Photo: Andrew Peacock

Birds of our Island:

BirdLife Australia's Kangaroo Island Education Program

An education toolkit for teachers

Contents

About this education program

This education program contains learning activity lesson plans and resources for teachers and educators, to deliver an education program focused on the Kangaroo Island endemic subspecies and other birds that have become species of concern following the 2019-20 wildfires. These species and subspecies make an excellent case study for addressing the science curriculum, including the biological sciences. The birds introduced in this program illustrate important scientific concepts including observable differences between species and subspecies, and the morphological (structural) features and adaptations that help them to survive in their environment.

Photo: Andrew Peacock

This program also addresses the reliance of living things on their environment, and the impacts of events such as the 2019-2020 wildfires on their growth and survival. This education program builds students' science inquiry skills by involving them in their own research, inviting them to communicate what they learn with others, and conducting a scientific bird survey at a shared community monitoring site to contribute important data to BirdLife's survey database, Birdata. It also introduces students to an understanding of the use and influence of science, and how science and conservation management can drive the recovery of species – and students are involved in this action!

This resource has been created by Birdlife Australia as part of a Landcare Led Bushfire Recovery project, which has been supported by the Australian Government's Bushfire Recovery Program for Wildlife and their Habitat.

About BirdLife Australia

BirdLife Australia is an independent, grassroots charity whose main objective is to conserve and protect Australia's native birds and their habitat. Recognized as a leading authority on the ecology and conservation of Australia's native birds, they invest in long-term threatened bird conservation programs, in partnership with other organisations and communities, bringing together research, education, on-ground management, advocacy and campaigning. Find out more at www.birdlife.org.au

Acknowledgement of Country

BirdLife Australia acknowledges the Traditional Owners of the country on which we live and work, and in particular, the Ngarrindjeri, Ramindjeri, Narrunga and Kaurna peoples and their ongoing connection to Kangaroo Island. We pay our respects to their Elders past and present.

Using the education program

This education program includes lesson plans for four learning activities. These activities are sequenced with the aim to build students' understanding of the content progressively throughout the unit. The activities are aimed at primary school students in year levels 3-6.

The resource is designed to allow flexibility for teachers to adapt and deliver the activities as required in their classroom and school. The three learning activities can be taught over three one-hour sessions, or for a more in-depth program, over a whole school term or other period, as desired to meet classroom and school needs. Lessons can be modified or excluded.

The lesson plan for each learning activity contains a learning goal, summary of the activity, and teacher preparation involved. The description of the learning activity is broken into three parts: Tune in; Main activity; and Reflection.

Curriculum links for each learning activity are included in this document. Curriculum links listed are limited to biological sciences, however teachers may wish to address other areas of the curriculum through lessons.

Lessons have resources provided including worksheets and information cards. Teachers may choose to use these or not, as appropriate in their classrooms. For example, as an alternative to printing templates and information cards, students can complete these activities in existing workbooks, and information cards can be displayed on screens (interactive whiteboards, classroom screens, or student devices) depending on school resources.

Photo: Caroline Paterson

Why has BirdLife created this education program?

Kangaroo Island is one of Australia's Key Biodiversity Areas, and a place of global significance for the conservation of birds and other species. Over 265 bird species have been recorded on the Island. It is home to many threatened bird species, and subspecies found nowhere else.

The 2019-20 wildfires were devastating for the Kangaroo Island community, with two lives lost and ninety homes destroyed. Farms, businesses, infrastructure, conservation areas, plantations and livelihoods were impacted. Wildlife populations and livestock were decimated, habitats and pastures destroyed. The trauma of this disaster will be present in the community for decades.

Over 200,000 hectares, almost half of the island's land area, was burnt. With the fires located primarily on the west end of the island, where large areas of high-quality habitat for native wildlife was concentrated, the impact on Kangaroo Island's wildlife was catastrophic and may never be known. In fact, there was surprisingly little known about the population or

distribution of many of Kangaroo Islands bird species, and there are large gaps in both data and knowledge.

BirdLife is committed to raising awareness of the importance of protecting fire-affected birds and engaging the community in important data collection to monitor bird populations and to take action to conserve these species well into the future. It is hoped that this education program will empower students and educators to contribute to the recovery of Kangaroo Island through participating in conservation action.

Students and educators using the program will develop a broader understanding of the natural heritage of the unique place they call home. Through learning about the special birds they share their Island with, BirdLife hopes students and educators will grow their appreciation of, and connection with these birds and their environment and be inspired to help protect them.

