Newsletter 5

February 2023

Welcome to the fifth of our quarterly newsletters and the first for 2023. These newsletters provide updates on what you and the program have achieved in the last couple of months.

This edition includes:

- 1 Million Turtles program update
- TurtleSAT app and website updates
- Spotlight on community turtle conservation - Western Australia
- National Nest Predation Survey call for data
- Research update from University of New England – Trapping, tagging and tracking
- Research update from La Trobe University – Timing of nesting

1 Million Turtles Community Conservation Program

It was an interesting season for our spring nesting species with so much rain and flooding in southern and eastern states. Nesting in most parts appeared to be quite late and spread out in time. See the research update from La Trobe for more details.

Now that peak nesting appears to be over we really encourage you to run the National Nest Predation Survey with buried chicken eggs. Fox attacks on nests and nesting females is a key threat to our turtles and we need to know more about when and where the impact is greatest so that we can help local landholders, communities and land management organisations plan the best actions to reduce this impact into the future. More information further in the newsletter.

With patchy nesting in many regions it was a more difficult year to catch turtles nesting and protect individual nests with mesh. But more than 200 protected nests were recorded on TurtleSAT – Well done!!!

Go to **https://1millionturtles.com/nest-protection** for more information and to access the training module to be ready to help out next season.

This project is supported by an Australian Government Citizen Science Grant.

Turtle survey with Ngarrindjeri Aboriginal Corporation and community members, SA Department for Environment and Water, and James Van Dyke from 1 Million Turtles. Hindmarsh Island, SA.

Murraylands and Riverland Landscape Board Family Turtle Nest Survey. Lake Bonney, SA.

The flooding has also impacted opportunities to invite the wider community to be involved in surveys. Searching for turtles and nests has been a little tricky in many areas but there were still some events run to get people of all ages together to learn more about conserving their local freshwater turtles. Above are a couple of photos from activities surveying for turtles and nests in South Australia in January 2023.

TurtleSAT updates

Together we have recently hit some impressive milestones on TurtleSAT. Over 15,000 records in total, over 200 nests protected and over 1000 turtles saved. This spring-summer season alone included 1462 new turtle records, and 666 nest searches revealing over 1000 nests. This is another increase on the previous year and a testament to your dedication to turtle conservation.

To make it even easier for you to enter and view data there have been some recent upgrades to the functionality of TurtleSAT, some of which are still under testing.

Recording nests

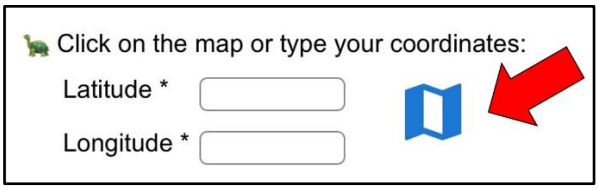
Now is a great time to walk around your local wetland and record turtle nests. Most nests that are dug up by foxes will look like this photo with egg shell still present. Hatchling turtles ware also starting to emerge from nests, so watch out for them.

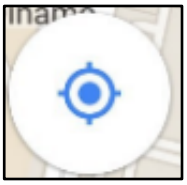
Did you know that some bird species can take turtle eggs from the nest without digging up the whole nest, while foxes make a large depression and destroy the nest cavity in the process?

Hence the 'Evidence of a Predator' question in the Turtle Nest Location section of TurtleSAT;
Scratchings – nest cavity intact or *Scratchings – nest cavity not intact.*

A nest destroyed by foxes recorded in South Australia by TurtleSATer, Andrew Wurst.

