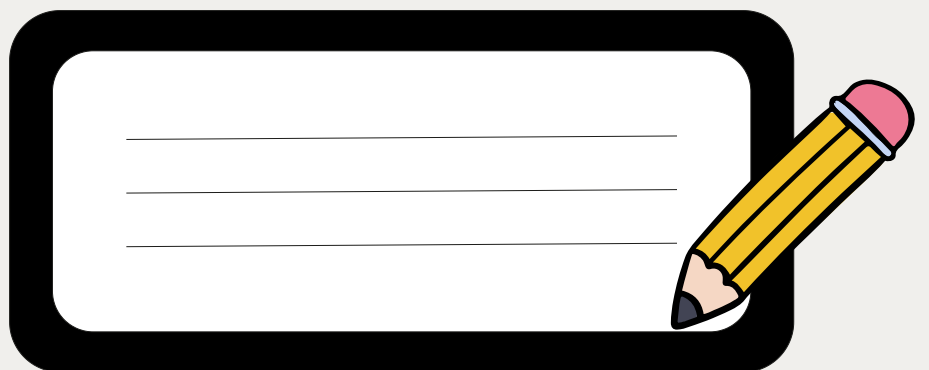
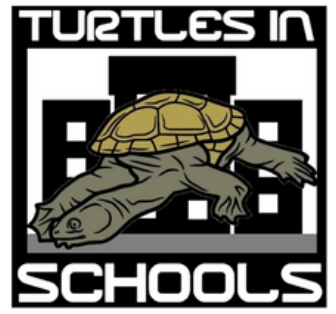


TURTLES IN SCHOOLS

TERM 2 WORKBOOK





TURTLES IN SCHOOLS

Produced by the
1 Million Turtles Community
Conservation Program
and funded by
The Foundation for National
Parks and Wildlife.

In the pages that follow, you will find a comprehensive set of lesson plans.

Our initiative is not just about imparting knowledge but fostering a deep connection between students and their natural environment and instilling a sense of responsibility and awareness of freshwater turtles and their conservation.

As we embark on this educational venture, we extend our gratitude to educators, students, and all those who champion the cause of conservation. The Turtles in Schools Program is not just a curriculum; it is a movement to inspire the next generation of environmental custodians.

Thank you,

**1 Million Turtles Community
Conservation Program**

57 LESSONS

TERM TWO

THE NATIONAL NEST PREDATION SURVEY

- Learning Intentions
- Background
- Activities
- Curriculum Mapping

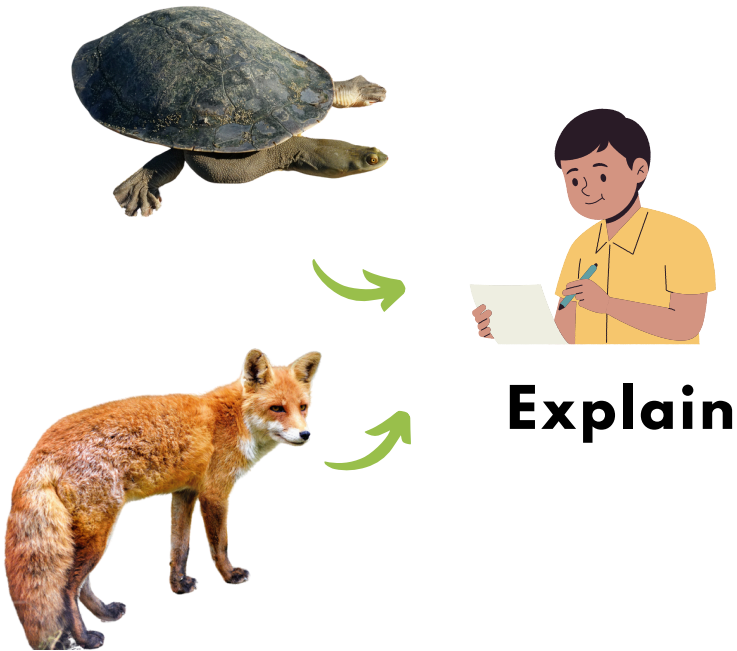
Photo credit: Dr Donald McKnight



Learning Intentions

(1) Explain why the National Nest Predation Survey is important;

(2) Apply their skills as a citizen scientist in the implementation of the National Nest Predation Survey.



