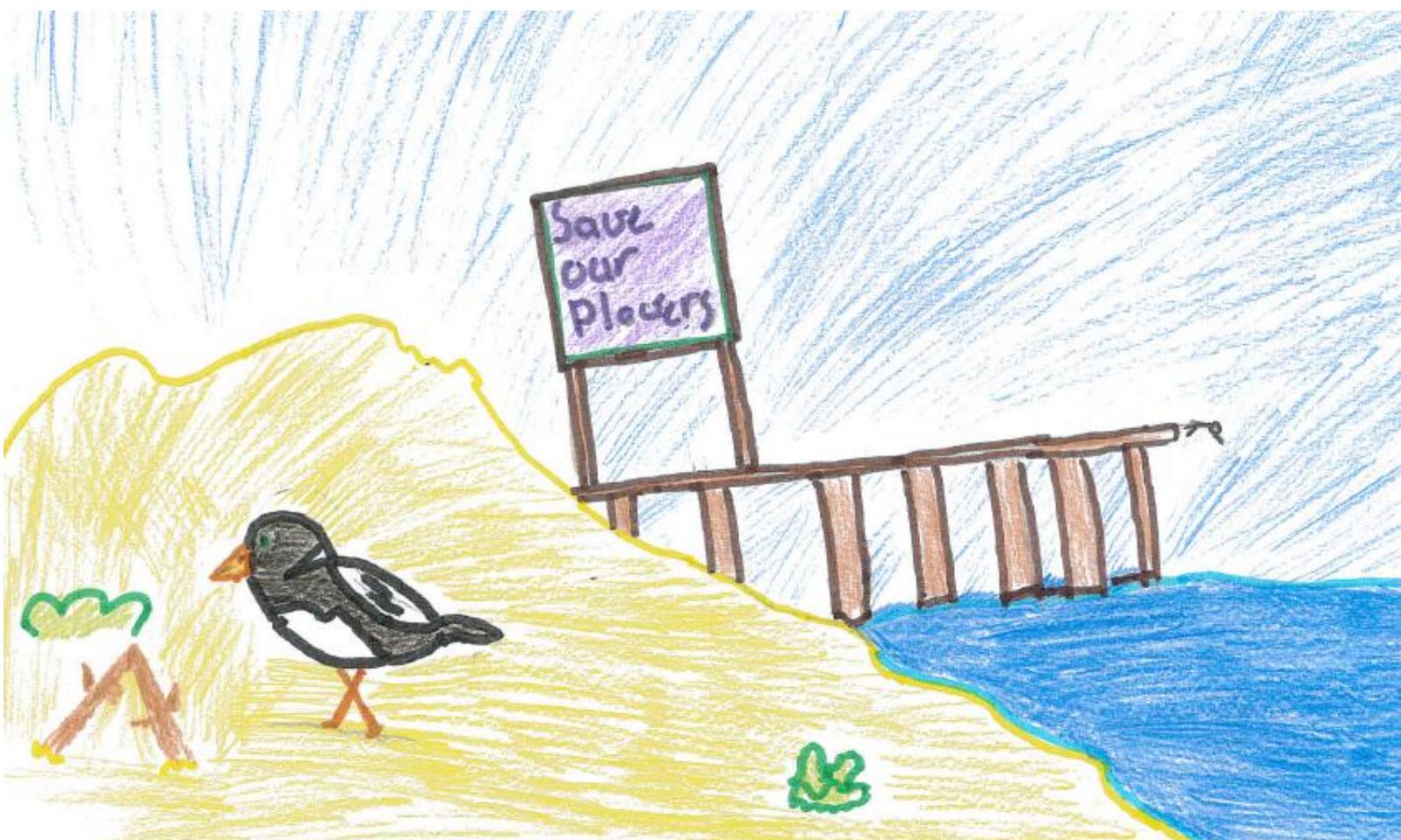




Bringing the Coast to the Classroom

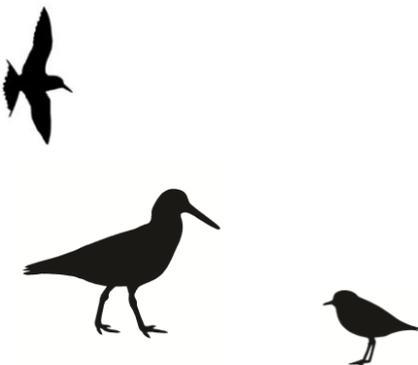
Beach-Nesting Birds Education Kit



birdlife
AUSTRALIA

Contents

Objectives	2
How to use this kit.....	3
Links to Curriculum.....	4
Who has developed this kit?.....	4
Acknowledgements	4
Introduction to Beach-nesting Birds	6
Hooded Plover	7
Sooty Oystercatcher	8
Pied Oystercatcher	9
Red-capped Plover	10
Beach-stone Curlew	11
Threats to Beach-nesting Birds	12
ENGAGE!	14
Activity 1 – Interactive Presentations	14
Activity 2 – Life on the Beach: A role play for students.....	16
Activity 3 – The Wing Thing	18
Activity 4 – Visiting the Beach	20
EXPLORE!	24
Activity 5 - Creating a Healthy Habitat	24
Activity 6 – Hide to survive!	25
Activity 7 – Postcard Partners.....	27
Activity 8 - Short Activities	28
EXPAND!	29
Activity 9 – Birds and Beaks.....	29
Activity 10 – Creating a Beach Food Web Mobile or Wall Display	31
ACT!	33
Activity 11 – Building Chick Shelters	33
Activity 12 – Changing with the Times: Photopoint monitoring	35
Activity 13 – Awareness Raising Banners, Posters or Displays	37





Objectives

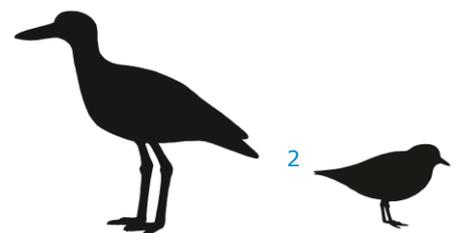
When students are asked to think of wildlife or threatened species, they commonly identify elephants, rhinos, gorillas and other international iconic species that have been the subject of awareness campaigns. Australian wildlife and locally threatened species are typically overlooked, and yet these are the wildlife for which students can make the greatest contribution.

Birds provide the perfect opportunity for connecting students with wildlife and conservation issues in Australia. They are highly visible, occur in almost every environment, and students would be familiar with at least one Australian bird species.

