



Videos 8 and 9 Teacher Resource – Survey time

The basic concept of a survey: do the same thing every year, and compare the results to see if the surveyed feature is changing (e.g. number of animals, public attitudes, carbon dioxide levels...).



Tuning in: Can we count every single wedge-tailed eagle in Tasmania? Probably not, but reports from many hands (and eyes!) surveying together act as an indicator of how numerous they are. We can compare that indicator each year to see how things are changing; e.g. a simple comparison could be ‘What percentage of surveys reported each raptor species?’. The more surveys done each year, fully covering Tasmania’s wide range of habitats and conditions, the more accurate an indicator we get, and the more quickly we can detect any worrying population declines (or encouraging recovery).

Clare and James’ videos for days 8 and 9 take us through the specifics of [What to survey \(design\)](#) (day 8) and [How to survey \(delivery\)](#) (day 9).

For our teachers, students and students’ families keen and able to participate in the *Where? Where? Wedgie!* raptor surveys this May, please remember to book your survey square ASAP on the online map. This enables everyone to coordinate, to cover all across Tasmania.

Each year, you can survey on any or all of Friday to Sunday in mid- May and end-May. Everyone can take part - from newbies to professional ornithologists. All that you need to get familiar with the birds and the survey is on the NatureTrackers website.

You’ll be able to confirm the exact survey dates each year by heading to the Nature Trackers website - Get started today: <https://naturetrackers.com.au/projects/where-where-wedgie/>

If your class is after the first day of surveys, you can see this year’s results uploaded so far on the [Results Map](#) (prior to this, you’ll see the results for the previous year). Looking at initial results, and discussing what they might mean is an excellent way to reflect on the design of a scientific investigation.



Finding out: So, let's talk surveys

- *What are we looking for?*
- *Where will we survey?*
- *What do we need?*

If you are unable to access a *Where? Where? Wedgie!* survey square during school time, never fear! You can still practise developing the important skills, knowledge and understandings that go into designing, developing and implementing survey investigations.

Sorting out: Why survey?

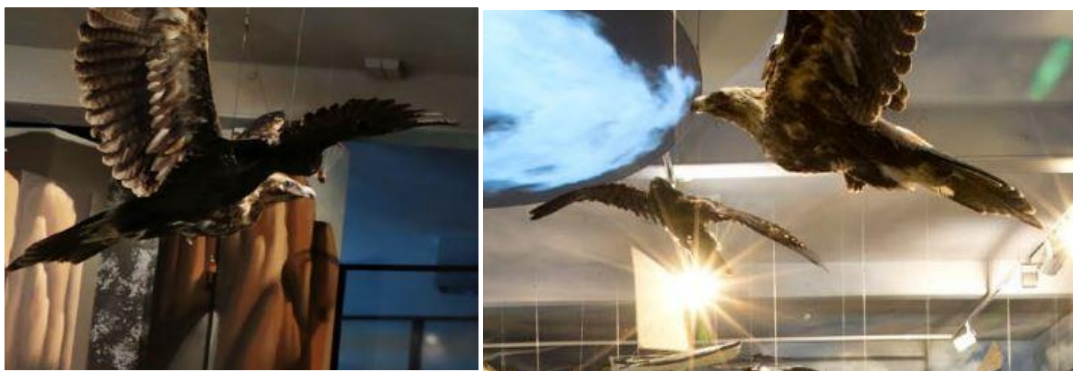
Surveys help us to:

- Notice if a surveyed species, overall ecosystem, or other feature is changing. Are our actions putting something at risk, or are we using the area sustainably? Look up, down and all around!
- If we've detected a problem: guide conservation. Are we doing enough of the right things to help a threatened species or ecosystem recover?
- Better understand how an ecosystem and its component species interact. What do they need? This can just be fascinating, and also can guide sustainable use of our area. Predict what will happen if we start changing conditions, e.g. for building, mountain bike tracks, mining, gardening. Declines in some species can affect the whole ecosystem considerably, as can changes in climate, fire frequency, water and air quality, or appearance of a new disease or introduced species.

Conducting a successful survey asks us to attune, practise and refine our skills in **observation, identification, data-recording, interpretation and storying.**

We can utilise our aural, visual and perceptual senses to help us locate, investigate and better understand information around us. Collectively, if we accurately record that information, it can be pieced together to help us develop long-term, bigger-picture, holistic and ecological understandings.

If you live somewhere that wedge-tailed eagles rarely visit, why do you think that is? What other places might you explore and search to find out more about them?