Endemic subspecies and species of concern


Photo: Nikki Redman

Kangaroo Island is home to 16 subspecies of birds found nowhere else in the world, making them endemic to the island. These subspecies have been isolated from their mainland cousins during the almost ten thousand years that the island separated from the mainland and have adapted to the unique environment. They may look similar but have slight differences in physical features such as plumage, size, features and even their calls. For example, the KI Crimson Rosella is slightly bigger with bolder colours, and the KI Purple-gaped Honeyeater is larger and darker. The KI New Holland Honeyeater has a smaller beak and wings, while the KI White-browed (or Spotted) Scrubwren has streaking on its breast. Kangaroo Island's only endemic bird species, the Dwarf Kangaroo Island Emu became extinct in 1832.

In the 2019-20 wildfires, 15 of the endemic bird subspecies of Kangaroo Island lost 30%-80% of their habitat. As a result, the KI Glossy Black-Cockatoo, KI Western Whipbird, and KI Southern Emu-wren are all national priorities for recovery on Kangaroo Island. There is also concern for the KI Purple-Gaped Honeyeater and KI Shy Heathwren. Other species of concern include the Beautiful Firetail, Bassian Thrush, KI Purple-gaped Honeyeater and Yellow-tailed Black-Cockatoo. These birds are also found on South Australia’s mainland, but the Kangaroo Island populations and their critical habitats have been heavily impacted by the fires. Previously considered an endemic species, genetic testing has shown the KI Southern Boobook is part of the Southern Australian Boobook population. Due to known decline of the species on the mainland, the extensive habitat loss and other threats, it is now also a Species of Concern on Kangaroo Island. Monitoring these species is critical to ensure their survival.

Birds of our Island: Learning activity lesson plans

Activity 1: Become an expert and communicate

Learning activity lesson plan	
Learning goal	• Learn about birds identified as priority species or species or concern, for bushfire recovery. • Learn about Kangaroo Island's endemic subspecies.
Summary	Students research Kangaroo Island bird species, becoming experts on one or more species. Students then communicate their research to the rest of the class so that all students know about each bird.
Teacher preparation	• Provide resources as listed for students. *Kangaroo Island Bird Identification: Helping to monitor the impacts of fire* (booklet), BirdLife Australia, can be sourced from BirdLife Australia. • Be mindful that the wildfires were devastating for the community, and traumatic for many, and may still be challenging for some students to talk about. Ensure to support students that may find discussion of the fires challenging.
Tune in	Introduce the students to the Birds of our Island unit. Explain that the class will be learning about some special birds of Kangaroo Island, including 16 endemic subspecies, and species of concern and priority species following the 2019-20 wildfires. Acknowledge that the wildfires were devastating for the community, and traumatic for many, and may still be challenging to talk about. If appropriate, facilitate classroom discussion for students to share their experiences of the 2019-20 wildfires and existing knowledge about birds and habitats. This should be conducted in a sensitive way, ensuring to support students that may find discussion of the fires challenging. If desired, record the discussion in a display or document that can be added to and reviewed to measure learning over the course of learning. Introduce the concept of subspecies and species of concern, and the birds that students will be learning about using the '*Birds of our Island: Kangaroo Island endemic subspecies and species of concern information cards'*.
Main lesson	Individually or in small groups, students research one or more of the Kangaroo Island bird species listed in the *Birds of our Island: Kangaroo Island endemic subspecies and species of concern information cards*, as well as other resources available. Either have students choose species or allocate species, so that all the species and subspecies listed in the resources will be researched by students.

	Students record their research findings so they can communicate their findings to the rest of the class and/or other audiences. **Flexible delivery** Depending on the timeframe for this learning, teachers can deliver this activity in a single 50-minute session or multiple sessions over a period of days or weeks. One session: Students complete a simple written or spoken presentation of information about the bird species. Multiple sessions: If more than one session is available, students can research further and make a more detailed report, an artistic representation, a poster, cartoon, diorama, presentation or similar, 'home wanted advertisement', or communicate information about their bird species in another way that they choose. This extended research may include students investigating bird's adaptations to their habitats (e.g., colour, beak shape, body shape, feet and wings), and cultural names or stories about this bird from First Nations people.
Reflection	Students communicate their research to the rest of the class and/or other audiences so that all students know about each bird. The method of communication will depend on the way students have presented their work. They might do a presentation, or if a more artistic approach is taken, displaying student work might work be suitable for communication and a 'Gallery Walk', for which students move around the classroom looking at other students' work.
Resources	• Birds of our Island: Kangaroo Island endemic subspecies and species of concern information cards. • Kangaroo Island Bird Identification: Helping to monitor the impacts of fire (booklet), BirdLife Australia.

