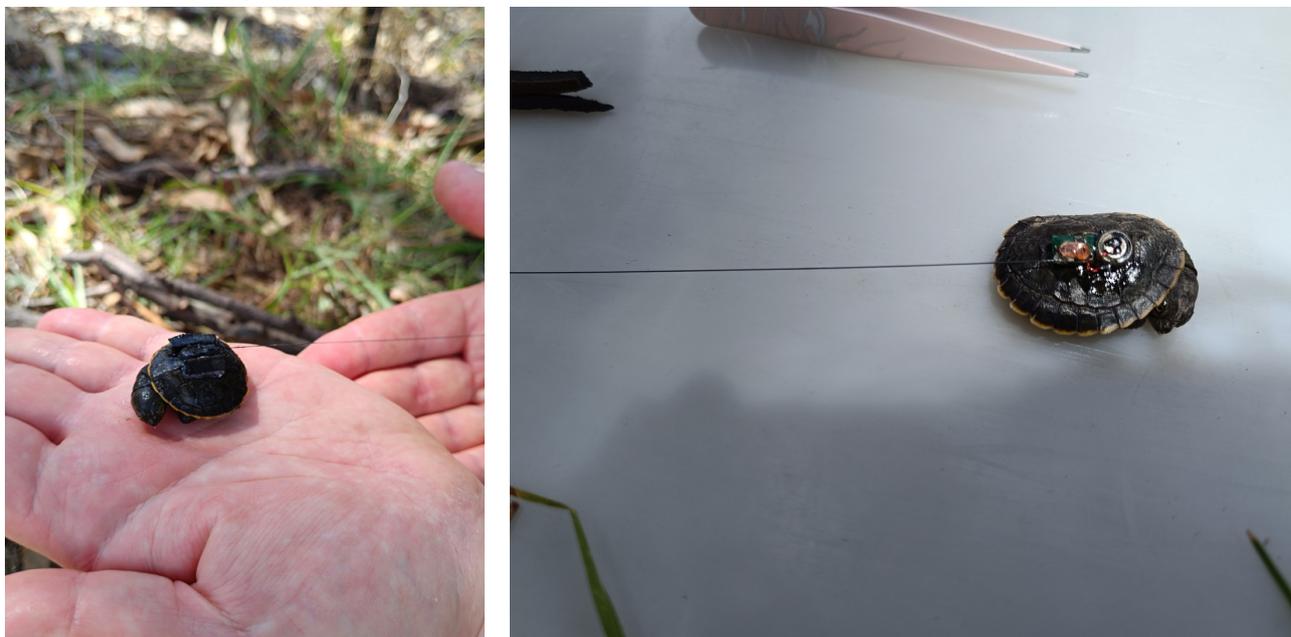


The Tiara and District Landcare volunteers have been researching the Mary River turtle for decades.
(Supplied: Tiara and District Landcare)

Images Source: ABC Rural, from featured article

The turtle research team from La Trobe University are also looking at hatchling survivorship, this time in the Murray River. They have marked over 100 hatchlings ready for release. They will set nets each year over the next few years to see how many are able to be recaptured, which will give an idea of how young turtles are faring in this river system.

Photo of hatchlings fitted with trackers



(Photo credit: Dr James Van Dyke)

Another La Trobe University student is using TurtleSAT and Atlas of Living Australia turtle data to create habitat suitability models for the three Murray River turtle species that will take into account things like the altitude of the location. The model would ultimately allow you to look at a map to predict where we should find each species and where they should be in highest numbers, in places where we do not already have records. Big gaps in our current records are in the high country and the Darling River catchment in particular. In the former, we do not know how high turtles exist in the mountains, and in the latter, turtles should be present throughout the Darling but we have little data. The models will also be useful for predicting how turtle distributions might change as aquatic environments alter as a result of climate change.

Do you have a community or research story to share?

We are really keen to share the turtle conservation achievements of groups and individuals around Australia. If you would like to share your group's activities in a future newsletter, please let us know via 1millionturtles@1millionturtles.com and include 'newsletter update' in your subject heading. And don't forget to tag us @1millionturtles on Facebook if you are sharing your turtle photos, activities and stories.

To Find Out More

Visit our 1 Million Turtles <https://1millionturtles.com> website for more information about the 1 Million Turtles program, the team members who support the project, videos, training modules, some of the recorded webinars, and more.

We also have two Facebook pages; (1) [TurtleSAT](#) which provides updates on interesting sightings and community alerts such as red-eared sliders, and (2) [1 Million Turtles](#) which provides general freshwater turtle information, project updates and invitations.

1 Million Turtles Team Contacts

Remember that if you would like one-on-one support from a team member please contact 1 Million Turtles 1millionturtles@1millionturtles.com, include 'Need 1 on 1 support' in the subject heading, provide us with some information on the nature of the assistance you require along with your location and best contact details, and a local contact with be in touch with you.



NSW/ACT - Assoc. Professor Ricky Spencer, Ms. Geetha Ortac, Dr Deb Bower (Armidale area)



VIC/TAS- Assoc. Professor James Van Dyke (and NSW Riverina)



SA - Dr Sylvia Clarke, Professor Mike Thompson



WA - Dr Anthony Santoro



QLD - Ms Marilyn Connell, Assoc. Professor Deb Bower



NT - Assoc. Professor Deb Bower