

Shorebirds Competition Supporting Unit of Work Years 5-6

NSW Geography – Factors That Shape Places

This unit of work has been prepared as a suggested unit to be used to develop student learning and understanding of threatened shorebirds in Australia and support participation in the ANSTO Shorebirds Competition (student entries for the competition could be completed as a separate Visual Arts unit). In this unit, students will study migratory shorebirds to support their investigation of how people change and influence the natural environment in Australia. In doing so, students will examine the real and complex threats to this type of bird and consider ways in which they can contribute to their survival.

The unit is based on one 50 minute geography lesson per week, however activities can be adapted to suit individual class requirements.

Additional information and resources for teacher have been included at the end of the lesson outlines.

Outcomes + Geographical Concepts, Inquiry Skills and Tools	Inquiry Questions	Content
<p>A student:</p> <ul style="list-style-type: none"> › describes the diverse features and characteristics of places and environments GE3-1 › explains interactions and connections between people, places and environments GE3-2 › compares and contrasts influences on the management of places and environments GE3-3 › acquires, processes and communicates geographical information using geographical tools for inquiry GE3-4 <hr/> <p><i>Geographical Concepts</i></p> <ul style="list-style-type: none"> • Space • Environment <p><i>Geographical Inquiry Skills</i></p> <ul style="list-style-type: none"> • Acquiring geographical information • Processing geographical information <p><i>Geographical Tools</i></p> <ul style="list-style-type: none"> • Maps • Spatial Technologies 	<p>How do people and environments influence one another?</p> <p>How do people influence places and the management of spaces within them?</p>	<p><u>Factors that change environments:</u></p> <p><i>Students:</i></p> <ul style="list-style-type: none"> • investigate the ways people change the natural environment in Australia and another country, for example: (ACHGK026, ACHGK027) <ul style="list-style-type: none"> - examination of how people, including Aboriginal and Torres Strait Islander Peoples, have influenced each country’s environmental characteristics eg land clearing <p><u>Humans shape places:</u></p> <p><i>Students:</i></p> <ul style="list-style-type: none"> • investigate how people influence places, for example: (ACHGK029) <ul style="list-style-type: none"> - description of who organises and manages places eg local and state governments - identification of ways people influence places and contribute to sustainability eg local sustainability initiatives

Cross-curriculum Priorities and General Capabilities		
<ul style="list-style-type: none"> Aboriginal and Torres Strait Islander histories and culture Sustainability Critical and creative thinking Civics and citizenship Literacy Ethical understanding 		
Suggested Learning and Teaching Sequence		
Lesson	Activity	Resources
1	<p><u>Introduction to Migratory Shorebirds</u></p> <p>What is migration? What animals can you think of that migrate? What do you know about birds that migrate? Migration comes with a lot of risks (eg use of energy, predators, and weather conditions). What are the upsides for these animals? We are going to learn about some amazing birds that can fly over 11,000km straight! Some of these birds travel the distance from Earth to the moon and back in their lifetimes. One shorebird, the bar-tailed godwit, holds the world record for the longest non-stop flight ever recorded for any bird species!</p> <p><u>Pack your Bags activity</u></p> <p>In groups, make a list of everything you/your family do to prepare for a long trip away somewhere. Students share responses and these are noted on table on the board. As a class, discuss similar ways migratory birds might prepare before a long flight (ie – pack your bag with correct clothing = change in feathers; pack food = feed and store extra weight; pack a map = use instinctive navigational route [East Asian-Australasian Flyway]; get your family together = migratory birds travel together at the same time and take turns leading the flock; sleep well the night before= rest before flight). Complete Activity Sheet 1 with students, labelling the essential things a shorebird does to help prepare for a long flight.</p>	<p>See Teacher Resources for background reading</p> <p>Activity Sheet 1</p>
2	<p>First reading: <i>Circle</i> by Jeannie Baker. Read text to class, giving students time to view the illustrations. In small groups, have students re-tell the story of the godwits life to each other. Explain the migration route of the godwits is called the East Asian-Australasian Flyway. Using internet research or materials provided by the teacher, students create a migration map to illustrate this route. Annotate the map appropriately with months of the year, specific examples of locations the birds stop and what the birds do at each of the locations. (Note – a Godwit Migration Map is included at the end of the text, <i>Circle</i>).</p>	<p><i>Circle</i> by Jeannie Baker Alternative picture books: <i>Windcatcher: Migration of the Short-tailed Shearwater</i> by Diane Jackson Hill and Craig Smith <i>Red Knot</i> by Nancy Carol Willis</p> <p>Map provided by teacher</p>