Photo: Marianne Wakelin

Activity 2: Musical habitats

Learning activity lesson plan	
Learning goal	• Learn about the threats facing Kangaroo Island bird species. • Learn that threats interact and are cumulative.
Summary	Students participate in a game of 'musical habitats' that illustrates the impact of threats on the birds of Kangaroo Island.
Teacher preparation	• In a space that allows for safe movement of students around obstacles, arrange enough chairs, hoops or similar, for all students in the class. These should be placed 1-2 meters from each other to allow students to move freely around them during the game. • Be mindful that the wildfires were devastating for the community, and traumatic for many, and may still be challenging for some students to talk about. Ensure to support students that may find discussion of the fires challenging.
Tune in	Explain that wildlife is faced with many threats, including the Kangaroo Island bird species and subspecies the students have been learning about. Facilitate a classroom discussion about students' existing knowledge of threats facing birds on Kangaroo Island. Describe the rules of the game (a game similar to musical chairs) that they will play to illustrate the threats facing Kangaroo Island's birds: • Each student represents a Kangaroo Island bird species. Students may represent the bird that they researched for the previous lesson. • Each chair represents habitat available for these species. The teacher guides students to recall what might be present in these habitats. • Each chair can only support one Kangaroo Island bird. • The teacher plays music and while the music is playing, students role-play the Kangaroo Island birds moving around the habitat. • When the teacher stops the music, students must sit on a chair. • The teacher will remove one or more chairs from the game before stopping the music on each round of the game. • When the music stops, the students who don't have a chair anymore will be out of the game. • The teacher provides threat scenarios using the Threats to Kangaroo Island birds cards, e.g., clearing native vegetation has led to the loss of habitat. This explains the removal of each chair or habitat and the elimination of students representing birds.
Main lesson	Facilitate playing of the game.

	Optional additions Challenge: To make this more of a challenge, chairs or similar can represent particular habitats (i.e., woodland, forest, coastal vegetation) that each bird the students have researched occupy. Students that represent each bird species must find chairs that represent the habitat that their bird species is found in. If chairs identified as a student's bird's habitat are removed from the game, that student is out of the game also. Solutions: This game can be built on by adding chairs back into the game to illustrate the impact of reducing threats or taking conservation action to increase habitat. This can be done in this lesson, acting as a brainstorm for students to think of ways to protect birds. Alternatively, it can be done in the following lesson when students learn about the conservation actions that can be taken to reduce these threats and increase habitat for Kangaroo Island's birds and wildlife.
Reflection	Following the game, facilitate small group or whole class discussion about the game and ideas it generates. Ask students about how they thought the game showed the impact of multiple threats to birds. Discuss the concept that threats can interact and be cumulative. Either in small groups or as a class, make a list of the threats introduced. Acknowledge that these threats can be disheartening. Explain that in the next lesson students will be learning about actions being taken to address the threats facing Kangaroo Island's birds, and then they will develop their own action plans to help birds. Reflect on the students' knowledge of positive actions being undertaken for birds and other wildlife and initial thoughts about potential actions they could take. **Flexible delivery** Depending on the timeframe for this learning, this activity can be delivered in a single 50-minute session or multiple sessions over a period of days or weeks. One session: Reflection is a brief discussion as described above. Multiple sessions: If more than one session is available, students can research threats and then create their own board game illustrating threats and even showing how threats interact and are cumulative. Students can also include solutions to illustrate the impacts of conservation action, as described in the main lesson above.
Resources	• Space that allows for safe student movement • Chairs, hoops or similar • Threats to Kangaroo Island birds cards • Music