This education kit focuses on birds that inhabit coastal habitats (Beach-nesting Birds). Many of these species are highly threatened, and this is commonly due to a range of human pressures. The direct connection between coasts, birds and people creates an ideal topic for exploring environmental education.

Most students will identify with the coast, whether they live nearby or simply visit the coast during summer: beaches are a significant part of Australian culture. Many students will have their own set of experiences with the coast. Exploring these connections and providing education about the wildlife that depend on these habitats, is likely to create direct links between sustainable behaviours and outcomes for students. It will also promote an overall positive attitude to these environments. The benefits of education expand beyond the classroom and into the community, as educating our younger generations about the impact we can have on the environment can re-create social norms within society.

This education kit is based on an environmental education for 'sustainability' framework to provide learning and activities that not only increase students awareness and understanding, but develop their concern for the environment and provide the opportunity for them to take action. This creates a rich and exciting resource for both teachers and students.

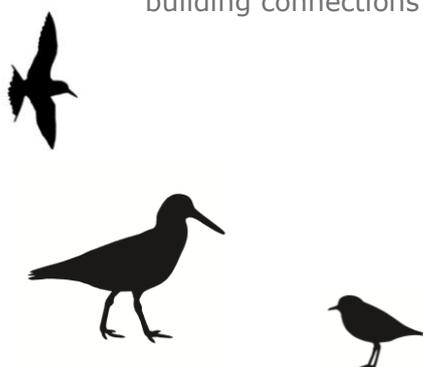


How to use this kit

This kit has been created for Primary and Early Secondary teachers within Australia. Many activities have been designed to be undertaken individually, but by choosing one or a number of activities from each category described in the table below students achieve a thorough understanding, develop concern and act to make a difference in their local environment.