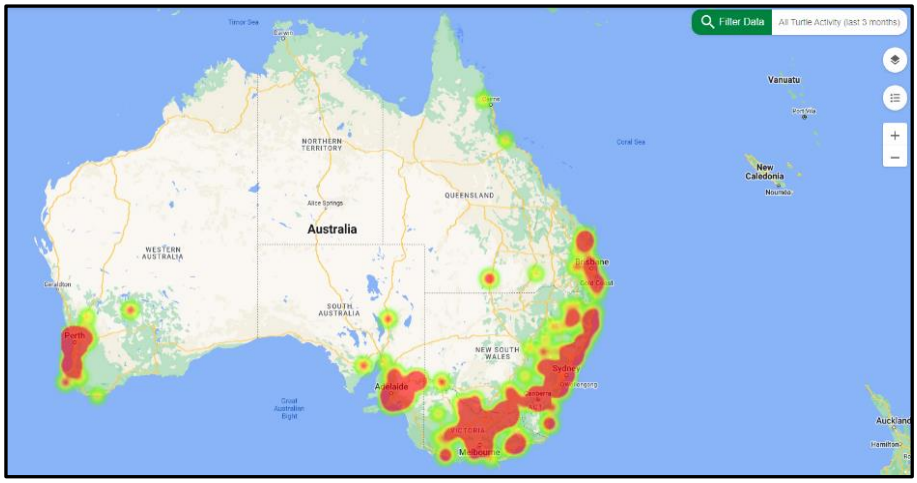
Just a reminder, if you have a sighting to submit, you can click on the map icon and locate yourself using the bullseye on the map if you are standing on site and have location sharing switched on your phone.





Map Displays

We have improved the visual display options for you. TurtleSAT will now open to a heat map of all turtle activity recorded by TurtleSATers over the last 3 months. You can zoom in on this to see your local area. You can select the Filter tab and see a whole suite of other displays, including heat maps associated with nesting and turtle deaths. You can also switch it to display the individual markers. Note how deaths are associated with roads in your area and nests are often clumped in certain places.



Turtle activity for the last 3 months heatmap on TurtleSAT

New feature coming - using photos to autofill locations and dates

We are currently working on a brand new TurtleSAT feature that extracts data such as date, time and location from your photos and autofills these for you. There is also a bulk upload option. These features are particularly useful for photos that were previously taken and have not yet been submitted to TurtleSAT. This new feature is currently under testing to help us understand how it works on different devices and operating systems. So, keep an eye on our Facebook pages for more updates on this feature!

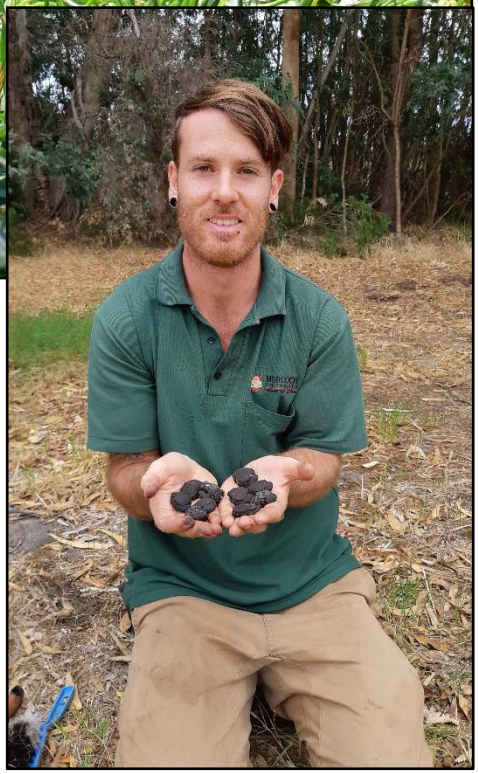
What these changes will mean for you:

1. You can upload historical photos without having to remember the date, time and location.
2. If you are on a busy road and see a turtle, stop and move it if it is safe, then simply take a photo and upload it into TurtleSAT later when safe to do so.
3. If you are in a location with no service and TurtleSAT won't open, you can simply take a photo and put it into TurtleSAT later when you are internet connected.
4. You can bulk upload a series of images taken at different dates, times and locations.

(Very large) Spotlight on WA

Juvenile Snake-necked turtle on the move. Credit – Anthony Santoro

A fantastic turtle conservation project has hit the ground running over the 2022 spring season in Western Australia – *Saving Our Snake-Necked Turtle* or *SOSNT*. Led by the South West Group and Murdoch University's Harry Butler Institute, funded by Lotterywest and with a huge range of partners from conservation organisations to local Councils, the project aims to upskill the community to track nesting *Chelodina colliei* turtles and protect their nests, as well as conduct important population and predation surveys across Perth and regional WA.