Activity 3: Expert workshop and Conservation Plan

Learning activity lesson plan	
Learning goal	• Learn about the ways scientific methods and knowledge is used to find solutions to problems. • Learn to use own research and knowledge to create an action plan to address threats facing Kangaroo Island's birds.
Summary	Students create a 'Conservation Plan' to address the threats to Kangaroo Island birds and hold an expert workshop to discuss their plans. These can remain as individual or group action plans or compiled or taken to a vote to decide on a whole class action plan. The action or actions are then conducted.
Teacher preparation	• Be mindful that the wildfires were devastating for the community, and traumatic for many, and may still be challenging for some students to talk about. Ensure to support students that may find discussion of the fires challenging. • Make resources provided with the education program available for students to use for the activities. • Ensure school leadership support and source resources as required to complete chosen student action plans.
Tune in	Read 'Coming together to save our birds' included in the education program resources or provide the article for students to read. Facilitate a classroom discussion about the concepts introduced in the article. Discussion prompts include: • Why was a Bushfire Response Plan needed? • What is the role of experts in conservation and disaster events? • Why are surveys important? • Why should people participate in monitoring surveys? • What is a Conservation Action Plan? • What is the role of the community including local landholders? • What is the role of Government (Local, State and Federal)
Main lesson	Explain to students that they are now all experts on Kangaroo Island's endemic subspecies and species of concern and the threats facing them. They will create a 'Conservation Plan' to address the threats they learnt about in the previous lesson and then come together for an expert workshop to discuss their plans and decide what action to take. Individually or in small groups, students complete the Conservation Action Plan template. Note: One impactful action that you and your students can take is to join BirdLife Australia in spring and autumn surveys at fixed sites using the Birdata app to record and upload

	valuable data directly to Birdlife Australia. Please see Activity 4: Become a citizen scientist with BirdLife. Contact BirdLife to learn more. Other actions include: • Planting locally native plants to increase habitat around the school or in public places (with approval) • Creating awareness raising posters or artwork about Kangaroo Island's special birds for display at local shows, galleries or community events to educate others • Producing their own bird watching guide • Inviting the community to join students for a bird survey • Running a workshop • Design a sign or mural • Planning campaigns to encourage bird-friendly activities or joining volunteer groups that deliver conservation work
Reflection	Hold the class expert workshop where students discuss their plans and decide what action to take. Individually or in their groups, students present their Conservation Action Plan to the class. Students then discuss the different Conservation Action Plans and make decisions about the actions to take. Depending on the outcome of discussions, and on time, resources and appropriate actions, students can conduct individual or group action plans or the actions can be compiled or taken to a vote to decide on a whole class action plan. Students conduct their action plan or plans. **Flexible delivery** Depending on the timeframe for this learning, this activity can be delivered in a single 50-minute session or multiple sessions over a period of days or weeks. <u>One session:</u> Students carry out a simple action plan, such as creating an awareness raising poster or presentation. Or in a future session, join BirdLife for a fixed site survey. Please see Activity 4: Become a citizen scientist with BirdLife and contact BirdLife to learn more. <u>Multiple sessions:</u> If more than one session is available, students carry out a more involved action plan (where they are appropriate and achievable). And in a future session, join BirdLife for a fixed site survey. Please see Activity 4: Become a citizen scientist with BirdLife and contact BirdLife to learn more.
Resources	• 'Coming together to save our birds' article or Australian BirdLife Magazine June 2020 Safe Haven article if preferred. • Conservation Action Plan template for students to complete. • Resources as required to complete chosen student action plans.

Activity 4: Become a citizen scientist with BirdLife Australia

Learning activity lesson plan	
Learning goal	• Learn to conduct a standardised bird survey using appropriate scientific methods. • Learn to observe, measure and record data with accuracy using digital technologies as appropriate.
Summary	Schools are invited to participate in spring and autumn surveys at fixed sites across Kangaroo Island using BirdLife Australia's Birdata app to record and upload valuable data about birds directly to Birdlife.
Teacher preparation	• Contact BirdLife Australia for details on how to get involved. • Download BirdLife Australia's Birdata app and become familiar with its use. • Information on the shared sites, and instructions on how to survey them are available on the Birdata mobile app, along with a map and information about risks or access. Approved Kangaroo Island Bushfire Recovery (KIBR) surveys will be loaded onto the Birdata app and website in Autumn 2022. Schools may wish to select a KIBR site and monitor it over time, or have a private survey set up if there is appropriate habitat (2-hectare area) on school grounds. Contact BirdLife Australia for more information.
Tune in	Re-read article: 'Coming together to save our birds' article or Australian BirdLife Magazine June 2020 Safe Haven article if preferred. Follow by facilitating a discussion about the importance of bird surveys. Discussion prompts include: • Why were bird surveys one of the first actions taken after the wildfires? • What did those surveys achieve? • Why was the knowledge from the surveys so important? • Why is ongoing monitoring (continued surveys over time) important? Explain that an action that students can take is to join BirdLife Australia in spring and autumn surveys at fixed sites using the Birdata app to record and upload valuable data directly to Birdlife Australia. The sites have been chosen to allow members of the community to get involved in bird surveys to help collect data on species numbers, locations and movements over time, particularly our endemic sub-species and species of concern. BirdLife needs help from students and teachers to record and collect data by participating in the community monitoring surveys. This will contribute to understanding the current populations (species and