Activity Category	Activity Number	Activity description
Engage	1, 2, 3, 4	These activities mentally engage the students with concepts and ideas. Engagement activities help students to make connections with what they know and can do. They capture their interest and provide an opportunity for them to interact and express what they know about concepts around beach-nesting birds and their coastal habitat. Activities 1 – 3 are classroom based, but if you'd like to take things out of the classroom, Activity 4 provides information on beach visits with students.
Explore	5, 6, 7, 8	Explore activities make a good follow on from an Engage activity. They undertake hands-on activities in which they can explore the concepts they have just learnt about in Engage activities. <i>Hide to Survive</i> , Activity 6, allows students to directly explore the concept of camouflage through a fun craft-based exercise. <i>Creating a Healthy Habitat</i> , Activity 5, provides students with a short hands-on activity which reinforces ideas covered. Activity 7, <i>Postcard Partners</i> , provokes thinking beyond the student's local area and provides an opportunity to connect with another school via postcard correspondence. Activity 8, provides a series of short activities under 10 mins.
Expand	9, 10	These activities expand some of the ideas and concepts that have been raised in earlier activities. These concepts include general ecological processes, such as adaption, predator/prey relationships and food webs. These do not focus specifically on beach-nesting birds, but rather on interactions between wildlife and their environments more broadly.
Action	11, 12, 13	Through Explore lessons, students are exposed to learning about the threats facing local wildlife and they may feel concern. By undertaking an Action activity, students are able to be make a direct, hands-on contribution to conservation.

This kit is also a useful resource for environmental educators outside of schools, and for community volunteers actively working in the coastal environment, who are interested in building connections with their local schools.





Links to Curriculum

This education kit has been designed to link with the National curriculum for year levels in primary and lower secondary. It links with many aspects of Science (including Science Understanding – Biological Sciences and Science Inquiry Skills) and Geography (both Geographical Knowledge and Understanding and Geographical Inquiry and Skills) as well as areas of Art (Media and Visual Arts), Maths and English. The links to curriculum can be found in the supporting material on the attached disc.

Who has developed this kit?

In January 2012, Birds Australia and Bird Observation and Conservation Australia merged to create a single national bird conservation and birding organisation – BirdLife Australia. BirdLife Australia is an organisation that brings Australians together for the appreciation, study and conservation of birds. It is a member-based not-for-profit company with over 10,000 members and 25,000 supporters and volunteers across Australia. BirdLife Australia has an extensive national footprint with offices in three states, 28 local branches, special interest groups, observatories and reserves across the country. We are centrally coordinated by our head office in Melbourne. Much of our work is program based and engages thousands of volunteers.

Our mission is to create 'a bright future for Australia's birds'. This mission is supported by three overarching organisational goals: 1) to improve outcomes for Australian birds; 2) promote appreciation and understanding of Australian birds and; 3) build one strong organisation.

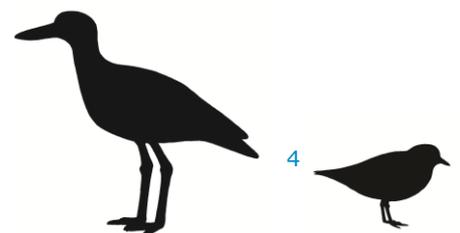
BirdLife Australia is a leader at delivering conservation outcomes for birds by finding solutions to the threats they face and inspiring action to ensure birds and their habitats flourish. We have a great heritage of community engagement and education, scientific monitoring and research, and policy development and advocacy. We recognise the value of transferring knowledge to empower communities to generate positive outcomes. Our unique combination of community, knowledge, skills and resources provides a strong platform for continued leadership as Australia's foremost bird conservation organisation.

BirdLife Australia's Beach-nesting Bird project has been working to recover Eastern Hooded Plovers since 2006. Working with community volunteers across Australia we have engaged and educated thousands of beach users about beach-nesting birds, trained volunteers and land managers in monitoring and threat identification, protected eggs and chicks through on-ground management and researched new ways to protect these birds and improve their breeding success. Visit www.birdlife.org.au/beach to find out more about the project.