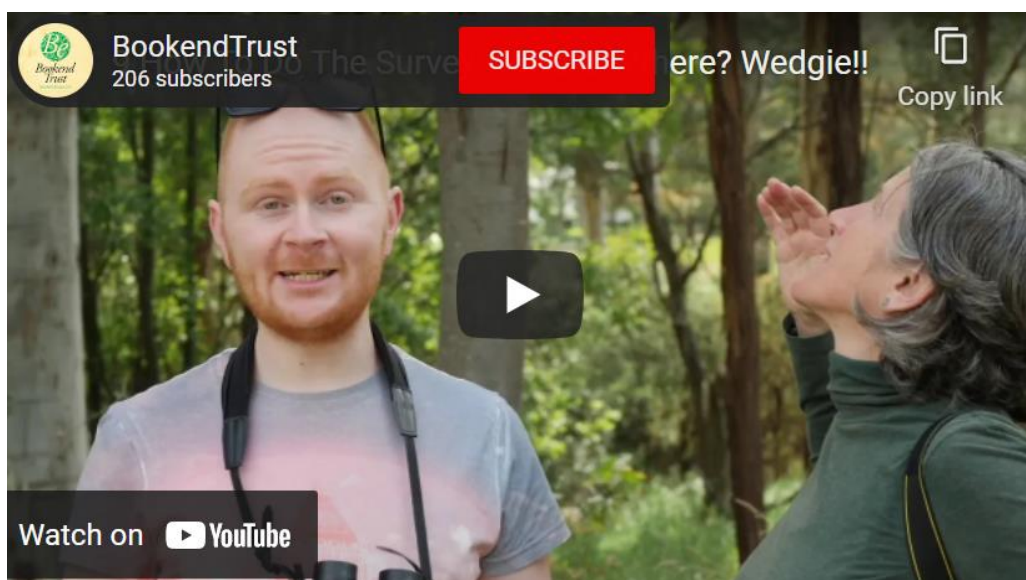
Excerpts from *mapiya lumi | around here*, Tasmanian Museum and Art Gallery (TMAG, 2022)



I spy a wedge-tailed eagle in the sky! *mapiya lumi* | *around here* is TMAG's long-term exhibition for children 0-7 years. 'mapiya lumi' means 'around here' in palawa kani, and reflects a focus in the exhibition on a sense of home and place that is unique to the islands that make up lutruwita/Tasmania.

Entry to *mapiya lumi* | *around here* is free to visit. However, if you would like to organise a class excursion to the museum, please ensure you [have carefully read the information](#) for how to best do this via the TMAG website.

Reflect and Act: What displays and wedge-tailed eagle specimens might you find in your local museum/cultural institution? Might you book an exhibition for your class to explore *mapiya lumi* and other displays at TMAG?



Going further: What do you want to find out?

Before you begin, come up with a question that your survey will answer, and a list of items that you will survey for. If you're not able to participate in the *Where? Where? Wedgie!* raptor survey itself, you can still develop the important skills associated with designing and implementing a survey. For example, there are plenty of interesting and exciting things to survey in your school ground, local neighbourhood and parks/reserves.

What happens:

- when we look for a different bird, or other species?

For example: is there an abundance of native species around your school, or are they outweighed by introduced/invasive species?



What might we discover if:

- we survey pollution levels, water availability, quality and usage, soil health in our school grounds, local neighbourhood/park?

Investigate

Develop a set of survey tools with your classroom out of the above questions explored with your class. Even if you aren't doing the *Where? Where? Wedgie!* surveys, you can get lots of useful ideas from the [Survey Instructions](#). You might like to prepare students who are participating over the weekend, perhaps by slightly adjusting the [datasheets](#) to include common species on your school grounds (how about blackbirds, sparrows or lapwings?). Alternatively, you could alter them a lot to design a quite different survey, or consider the wonderful [iNaturalist app](#).

Consider:

- How will you identify and measure what you've found? Will you record numbers (usually easiest to compare) or other formats e.g. visual (images), textual (notes).
- It's a good idea to have an agreed list of things to search for/observe and report back on (as in the hard-copy datasheets or digital app mentioned above).
- How do you feel about what you might find? Is there any risk that this could affect the way you collect your information, so that you don't have an accurate picture of the real situation?*
- Where will you assemble and store your information, so that everyone involved can find and understand it easily?
- How will you interpret (make sense of) your findings? How much information will you need to collect to be sure of your conclusions? (Scientists love to question and discuss alternative explanations for what they've found!).
- What other tools will you need? e.g. binoculars, notepad, pencils/pens, camera, smartphone, compass, map, drink bottle, sunscreen, snacks, flora/fauna ID book (such as fungi, eucalypt, [poo flip](#) etc). You can get some more ideas from the [Survey Instructions](#) checklist.

*People who don't see an eagle during their *Where? Where? Wedgie!* surveys often feel disappointed. However, wedgies are threatened species - they're not common. If each year we only collect information about where wedgies were seen, and none on where they weren't, we couldn't compare their numbers! So we call these people 'Zero Heroes'.