	numbers) of birds, distribution (where they are) and any changes to this over time, and help with conservation activities, as they learned in the previous lesson.
Main lesson	In small groups or as a class, students discuss and make a plan to conduct a bird survey. Guiding questions for this activity are: • What is a bird survey? • What do students want to achieve by conducting a bird survey? • What questions do students want to answer by conducting a bird survey? Students use these questions to make a plan to conduct a survey. Guiding questions for this activity are: • How will their survey answer their question/s? • What needs to be measured? • How will they observe, measure and record data accurately? Discuss the students' responses to the above questions and their survey plans. If necessary, guide students to the understanding that surveys aim to find out what the current populations (species and numbers) of birds are at their site, distribution (where they are) and any changes to this over time. Discuss if their survey plans will achieve these goals. Assist students to adapt their survey plans to meet those required for the BirdLife's surveys using Birdata if required. Discuss the type of habitat found at the survey site. Ask students to make predictions about what birds might be observed based on the type of habitat at the site. Participate in spring and autumn surveys with BirdLife Australia at fixed sites using the Birdata app to record and upload valuable data directly to Birdlife Australia. Please contact BirdLife to learn more. Note: A single device can be used to enter the survey into Birdata e.g., the teacher can use an iPad and their login details. This can allow for group discussion and confirmation of identification before the survey is submitted. Alternatively, to allow students to record individually or in small groups use a data sheet provided by BirdLife to capture current Birdata fields. Students could also develop their own data sheet to capture all the details required for a 2-hectare, 20-minute survey.
Reflection	On returning to school facilitate a discussion about the students' experience participating in the community monitoring surveys at the shared site. Discuss the bird species recorded. Were students' predictions about what birds they might observe based on the type of habitat at the site correct? What observations did students make about the birds, habitat, or the survey itself? Was the survey conducted a fair test, and what could students do differently to improve the survey?

	Ask students to reflect on their learning from the Birds of our Island activities. You can use the discussion from the first activity if it was recorded to help with this reflection. Students can also reflect on any other action they took to help Kangaroo Island birds and consider how they feel having completed it. **Flexible delivery** Depending on the timeframe for this learning, this activity can be delivered in a single 50-minute session or multiple sessions over a period of days or weeks. One session: Reflection is a brief discussion as described above. Multiple sessions: If more than one session is available, students can create a written piece or presentation documenting their experience of Birds of our Island. This could be a video, article, or using any medium available to communicate their story.
Resources	• 'Coming together to save our birds' article or Australian BirdLife Magazine June 2020 Safe Haven article if preferred. • Contact BirdLife Australia for details on how to get involved in bird surveys. • BirdLife Australia's Birdata app or access to the Birdata web portal (website) on return to school. Search your app store or visit: https://birdata.birdlife.org.au/ • Printed survey sheets from the Birdata app (or printed simple recording table) or device for students to record survey data. • Kangaroo Island Bird Identification: Helping to monitor the impacts of fire (booklet) or a bird identification field guide. • Birdata can be loaded onto a single campus iPad so that only one data set is recorded. The class can check the data at the end of the session following identification and comparison.

Photo: Tom Hunt

Activity 5: Exploring our data

Learning activity lesson plan	
Learning goal	• Learn to use tables and graphs to analyse the bird survey data they have collected. • Learn to observe, measure and record data with accuracy using digital technologies as appropriate.
Summary	Students explore the bird survey data they have collected using the Birdata web portal, Excel, graphs, and tables, just as scientists analyse the data they collect in their research.
Teacher preparation	• Read 'Teacher Guidelines for Excel'. • If using Birdata summaries, login to Birdata website and select the 'My Data' tab. View your surveys by selecting them from the list below the map and scroll down to see your 'Sightings' list or use the 'Filter' on the left to select the appropriate dates and export your data to 'CSV Format (Excel compatible)'. Note: Depending on the technology available and student experience, this activity can be completed in different ways, requiring different preparation, see below. Further instructions for each are provided in 'Teacher Guidelines for Excel'. **Students complete activity using Excel:** • Prepare data from the bird surveys, either through survey summaries in Birdata, or creating survey tables in Excel. **Teacher completes activity using Excel and students recreate graphs on paper:** • Prepare data, either through survey summaries in Birdata, or creating survey tables in Excel. • Complete the Main Activity prior to the lesson so students can view the tables and charts, or complete on class screen while students view.
Tune in	Show students the data from the bird surveys they have completed, either in Birdata in survey summaries, or the survey tables in Excel you have prepared from the bird surveys. Explain that students will investigate the data they have collected during bird surveys by creating tables and graphs. Graphs and charts are used in science because they can visually represent large amounts of information and make it easier to understand, analyse and compare.
Main lesson	Students or teacher use Excel to create: 1. A presence/absence table to look at which species are most commonly/least commonly seen at the site 2. Abundance table to look at which species have the most individuals/fewest individuals