Acknowledgements

The *Bringing the Coast to the Classroom* Education Kit has been produced through the Beach-nesting Birds project at BirdLife Australia. This work has been supported by the Australian Government's Caring for Country program, the Hugh D. T. Williamson Foundation, and Dr Bill Holsworth.

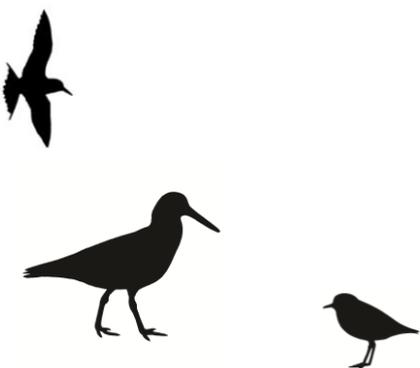
A number of activities are based on well known lessons, including 'Birds and Beaks' and the 'Food Web' activities, and are widely used in environmental education. Additional



information and other activities were developed by Dr. Grainne Maguire, Ms. Renee Mead and Dr. Meghan Cullen.

We'd like to thank Glenn Ehmke, Dr. Mike Weston, Dr. Grainne Maguire, Chris Purnell, Clare Morton, Steve Johnson, Dean Ingwersen, Elizabeth Steele-Collins, Chris Tzaros, Ian Montgomery, Renee Mead, Dr. Meghan Cullen, Warren Reed and Keesan Lee who donated photos, images and illustrations for this education kit. Front cover by Hunter from Tootgarook Primary School, back cover (top) Red-capped Plover by Poppy from Narrawong District Primary School and (bottom) Sooty Oystercatcher by Lochie Drysdale.

The text and illustrations can be photocopied without permission for not-for-profit, educational purposes.





Introduction to Beach-nesting Birds

What are Beach-nesting Birds?

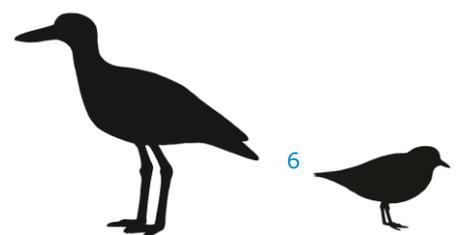
Many different types of birds live in Australia's coastal areas - gulls, terns, cormorants and shorebirds, to name a few - but only a handful of them actually nest on the beach.

There are five species of Australian shorebirds which nest on the beach, including Pied and Sooty Oystercatchers, Red-capped and Hooded Plovers, and Beach Stone-curlews. These are the five birds of primary focus for this education kit. There are also references made to threatened seabirds, such as the Little and Fairy terns, which also nest on beaches.

Beach-nesting shorebirds lay their eggs on beaches above the high-tide mark, in the dunes or along rocky shores (depending on the species), where sand, shell or rock provides ideal substrate for their well camouflaged eggs. This camouflage serves to protect the eggs from native predators. Once the eggs hatch, the colouration of their chicks also closely matches the coastal environment. Beach-nesting shorebirds nest closest to their food source so that when the eggs do hatch, the tiny chicks do not have to travel far to forage.

Nesting on the open ground and having chicks that move around the beach feeding, but cannot fly to escape predators or disturbance, means that these birds are particularly vulnerable early in their life. This early vulnerability, coupled with increasing human pressures on coastal environments, has resulted in many beach-nesting bird species experiencing population declines, local extinctions and a contraction in range.

This introduction provides in-depth information on each of the five shorebirds that nest on Australia's beaches.



Hooded Plover

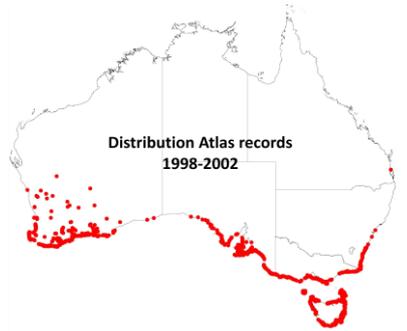
Scientific name: *Thinornis rubricollis*

Key description: 19-23cm long and between 90 – 100g, it's a stocky plover with a black 'hood', and a broad white 'collar' across the back of neck. It has a red-bill with a black tip, red rings around the eyes, and orange-pink legs and feet. Male and females look identical. Juveniles have a grey hood instead of a black hood.