<p>3</p>	<p><u>What are Wetlands?</u> Many migratory shorebirds rely on healthy wetlands for their survival. View the video “Australia's amazing wetlands, World Wetlands Day 2012”. <u>Mind Map</u> Students create a mind map using Activity Sheet 2. They should consider: What are wetlands? What are the benefits of wetlands? What types of animals do wetlands support? Why should we conserve wetlands? What is the Ramsar Convention?</p>	<p>“Australia's amazing wetlands, World Wetlands Day 2012” https://www.youtube.com/watch?v=eotxzebGLQw Activity Sheet 2</p>				
<p>4</p>	<p>How are people changing the natural environment of wetlands in Australia and the Yellow Sea of South East Asia? Students consider this during a second reading of <i>Circle</i>. As a class, discuss the changes observed from the text. Select a local wetland area* (or a place known to students) and allow students to research how people have changed the natural environment of this area. Eg use Google Maps for noting building development, possible sources of pollution, uses by the community, changes in ecosystem due to the introduction of other species. Provide students with a map of the wetland area and its surrounds and support them to annotate the map with these changes. Bring students together to share their annotations and promote discussion of each of these impacts. Discuss the management of this area. Who are the government organisations responsible for this? (local and state government). Is the area you are studying protected by the Ramsar Convention?</p>	<p><i>*Note: the wetland area selected should be the habitat for the chosen migratory shorebird that will be studied in future lessons.</i></p> <p>Map of wetland area (teacher to source)</p>				
<p>5</p>	<p>Share the Department of Environment’s fact sheet on “Wetlands and Indigenous values” with students. Ask students to select a Ramsar site from those listed on page 2 of the fact sheet and use Activity Sheet 3 to record research of the cultural value of these areas and how Aboriginal Peoples influenced the natural environment in the past. Refer students back to the local wetland area studied in the previous lesson. How have we changed the way we use wetlands? What impact would this have on the types of animals that wetlands support?</p>	<p>Fact sheet: https://www.environment.gov.au/system/files/resources/b04e5e2a-4256-4548-974e-00f7d84670a9/files/factsheet-wetlands-indigenous-values.pdf Activity Sheet 3</p>				
<p>6</p>	<p><u>Local shorebirds</u> Select a threatened migratory shorebird to study with your class (one that might visit the wetland area used in Lesson 4). Allow students to conduct their own research to learn more about this species using Activity Sheet 4. Provide students with a picture of the chosen species of shorebird to label individual characteristics.</p>	<p>Refer teachers resources for additional information on some species Activity Sheet 4</p>				
<p>7</p>	<p>Using research from Lesson 6, discuss the threats students identified to the shorebird being studied. In student workbooks, draw a table to list the threats to these birds from nature and caused by humans. Are there any ways the threats caused by humans can be reduced? Who’s responsibility would it be to monitor these ideas (ie individuals, governments)? Share with students <i>Interview with a Bar-tailed Godwit</i> video (it was made by Birdlife Australia for its “Farewell Shorebirds” campaign in 2014). Why was it made? Who is the audience? Is it successful?</p>	<p>Refer teacher resources for background reading Threats to shorebird</p> <table border="1" data-bbox="1601 1281 2089 1345"> <thead> <tr> <th>Natural threats</th> <th>Threats caused by humans</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table> <p>Video <i>Interview with a Bar-tailed Godwit</i> https://www.youtube.com/watch?v=W95SJ6BLdG0</p>	Natural threats	Threats caused by humans		
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8	<p><u>Assessment task</u></p> <p>Using what they have learnt about the chosen migratory shorebird, students should consider what they can do to help them. Students work in pairs or individually to complete Activity Sheet 4 and use this as a planning sheet to develop a specific way to manage a threat to this species. They should then build a model, draw a design, create a presentation or short film to present their idea to the class.</p>	Activity Sheet 5
9	Continuation from previous lesson. May also include presentation to class.	