3. Charts to show the information in different ways.

If the teacher completes the main activity using Excel, assist students to draw the graphs on the 'Graphing Our Data' worksheet, based on those constructed by the teacher in Excel.

1. Presence/absence table:

Construct a table in Excel that lists the presence or absence of each bird species seen during each survey (e.g., below).

Species	Survey 1	Survey 2	Survey 3	Survey 4
Australian Magpie	Y	Y	Y	Y
Little Raven	Y	N	Y	Y
Superb Fairy-wren	N	N	N	Y

Calculate the number of surveys that students observed each species and the reporting rate for each species. The reporting rate is the percentage of times that each species was seen and provides a standard method for comparing how common each species was. Add this information to the class table (e.g., below).

Species	Survey 1	Survey 2	Survey 3	Survey 4	No. surveys seen	% reporting rate
Australian Magpie	Y	Y	Y	Y	4/4	100%
Little Raven	Y	N	Y	Y	3/4	75%
Superb Fairy-wren	N	N	N	Y	1/4	25%

2. Abundance table:

Construct a table that shows how many of each species (the abundance) were recorded in each survey (e.g., below). Calculate the total and average abundance.

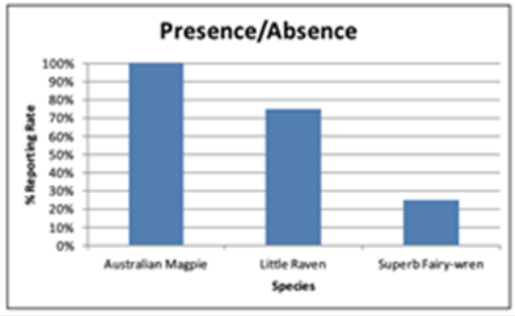
Species	Survey 1	Survey 2	Survey 3	Survey 4	Total abundance	Average abundance
Australian Magpie	2	4	4	3	13	3.25
Little Raven	5	0	7	2	14	3.5
Superb Fairy-wren	0	0	0	4	4	1

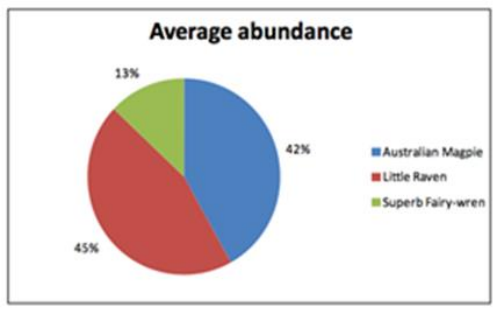
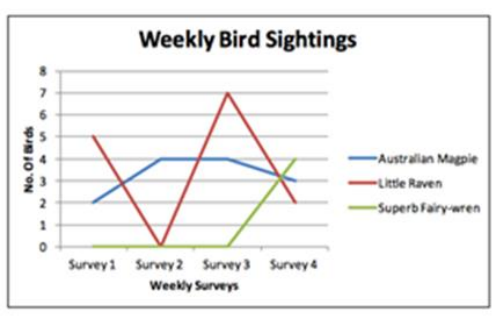
3. Creating graphs using Excel tables:

Convert the tables into graphs by using the Excel 'Charts' option.

Bar or column graph

Construct a bar or column graph of the presence/absence data. Do this by selecting the relevant columns of the table, inserting a chart using the 'Charts' or 'Insert' tab and choosing 'Column' (e.g., below). Using the 'Layout' tab, edit the titles and axes of the chart.