Two subspecies of Hooded Plover are recognised:

- *Thinornis rubricollis rubricollis*: Eastern Hooded Plovers. Found in New South Wales, Victoria, Tasmania and South Australia.
- *Thinornis rubricollis tregellasi*: Western Hooded Plovers. Found in Western Australia.



Conservation status: Hooded Plovers are listed as Critically Endangered in New South Wales, and Vulnerable in Victoria and South Australia. They are listed as nationally Vulnerable under the Environment Protection and Biodiversity Conservation Act 1999.

Breeding season: Eastern Hooded Plovers breed from August to April, with peak breeding occurring November to January. Western Hooded Plovers can breed any time of year.



Nesting habitat: In the eastern part of their range, Hooded Plovers are exclusive beach-nesters, only nesting on ocean beaches above the high-tide mark. This includes, the upper beach, sand dunes, dune blow-outs, Aboriginal middens, sand spits, margins of estuaries, low sand islands, and occasionally among rocks or on rocky outcrops. In Western Australia, Hooded Plovers nest on beaches, but they predominantly nest on the shores of coastal and inland salt lakes.



Across their range, they generally nest in the open, where they have a 360 degree view of their surroundings. They can often nest near driftwood, seaweed or sparse vegetation. Nests are often unlined (plain sand) or sometimes lined with pebbles, shells, stone, twigs or seaweed. This beach nester has the most specialised nesting requirements of all the beach-nesting species. Generally, 3 eggs are laid per clutch, which take 28 days to hatch. Chicks take 35 days to be able to fly (fledge), and can leave their home territory sometimes within days of being able to fly.



Nest defence:

Nest stage: Both the male and the female take turns to incubate the eggs. When disturbed, the Hooded Plover will walk or run from the nest, and either wait by the water's edge or walk ahead





of the 'intruder'. When the 'intruder' is distant enough, they then run or fly back to the nest. They will also false brood, bob their heads and false feed to distract the 'intruder' away.

Chick stage: When chicks are threatened, adult Hooded Plovers perform a broken-wing display (pretending to be injured so as to attract the attention of the predator) or rodent-run (mimics the movement of a mouse or rat). Parents call to chicks to warn of approaching danger, and defend either through leading (running in front of a potential predator to 'lead' them away), distraction displays, or if the threat is another bird, by running or flying at it. Chicks will crouch and flatten, or run and hide in or near seaweed, vegetation, driftwood, cuttlefish, flotsam and jetsam (objects washed ashore), under rock ledges or in wheel ruts or depressions made by footprints or horse/stock hooves when disturbed.



Chicks are extremely vulnerable, as they are flightless for 35 days, but for the first 10- 12 days of their life, they cannot regulate their own body temperature and rely on the adults shading them, or providing them with adequate warmth. They also must roam around the beach, among the seaweed and on rocky platforms to find food. Time spent hiding from threats can have severe impacts on their energetic reserves, and ability to grow and survive.

Sooty Oystercatcher

Scientific name: *Haematopus fuliginosus*

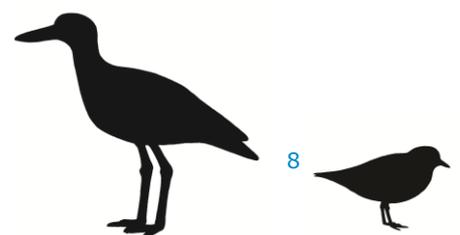
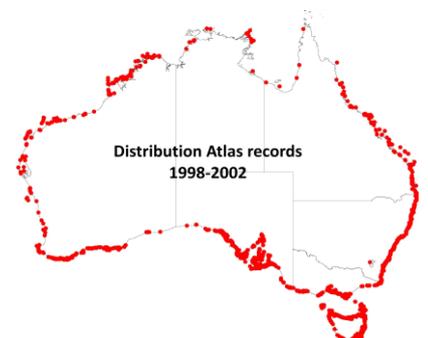
Key description: 40-52cm long and can weigh 750g. A stocky, all-black shorebird with a long red bill and dull pink legs. The females have a longer, more slender bill than males. Juveniles have shorter, paler bills, pale legs and a less obvious eye ring compared to adults.