Background Information

National Nest Predation Survey (NNPS)

Importance of the National Nest Predation Survey:

Nest predation rates on turtle nests are very high in many parts of the country. Introduced foxes are the major predator. By participating in the NNPS, you will be monitoring the impacts of predation on turtle nests in your area and be part of a powerful citizen science network providing data to improve conservation actions for our freshwater turtles. The data collected in the National Nest Predation Survey will be used to develop a national interactive 'hotspot' map to determine region specific estimates of predation rates.

How to conduct the National Nest Predation Survey:

The following instructions are taken from the 1 Million Turtles Community Conservation Program website (Copy and paste into browser: <https://1millionturtles.com/nnp-survey>).



National Nest Predation Survey (NNPS)

Equipment:

For your personal safety

- Gloves (e.g., disposable gloves)
- Alcohol wipes
- 1 × First aid kit



To set up the survey site

- 2 x Carton of dozen eggs
- 1 × 15 cm Hand auger or a hand trowel
- 1 X 30 metre Tape (or you may also use shorter tape measures if available)
- 10 × Steel flags (it could be any bright colours for easy identification when taking photos upon completion of the site set-up) (1#) - If you don't have any steel flags and would like some, please contact us at 1millionturtlesprogram@gmail.com to request for a set (10 flags) and we will mail it out to you.
- 3 x Wooden stakes (or 4 if you are not setting up a wildlife camera) (2#)
- Your phone or a camera to take photos of your site (before removing the steel flags)
- 1 X Garbage bag (to carry back any rubbish)

If you are setting up a wildlife camera (optional)

- 1 × Star post plus cap
- 1 × Star dropper or Star picket
- 1 × Hammer or Mallet
- 2 × Cable ties (to secure the camera to the star dropper or picket)
- 1 × Wildlife camera trap (aka remote sensor camera or motion sensor camera)
- Alcohol wipes (to wipe down the camera before you leave the site).

National Nest Predation Survey (NNPS)

Setting Up a Wildlife Camera (Optional)

- You may use a star picket or any existing sturdy structures such as a fence post, or tree trunk. If you are strapping the camera to a tree, check that your camera strap is large enough to go around the trunk.
- Generally, it is not recommended to mount your camera on trees that are thin as this may cause your camera to sway during windy conditions causing the camera to trigger falsely.
- If your camera doesn't come with a mounting strap, you may also use a cable tie to mount the camera.
- Another important consideration is minimising the effect of grass waving in the wind. If possible, please try and set up your cameras in areas with short grass.
- Mount the camera facing in the southerly direction to avoid strong sun glare.
- Tilt the camera slightly so that it faces downwards. This ensures that the camera sensor's detection zone or field of view (FOV) width is maximised when it hits the ground. This helps to detect the movement of any wildlife on the ground that are visiting the nests.
- It is likely that some of the nests may be outside of the camera's FOV. This is ok, as long as one or more nests are within the FOV.
- You may opt to set up your camera once the survey site has been selected and do the necessary test to ensure your camera is working well. Once you finish testing the camera, you may it switch off.
- Once the nests set-up is complete (and all the flags are removed), switch the camera on before leaving the survey site and leave it switch on for the duration of the survey (i.e., 3 weeks). Please wipe down the camera's exterior before leaving the site (using the alcohol wipes). This ensures that you minimise any scent trails from the handling of the camera.



National Nest Predation Survey (NNPS)

Select a Survey Site:

Freshwater turtles are present in most wetlands throughout mainland Australia. Ideally the NNPS is done near a wetland (e.g., river, creek, lagoon, pond). It can also be done anywhere if you have enough space and have the right permissions in place (e.g., on private land or in conjunction with local management agencies).

It is best to conduct your nest predation survey within 100m from shore. Turtles come out of the water and generally nest in habitats that are open and away from trees. Some species, like Eastern Long-Neck turtles, may walk long distances but most turtles nest relatively close to shore.

You can often find dug up nests and egg shells on the ground while walking around your wetland. Don't forget to record those dug up nests into TurtleSAT.org.au. Sites close to these nesting grounds make ideal areas to conduct your survey.



Turtles dig a hole that is up to 30cm deep and will deposit 10-30 small eggs per nest. We will use 2 larger chicken eggs in our artificial nests. Turtle eggs will incubate underground for 2-3 months for most species, but some like the Broad-Shelled Turtle, have eggs that remain underground for up to 12 months before hatching. The NNPS can take place at any time of year, except during Turtle Month (November), to make sure we avoid encountering and disturbing turtles actively nesting.

TIP: We do not recommend setting up the survey on land with cattle present as they destroy the set up. Sheep don't appear to do as much damage.

One site is sufficient for this survey.