	Pie chart and line graph Graph the abundance data using a pie chart and line graph. Create a pie chart illustrating the average abundance of birds surveyed, and a line graph illustrating the changes in the number of sightings over time. Select the relevant columns of the table, insert a chart using the 'Charts' or 'Insert' tab and choose 'Pie' and 'Line'. Using the 'Layout' tab, edit the titles and labels of the chart and graph (e.g., below).  
Reflection	Discuss the role of tables and graphs in presenting and understanding information. Guiding questions include: • Did the tables or graphs help you to see any additional information? • Did the tables or graphs make the information easier or harder to understand?
Resources	• Teacher Guidelines for Excel • Prepared data from all the bird surveys completed from Birdata summaries or teacher created table – see Teacher Preparation • Devices for students and access to Excel if students are completing the activity using Excel • 'Exploring our Data' worksheet for students if the teacher is completing the Excel component of the activity and students recreating the graphs on paper.

Teacher Guidelines for Excel

Student or teacher completion of Excel activity

Lesson 5 involves the exploration of bird survey data through creating tables and graphs, using Excel. Depending on the technology available for students to use and student experience with Microsoft Excel (or similar), this activity can be completed in different ways, requiring different preparation, see below. The options for completing the activity are:

1. By students, using Excel, or

2. By the teacher using Excel, with students recreating the graphs on paper.

Teacher preparation

1. Teacher preparation where students complete the activity using Excel:

- Prepare your data from all the bird surveys for students to view, either through survey summaries in Birdata, or creating survey tables in Excel (see instructions below).

2. Teacher preparation where the teacher completes the activity using Excel and students recreate the graphs on paper:

- Prepare your data from all the bird surveys for students to view, either through survey summaries in Birdata, or creating survey tables in Excel (see instructions below).
- Complete the Main Activity prior to the lesson so students can view the tables and charts or become familiar with instructions below to complete on class screen while students view.

Preparing data

Accessing survey data from Birdata:

If you are using Birdata to prepare your data from all the bird surveys for students to view for Lesson 5, go to https://birdata.birdlife.org.au/ and login to Birdata on the web portal. Select the 'My Data' tab. View your surveys by:

- Selecting each survey from the list below the map and scrolling down to see your 'Sightings' list, which includes pictures of each of the bird species you saw on your survey. This is a good option for younger students. Or,
- Using the 'Filter' on the left to select the appropriate dates and click on the 'Export' button and choose to export in 'CSV Format (Excel compatible)'. If exporting data using the filter, you will need to delete the extra columns.

Creating your own survey summaries in Excel:

If you are using Excel to prepare your data from all the bird surveys for students to view for Lesson 5, you will need to create the table and input your data either from Birdata or your own records. Your table may look something like this:

Site name:	Site 1	Survey method:		Point Count	
Species	Date/Time 3/3 - 11am	Date/Time 10/3 - 11am	Date/Time 17/3 - 11am	Date/Time 24/3 - 11am	Total Birds
Australian Magpie	1	0	1	2	7
Little Raven	0	1	0	1	2
Superb Fairy-wren	1	2	3	1	10

If students are not using Excel

If the teacher is completing the main activity using Excel, rather than the students, the teacher should complete the main activity prior to the lesson or complete the activity on the class screen while students view. Alternatively, teachers may choose to use pen and paper or an alternative, rather than Excel to complete this activity. Regardless, if students will not be using Excel, teachers should assist them to draw the graphs on the 'Exploring Our Data' worksheet, based on those drawn or constructed by the teacher in Excel.

Photo: Peter Martin

Activity links to the curriculum

Curriculum links for each learning activity are included below. Curriculum links listed are limited to biological sciences, however teachers may wish to address other areas of the curriculum through lessons.

Science curriculum links: Year Levels 3-4

Year 3 Content Descriptions	Activity Number	Year 4 Content Descriptions	Activity Number
Science Understanding		**Science Understanding**	
Biological sciences		Biological sciences	
Living things can be grouped on the basis of observable features and can be distinguished from non-living things	1	Living things have life cycles	1
		Living things depend on each other and the environment to survive	1, 2, 3
Science as a Human Endeavour		**Science as a Human Endeavour**	
Nature and development of science		Nature and development of science	
Science involves making predictions and describing patterns and relationships	2, 3	Science involves making predictions and describing patterns and relationships	2, 3
Use and influence of science		Use and influence of science	
Science knowledge helps people to understand the effect of their actions	2, 3	Science knowledge helps people to understand the effect of their actions	2, 3
Science Inquiry Skills		**Science Inquiry Skills**	
Questioning and predicting		Questioning and predicting	
With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge	4	With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge	4
Planning and conducting		Planning and conducting	
With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment	4	With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment	4
Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately	4	Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately	4