Conservation status: Vulnerable in New South Wales and Rare in South Australia.

Breeding season: October to January. In southern parts of Australia, eggs can appear as early as July.

Nesting habitat: Usually breed on small rocky islands or on beaches. Nest on a range of surfaces including gravel, coral rubble and rocks, sand and areas surrounded by seaweed and vegetation.



Nest defence:

Nest stage: When threatened, adults may show any of the following behaviours to distract the potential predator from their nest by:

- calling
- flicking stones around
- performing distraction displays, with wings held loosely from body and quivering
- crouching and pretending to brood a false nest

Chick stage: When threatened, the adults will feign lameness and roll and tumble on their backs to draw the attention of the threat (e.g. predator or person) to themselves rather than the chicks. They will also call, bob, walk rapidly to and fro over in a small area, or even fly at the predator. Meanwhile, the chicks hide in crevices, dive into rock pools or hide under ledges.



Pied Oystercatcher

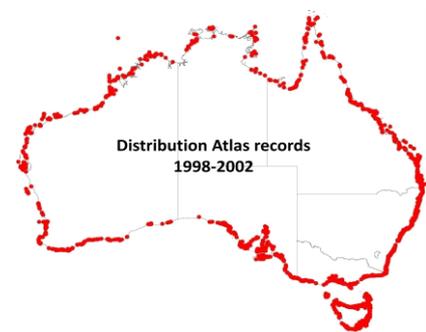
Scientific name: *Haematopus longirostris*

Key description: 42-50cm long, can weigh between 650-750g, it's a sturdy, black and white shorebird with long reddish bill, stout pink legs and feet. Females are slightly larger than males.



Conservation status: Endangered in New South Wales and Rare in South Australia.

Breeding season: September to January in southern Australia. In northern Australia, they can start to breed from June, July or August.



Nesting habitat: Pied Oystercatchers breed on sand, shell-grit or pebbles on beaches, estuaries and around lagoons. They generally lay their eggs in the dunes, at the base or on a slope, and can be in the open, or among vegetation. As a larger shorebird, this species can tolerate nesting in cover more than the Hooded Plover for example, as it is more likely to be able to still have a good view of threats. Occasionally Pied Oystercatchers will lay eggs on mudflats or saltmarsh, and rock stacks, exposed coral ridges and offshore islands.



Nest defence:

Nest stage:

When adults are disturbed, they may show any of the following behaviours to distract the potential predator away from the nest:

- walking away from the nest and 'leading' the predator from this area





- false-brood (i.e. sit as though pretending to incubate eggs)

Chick stage:

When the eggs have hatched, the parents will do any of the following, to protect the chick from harm:

- alarm call
- fly in a circle above the threat
- chase intruders out
- perform distraction displays, by pretending they have a broken wing, or move their wings in a rowing movement
- sometimes even swoop!

Chicks will crouch, run and hide or may swim from danger.



Red-capped Plover

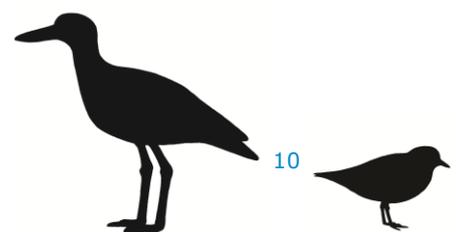
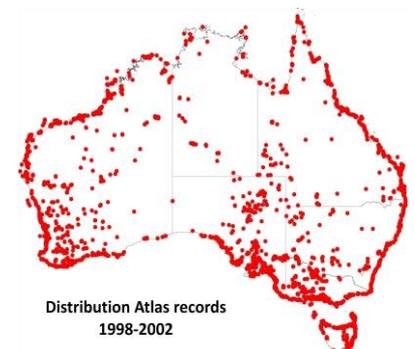
Scientific name: *Charadrius ruficapillus*

Key description: Smallest resident shorebird in Australia, they are 14-16cm long and weigh only 35-40g. They are grey-brown and white, with a rufous coloured head and hind neck. Males have more bright red colouration on their heads, whereas females have a duller, rusty-brown cap.