Organise Your investigation

Discuss how your class will conduct its survey investigation. Discuss and decide:

- Are you all going to work together, or are you going to break into groups and assign sections to each group?
- Whether to divide the responsibilities to have specific roles; individual groups assigned to different tasks, or stages of investigation that the entire class group move through together, with comparison at the end.



- Whether to have different groups for specific tasks such as collecting data (or different groups responsible for different data sets, i.e visual, textual, statistical).
- If you will have groups who will analyse data; generate strategies for making improvements; or reporting/sharing findings in ways that will interest others?
- What you will do with your final outputs?

Given the potential for generating, analysing and reporting on diverse data sets, you can create rich opportunities for assessment across the three dimensions of the Australian Curriculum.

Time Requirements

Develop a schedule for how you will conduct your survey investigation. Consider the following:

- Do you need specific school staff (custodial, maintenance, administrative) to be present during certain parts of the school-wide investigation? If so, contact them at least two weeks ahead of time to schedule this part of the investigation.
- Keep an eye on the weather in the lead up to your survey investigation and have some contingency plans in place (i.e different days, places to conduct your survey).
- Each survey will vary in the amount of time to complete, depending on the documentation tools available, equipment being used, and help from supporting school staff and or community partners you might collaborate with.
- Be sure to gather all of the necessary supplies and documents listed for your survey investigation ahead of time.

Reflect and Act: Leave no trace

When preparing to conduct your survey, it is important to plan with principles of '[leave no trace](#)' in mind.

The seven principle of 'leave no trace' are:

1. Plan ahead and prepare
2. Travelling and camping on firm ground
3. Dispose of waste correctly
4. Leave what you find
5. Minimise the impact of the campfire
6. Respect wildlife
7. Be considerate of hosts and other visitors

- [Leave No Trace - Seven Principles](#) (2022)

The Australian *Leave No Trace* network provides a range of free web resources and activities that teachers can use to help plan survey investigations with minimal impact in mind. Minimal Impact techniques are not only important to environmental protection and safeguarding wilderness. Adopting minimal impact survey techniques through the principles of 'leave no trace' contribute to our having a positive experience in the outdoors and minimising our environmental impact on the land.



Australian Curriculum v9.0 links:

Year 3-4:

Science (Strands: Science understanding, Science inquiry, Science as a human endeavour)

- (Sub-strand: Biological sciences) Compare characteristics of living and non-living things and examine the differences between the life cycles of plants and animals (AC9S3U01).
- (Sub-strand: Communicating) Write and create texts to communicate findings and ideas for identified purposes and audiences, using scientific vocabulary and digital tools as appropriate (AC9S3I06)
- (Sub-strand: Planning and conducting) Answer questions or test predictions, including identifying the elements of fair tests, and considering the safe use of materials and equipment (AC9S4I02).
- (Sub-strand: Use and influence of science) Consider how people use scientific explanations to meet a need or solve a problem (AC9S3H02)

HASS (Strand: Skills)

- (Sub-strand: Questioning and researching) Develop questions to guide investigations about people, events, places and issues (AC9HS3S01).
- (Sub-strand: Questioning and researching) Locate, collect and record information and data from a range of sources, including annotated timelines and maps (AC9HS3S02).
- (Sub-strand: Questioning and researching) Develop questions to guide investigations about people, events, places and issues (AC9HS3S01).
- (Sub-strand: Interpreting, analysing and evaluating) Interpret information and data displayed in different formats (AC9HS3S03).
- (Sub-strand: Communicating) Present descriptions and explanations, using ideas in sources and relevant subject-specific terms (AC9HS3S07).

Further Research/Resources:

Nature Trackers (2022). *iNaturalist App*. Retrieved from:

<https://naturetrackers.com.au/apps/#inaturalist>

NatureTrackers (2022). Survey resources, instructions, datasheets - all accessed on the *Take part* page: <https://naturetrackers.com.au/projects/where-where-wedgie/take-part/>

Leave No Trace Australia (2022). Stay on Track - Nature Play activity sheet. Retrieved from:

https://lnt.org.au/wp-content/uploads/2021/08/lnt-natureplay_activitysheet_1.pdf

Leave No Trace Australia (2022). Green Guide to Bushwalking. Retrieved from:

<https://www.lnt.org.au/resources/green-guide-to-bushwalking/>

Leave No Trace Australia (2022). Retrieved from: <https://www.lnt.org.au/>

Murdoch, K. (2022). Cycle of inquiry Oct 2020 slides. Retrieved from:

<https://static1.squarespace.com/static/55c7efeae4b0f5d2463be2d1/t/5f9f72f2aa6e763a1b0e8820/1604285398874/Cycle+of+inquiry+webinar+2020+slides.pdf>



Tasmanian Museum and Art Gallery. (n.d). *mapiya lumi | around here* exhibition. Retrieved from: https://www.tmag.tas.gov.au/whats_on/exhibitions/longterm/mapiya_lumi_around_here