Processing and analysing data and information		Processing and analysing data and information	
Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends	5	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends	5
Compare results with predictions, suggesting possible reasons for findings	4	Compare results with predictions, suggesting possible reasons for findings	4
Evaluating		Evaluating	
Reflect on investigations, including whether a test was fair or not	4	Reflect on investigations, including whether a test was fair or not	4
Communicating		Communicating	
Represent and communicate observations, ideas and findings using formal and informal representations	1, 2 (with multiple sessions), 3	Represent and communicate observations, ideas and findings using formal and informal representations	1, 2 (with multiple sessions), 3

Science curriculum links: Year Levels 5-6

Year 5 Content Descriptions	**Activity Number**	**Year 6 Content Descriptions**	**Activity Number**
Science Understanding		**Science Understanding**	
Biological sciences		Biological sciences	
Living things have structural features and adaptations that help them to survive in their environment	1,	The growth and survival of living things are affected by physical conditions of their environment	1, 2, 3
Science as a Human Endeavour		**Science as a Human Endeavour**	
Nature and development of science		Nature and development of science	
Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions	2, 3	Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions	2, 3
Use and influence of science		Use and influence of science	
Scientific knowledge is used to solve problems and inform personal and community decisions	2, 3	Scientific knowledge is used to solve problems and inform personal and community decisions	2, 3
Science Inquiry Skills		**Science Inquiry Skills**	
Questioning and predicting		Questioning and predicting	
With guidance, pose clarifying questions and make predictions about scientific investigations	4	With guidance, pose clarifying questions and make predictions about scientific investigations	4

Planning and conducting		Planning and conducting	
Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks	4	Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks	4
Decide variables to be changed and measured in fair tests, and observe measure and record data with accuracy using digital technologies as appropriate	4	Decide variables to be changed and measured in fair tests, and observe measure and record data with accuracy using digital technologies as appropriate	4
Processing and analysing data and information		Processing and analysing data and information	
Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate	5	Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate	5
Compare data with predictions and use as evidence in developing explanations	4	Compare data with predictions and use as evidence in developing explanations	4
Evaluating		Evaluating	
Reflect on and suggest improvements to scientific investigations	4	Reflect on and suggest improvements to scientific investigations	4
Communicating		Communicating	
Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts	1, 2 (with multiple sessions), 3	Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts	1, 2 (with multiple sessions), 3

Photo: Darcy Whittaker

Further resources and reading

Field guides and posters

A comprehensive local field guide to the birds of Kangaroo Island: *Birds of Kangaroo Island: A Photographic Field Guide by Chris Baxter (ATP, Hindmarsh, 2015)*

A great resource compiled by BirdLife Australia with all the latest information on the birds of Kangaroo Island. *Kangaroo Island Bird Identification: Helping to monitor the impacts of Fire by BirdLife Australia* (BirdLife Australia, 2022). Download a copy here: https://birdlife.org.au/documents/BFKI-Kangaroo_Is_Bird_Identification_booklet-DL.pdf or contact BirdLife Australia for a hard copy.

BirdLife's *Common Native Birds of Kangaroo Island* A4 poster, downloadable here: https://birdlife.org.au/documents/KI-Common_Birds_of_Kangaroo_Island-A4_poster.pdf

Where to find birds on Kangaroo Island

A great summary of the best places to see some of Kangaroo Island's bird species, shared by locals:https://birdlife.org.au/locations/birdlife-kangaroo-island/where-to-find-birds-on-kangaroo-island

BirdLife's Kangaroo Island projects

Keep up to date on the Kangaroo Island Bushfire Recovery Project: https://birdlife.org.au/projects/bushfire-recovery/kangaroo-island-birds-bf

Read BirdLife's report on Kangaroo Island Rapid Bird Assessments for more information about bird surveys on Kangaroo Island: https://www.birdlife.org.au/documents/PEX-KI_Rapid_Bird_Assessments_Mar2020.pdf

BirdLife Australia's Key Biodiversity Area Program

See BirdLife Australia's Key Biodiversity Area Program for more information on Bushfire Recovery where it matters most: https://birdlife.org.au/projects/KBA

Surveying Kangaroo Island with Tom Hunt

Join ecologist Tom Hunt on a tour of Kangaroo Island and its birdlife – through habitat that was burnt in the Black Summer wildfires. Watch Tom Hunt show just how and why we do standardised bird surveys – and what birds he spots along the way! https://m.facebook.com/watch/?v=1423902291317564&_rdr

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