Assessing student learning

Formative	Monitor students' developing understanding throughout the unit.
Summative	Assessment task: Considering the ways people change and influence places and the environment, students investigate and design a way to address a threat faced by a selected migratory shorebird (lesson 8-9). This activity will also allow students to demonstrate their knowledge and understanding of the characteristics of the shorebird and its interdependence with the environment and the influence of humans.

Additional activities for other Key Learning Areas:

English	A student communicates effectively for a variety of audiences and purposes using increasingly challenging topics, ideas, issues and language forms and features EN3-1A	<p>Write an information report on a shorebird of own choice.</p> <p>Write a persuasive letter to your local council to help the shorebirds.</p> <p>Write a newspaper report to inform local residents of their role in protecting these birds. Create a poem about your favourite shorebird.</p>
Mathematics	<p>A student:</p> <ul style="list-style-type: none"> • locates and describes position on maps using a grid-reference system MA3-17MG • uses appropriate methods to collect data and constructs, interprets and evaluates data displays, including dot plots, line graphs and two-way tables MA3-18SP 	<p>Create a map with the navigational route of a shorebird outlined (eg the East Asian-Australian Flyway). Describe the route using landmarks and directional language.</p> <p>Visit a local park or wetland area and collect data on birds sighted (use a bird ID program to help http://www.birdsinbackyards.net/finder).</p> <p>Record data in appropriate table and graphs using digital technologies.</p>
Science	A student examines how the environment affects the growth, survival and adaptation of living things ST3-4LW-S	Adaptation of living things: students study the different shapes of a variety of shorebird bills (beaks) and why they are considered to be adaptations. Draw diagrams of the bills and annotate.

Resources for Teachers

Information on migratory shorebird species that visit Australia <https://wingthreads.com/about/>

Video made by a shorebird enthusiast regarding shorebirds in southern Sydney [Birdlife Southern Presentation Port Hacking Shorebirds](#)

Wetlands and Migratory Shorebirds fact sheet <https://www.environment.gov.au/system/files/resources/fd288ccf-ba11-468b-ac36-3f871ea8cbe7/files/factsheet-wetlands-migratory-shorebirds.pdf>

Migratory shore birds information <https://www.youtube.com/watch?v=fSRrDlrB26w>

ABC News article regarding some of the threats faced by shorebirds <https://www.abc.net.au/news/2016-06-17/flying-for-your-life-ann-jones/7459288>