Dr. Anthony Santoro with hatchlings. Credit – Caitlan Davis

During the second half of 2022, twenty two *Information and Turtle Tracker Training* presentations were held across multiple Council areas with hundreds of attendees. Close to 100 people joined one of the eleven active Turtle Tracker teams and agreed to do one or more shifts each week over spring, patrolling designated areas of specified local wetlands, recording observations of turtles and nests using TurtleSAT, and where possible protecting observed nests with mesh.

When nesting was observed on a shift, other local team members were immediately notified to come and help look for more. In just two months, 550 turtles were observed and 280 nests were protected across 19 wetlands.

Existing groups like the Friends of Yellagonga Regional Park, north of Perth have become important project partners, sharing their turtle and wetland knowledge, and in return the project has given them a greater voice to pursue their local conservation goals.

"Our group is looking forward to working with Dr Anthony Santoro and his team this year. We have been raising community awareness through our work days and Facebook and Instagram pages. We have also been collecting a lot of meaningful data which we have shared. With Anthony and the 1 Million Turtle program's support we hope to start nest protection this (coming) season," said Guy Austin-Crowe from Friends of the Yellagonga.

Through wide active involvement by the community and Councils, and lots of media attention the increase in our combined knowledge of the Southwestern snake-necked turtles and measures we can take to protect them has grown exponentially.

Take a look at all the very pretty purple records for the Snake-necked Turtle on TurtleSAT. Amazing effort WA!

Friends of Yellagonga at work. Image supplied.

https://m.facebook.com/savingoursnakeneckedturtles/

Albany WA

Sand covered South western snake-necked turtle hatchling emerging. Credit- Atlanta Veld

We have also welcomed another Western Australian 1 Million Turtles team member - **Atlanta Veld**! She has been encouraging the community in the Albany area to record freshwater turtle sightings, nesting and hatching for many years. Working with the Albany Council she devised an online tool for records to be shared and is now moving this over to TurtleSAT to combine this important information with the rest of our national freshwater turtle data.

Atlanta has noticed weather triggered nesting days in the Albany area for the Southwestern snake-necked turtle are now occurring well into November which is a shift from the October nesting observed when she started collecting data in 2007.

She also had the opportunity to closely monitor a nest laid in a resident's garden, just opposite Lake Seppings in Albany, on 25 November 2021. First signs of movement were noticed on 27 August 2022 with a small hole appearing at the nest entrance. An opportunistic check on September 7 saw a hatchling in the process of emerging. The single hatchling took roughly half an hour to climb out of the relatively steep neck of the nest chamber with no others seen that day.

National Nest Predation Survey

Fox caught on wildlife camera

Get set for an autumn survey!

Many of those who ran this survey burying chicken eggs in winter had low fox predation on their artificial nests, even though some saw foxes on the cameras. This is a very interesting result, because it shows that in many locations across Australia, foxes might not be targeting turtle nests in the winter. That could be really important for turtle conservation, since some turtles have active nests over the winter months, and these might escape some level of predation. So, we hope you haven't been discouraged by low predation results- every data point counts, even zeroes!

What we need to do next is determine whether fox predation rates increase in the summer and autumn at these sites and others. Now that nesting has largely finished, it would be the perfect time to set out a summer nest plot. If there is an increase in fox predation, then it will be good evidence that foxes shift their foraging behaviour at different times of year to target turtle nests. On the other hand, if they do not, then we may have some evidence that fox impacts are not actually that important in some areas. The results either way are very important to understanding how best to protect freshwater turtles in Australia!

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: 1millionturtles@1millionturtles.com

Research Update – University of New England – Associate Professor Deborah Bower

The University of New England researchers have been busy finding out where turtles are spending their summer. They have attached acoustic transmitters to over 100 turtles from the Gwydir River in New South Wales to South Australia. The acoustic transmitters log data on a network of stationary receivers set in discrete arrays throughout the Murray-Darling Basin, allowing the capture of broad-scale movement events.