Conservation status: Secure throughout Australia, although this assessment is questionable. Declines are currently being observed, as well as localised extinctions from historically occupied areas. The initial high national population size and widespread distribution makes it difficult to assess their status, but also is the reason for the conclusion that they may be secure.

Breeding season: July-January and occasionally into February and March in Southern Australia. In northern Australia, breeding recorded in all months, but mostly March-May and August-November.

Nesting habitat: Red-capped plovers have the broadest habitat range of beach-nesting species, occurring coastally and inland, near fresh and salt water. They nest on the ground in sand, shell grit, mud or stony areas, on beaches, dunes, estuaries, sand spits, sandflats along river foreshores, saline wetlands and lakes, on islands in samphire, brackish or freshwater lagoons, swamps and dam banks. Nests can be in the open or under cover and the two strategies offer very different levels of protection – nesting in cover offers good thermal protection (insulation from extremes),



while nesting in the open gives a good, early view of approaching threats.

Nest defence:

Nest stage:

The female incubates in the daytime and the male in the night (when their bright red cap won't stand out to predators). Both parents defend their nest by:

- leading a predator away from the nest
- broken-wing displays
- rodent-run displays
- calling



Chick stage:

Adult Red-capped Plovers will protect their chicks from potential threats by:

- broken-wing displays
- rodent-run displays
- calling

Chicks will crouch or squat/hide beside seaweed or clumps of mud, or under vegetation, and remain motionless even if touched.



Beach-stone Curlew

Scientific name: *Esacus neglectus* or *giganteus*

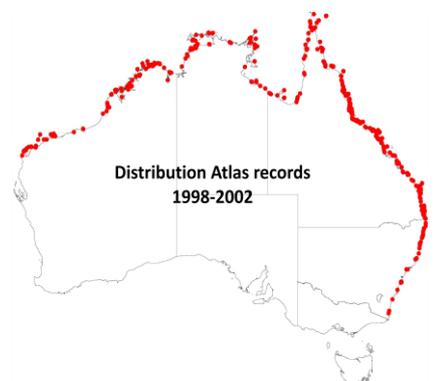
Key description: One of the World's largest, and Australia's largest resident shorebird, it is 54-56cm long, and can weigh up to 1kg. This species has a large head, short tail and short legs with thick knees (which is where it gets its other common name "beach thick-knee"). Its bill is large and strong as its diet mainly consists of crabs. Males and females look identical.



Conservation status: Endangered in New South Wales, Vulnerable in Queensland. Considered secure nationally because of a distribution across the northern coastline of Australia, however very little is known about their numbers and breeding success in these remote regions.

Breeding season: September – November (southern Australia), July – October/November (northern Australia)

Nesting habitat: Nest exclusively on coasts (sheltered or surf beaches) and offshore islands or estuaries. Nests have been observed in the open, among branches of fallen trees or under





mangrove bushes. Nests can be in bare sand, on pebbles, encircled by dead leaves and twigs or lined with plant material. They generally lay one egg, which hatches after approx 31 days of incubation. It takes the chick 12 weeks to fledge (fly) but are not independent until they are 7-12 months old.

Nest defence:

Nest stage: The incubating adult can be reluctant to leave nest and may become agitated. If agitated, the beach-stone curlew can charge intruders.

Chick stage: If forced to leave their young, they will fly in a circle back to their young when the intruder retreats. Young run and hide under vegetation and press body flat against sand.