Sooty Oystercatcher - https://www.youtube.com/watch?v=L8LWiVw8_1E

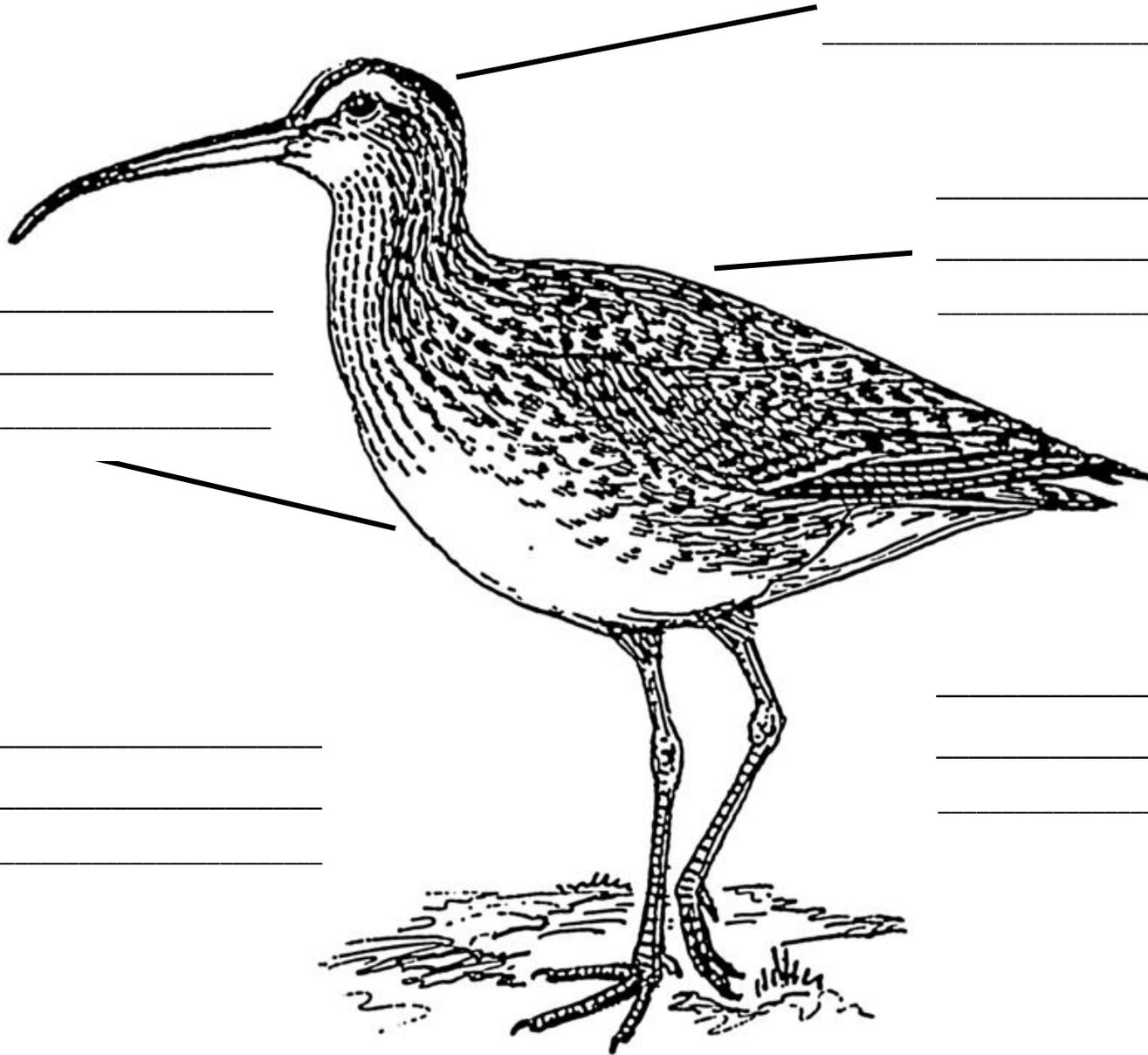
Pied Oystercatcher – https://www.youtube.com/watch?v=L8LWiVw8_1E

Bird ID <http://www.birdsinbackyards.net/finder>

Citizen science project: Aussie Backyard Bird Count 19-25 October <https://aussiebirdcount.org.au/>

Shorebird ID sheets and monitoring citizen science projects <https://birdlife.org.au>

Activity Sheet 1 - How do Shorebirds prepare for a long flight?



Activity Sheet 2 - Mind Map



Activity Sheet 3 - Significance of wetlands to Aboriginal People

Ramsar site: _____

Cultural value of site	Uses for food/shelter

Activity Sheet 3 - Shorebird Study

What is the name of the shorebird you will study? _____

What does it look like?	Where does it live?
What does it eat?	What threats does it have?
Interesting facts.	How has it adapted to suit its environment?

Activity 5 - How can you help shorebirds?

What is the name of the shorebird you will protect? _____

What is the threat you want to protect the birds from?

What is your idea to reduce this threat?

How will it work and who will manage it?

How will it help the birds?

Would your idea help protect the birds from any other threats?