National Nest Predation Survey (NNPS)

Setup Your 20m x 20m Survey Plot:

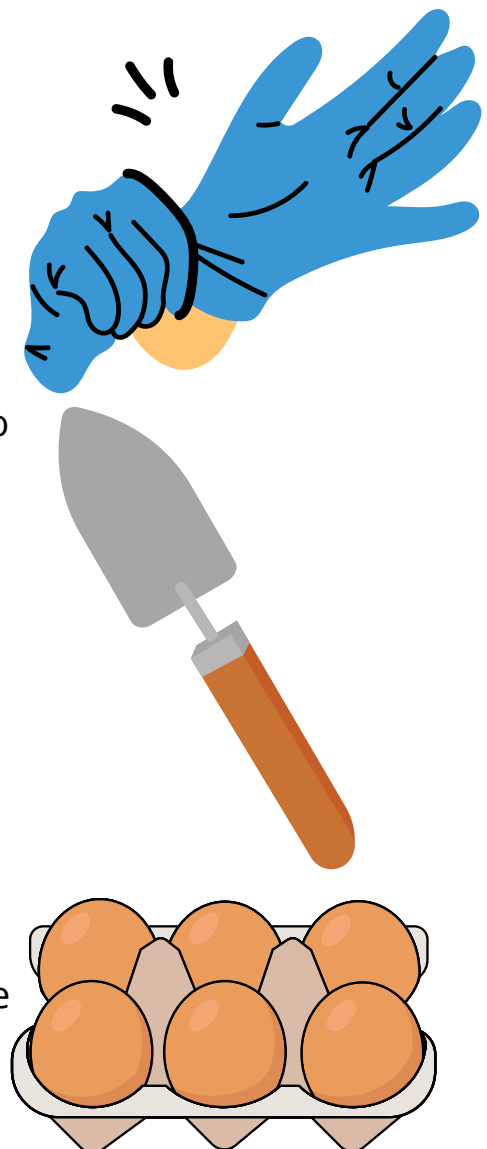
It is best to have at least 2 people setting up a site. Measure out a 20m x 20m square plot using the tape measures in your kit and at each of the four corners hammer in a small wooden stake or star post. If possible, use a marker pen or paint to number each corner wooden stakes.

Place your wildlife camera (if you are using one) on one corner star picket facing southerly towards the middle of your plot securing it with cable ties. Remember to switch on the camera before leaving your site. We recommend to set the camera to capture three still shots with a 1-minute delay. Record the GPS the location of your site. Please use decimal degrees (e.g., -34.04214, 151.05211).

Creating Nests:

Ensure you are wearing gloves at this point. You can use an auger or a trowel to create 10 holes. The holes are created randomly and are not evenly spaced. We recommend using an auger to create a round nest. If you don't have an auger, trowels (e.g., garden trowels) can also be used. However, please don't use a shovel as the hole may end up being too large.

Dig the hole approximately 10-15cm wide and 15-20cm deep. In each hole, bury two chicken eggs. Please ensure that you are wearing gloves at all times while undertaking these tasks. This ensures that you don't leave your scent trail on the eggs. After placing the eggs into each hole, cover them with the loose soil so that it is flush with the ground and place one brightly coloured flag (or other visible marker) at each hole.



National Nest Predation Survey (NNPS)

Leaving the Site:

Before you leave, go to each corner of the site and take a photo. Take as many photos as needed from each corner point while the coloured flags or visible markers are still in place. Please ensure that the photo captures sufficient details of the surrounding (e.g., clear visibility of the coloured flags and the corner stakes such as the wooden stakes) to help you identify and locate the nests when you return. Once you are done with taking the photos, please remove all coloured flags/visible markers from the nests. Again, it is important that you are wearing gloves to carry out all these tasks.

You need to return to the site in three weeks and locate the nests. Finding the nests can be difficult, this is why your photos are important. You may also opt to print out the photos and bring them along to use as a reference to help you find the nests in three weeks.

TIP: Printing the photo on A3 works the best, but iPads can be effective as they allow you to zoom in when guiding people to find nests.

Once you are done with taking the photos, please remove all coloured flags/visible markers from the nests. Again, it is important that you are wearing gloves to carry out all these tasks.

If you are setting up a wildlife camera, before you leave - ensure that it is switched on and wiped down the camera with alcohol wipes to remove any scent trails.



Wetland Activity

ACTIVITY

(1) Participate in the National Nest Predation Survey. Follow the instructions on how to set up the survey plot and create artificial nests.