University of New England Research Assistant Jess York (below) had to get wet to download the acoustic transmitter logs, which are stored on receivers that sit in the water. The receivers log turtle transmitter identification codes when turtles come within range, and a network of receivers in the Gwydir River allows us to track long distance movements of Broad-shelled and Murray River short-necked turtles. Preliminary findings have identified some large movements. A notable male Murray River Turtle named 'Bilbo', moved over 70 km in three months between Gwydir Wetlands upstream river channel.

Jess York, University of New England.

Juveniles at Gwydir Wetland.

Babies of every floodplain turtle species were caught in the Gwydir Wetland during recent surveys. Broad-shelled turtles on the left, Murray River short-necked turtle in the middle, and Eastern long-necked turtle on the right. These turtles were about a year old.

Using a different type of technology, GPS tracking of Eastern long-necked turtles has unravelled a hub of movement on the University of New England's campus farm. Many long-necks have moved around the property largely using the network of small creeklines. A turtle named 'The Professor' (right) moved through the creeklines plus several kilometres overland and found himself in a large farm dam on a neighbouring property, where he is now residing.

'The Professor' with GPS tracker attached.

The rest of the season will see the team attaching more acoustic transmitters to turtles near Bourke in the Darling River in partnership with the NSW Department of Planning and Environment, and in Katarapko National Park in South Australia in partnership with the SA Department of Environment and Water.

Research Update – La Trobe University – Associate Professor James Van Dyke

In a typical year in most of the upper Murray catchment, into north-eastern Victoria and south-eastern New South Wales, there is a surge of freshwater turtle nesting associated with warm spring rains sometime between late October and mid-November. Shortnecked turtles, *Emydura macquarii* tend to nest in a coordinated way, with many females nesting around the same time. Eastern longnecked turtles, *Chelodina longicollis*, may also nest together in groups or more sporadically, and often slightly later in the year than the shortnecks.

Turtle nesting in the upper Murray catchment was atypical in 2022, likely as a result of the combination of unusually cold temperatures and flooding. There was little coordinated nesting of multiple turtles seen. Temperatures were unseasonably cold well into December, with overnight temperatures dropping as low as 6 C, and flooding reduced the available nesting habitat. Some observed turtles attempted to dig holes that filled with water due to both rainfall and high water tables and then abandon their nesting attempt. These turtles presumably nested later (they can hold their eggs for long periods with no harm done).

Nesting activity by both species continued at a slow rate from early November all the way to late December. The number of nests destroyed by foxes in locations with long-term data had been lower than normal, which probably indicated that there was much nesting yet to occur. When we conducted a round of trapping and ultrasounding of females in early-mid December at many sites near Wodonga and Bairnsdale, VIC, most of the eastern longnecked turtles appeared to have nested, but up to two-thirds of female shortnecked turtles were still carrying eggs waiting to nest.

As the weather warmed and dried, there seemed to be an ongoing low rate of nesting on many afternoons and evenings, including a larger group nesting on Christmas Eve as a storm passed over. The low rate of nesting has been a challenge with many nights spent unsuccessfully looking for nests to protect. We are thankful for every nest that you have been able to protect this year, given the extra challenge!

Hatching is also likely to be delayed this season so keep an eye out from now on. We are keeping a close eye on TurtleSAT to see when and where your hatchling sightings pop up.

We're 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.

Find out more:

https://1millionturtles.com website with information about the 1 Million Turtles program, the team members who support the project, links to event registrations, videos, training modules, some of the recorded webinars, and more.

Two Facebook pages; TurtleSAT which provides updates on interesting sightings and community alerts such as red-eared sliders, and 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.

New South Wales/ACT – Assoc. Professor Ricky Spencer, Ms. Geetha Ortac, Dr Deb Bower (Armidale area)

Victoria/Tasmania - Assoc. Professor James Van Dyke (and NSW Riverina)

South Australia - Dr Sylvia Clarke, Professor Mike Thompson

Western Australia - Dr Anthony Santoro

Queensland – Ms Marilyn Connell, Assoc. Professor Deb Bower

Northern Territory - Assoc. Professor Deb Bower