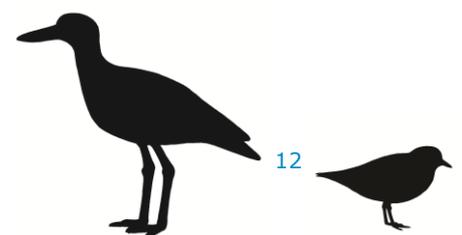


Threats to Beach-nesting Birds

Beach-nesting birds inhabit environments that are a favourite for human recreation and consequently they are struggling to successfully produce young. Their poor breeding success results in a decline in population numbers over time, as older birds die off and there are no young to replace them. These species are on a trajectory to extinction unless we can act now to tackle threats. A key part of their future survival is the coexistence between beach users and birds on beaches.

Coastal environments are highly dynamic and these birds face a range of natural threats. However it is the added pressures that people have added to their habitats which are tipping them over the edge. The below table outlines sources of threat.

People and dogs are some of the most common threats. Off-leash dogs are of particular concern because the birds perceive their energetic movements on the beach as a great threat and are more responsive, spending more time off the nest or keeping their chicks hidden. 4WD vehicles driven along the beach can easily crush eggs or chicks without the driver even knowing, particularly as chicks like to shelter in tyre ruts on the beach. Dune boarding and people cutting through the dunes are also key issues, not only having a greater likelihood of crushing nests and chicks, but adding to erosion of dune habitats which can limit habitat availability.





<i>Natural threats:</i>	<i>Introduced predators:</i>	<i>Human-related threats:</i>
High tides Storms and extreme weather (including cyclones*) Birds of Prey Ravens/Magpies+ Gulls+ Reptilian predators (Goannas)	Foxes Cats Rats Wild Horses * Wild Pigs * Camels *	Recreationists Dogs Horses Vehicles Stock Camel rides * Litter Loss or modification of breeding habitat Dune stabilisation Weeds: <ul style="list-style-type: none"> - Sea Spurge - Sea wheat grass - Marram Grass - Sea rocket Coastal development Beach cleaning Kelp harvesting Driftwood removal Oil spills

* Restricted to species found in the northern parts of Australia, e.g. not a threat to Hooded Plovers.

+ These avian predators have greatly increased in number due to human modification of the landscape, e.g. these birds thrive in urban areas and have many additional food resources.





Activities

The following activities have been used frequently in classrooms around Australia and adapted to maximize student engagement. They offer rich learning experiences and opportunities for connection between people, birds and the environment. Hands on extension activities build a sense of community belonging and a direct relationship between behaviour and consequences, greatly enhancing learning outcomes.

ENGAGE!

These activities mentally engage the students with concepts and ideas. Engagement activities help students to make connections with what they know and can do.

Activity 1 – Interactive Presentations

Ages: All

Class size: 1 – 2 classes

Time: 10 – 45 minutes

Materials:

- Files under 'Presentations' or 'films' folder on attached disc
- Electronic white board (no sound needed) or screen and projector

Background Information

Refer to the introductory text for information on each species (pages 5-12), or more detailed information for each slide is found in the notes section below each slide within the PowerPoint presentations.

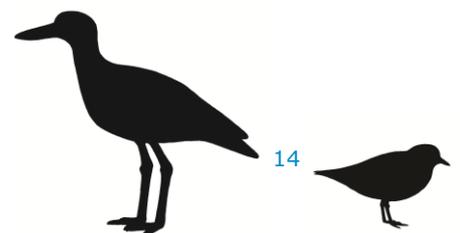
Description:

Option 1 – PowerPoint Presentation

There are a number of interactive PowerPoint presentations available as part of this education kit which provide the opportunity for students to learn about coastal habitats, beach-nesting birds, the threats that they face and how they can help. Figure 1 provides an example of a few of these slides.

1. BNB primary presentation is the most commonly used presentation. It explores Beach-nesting Birds (BNB) with a focus on the Hooded Plover (southern Australia only). This presentation is interactive, enabling the presenter to ask the children questions and allowing them to share their own experiences with the coast and with birds. They even get a chance to search for Hooded Plover nests, learning first-hand how difficult they are to spot, and the pros and cons of camouflage!

The presentation is primarily visual, with most slides containing photographs with limited language content, so that it can be made suitable for any primary-school-age group. The presentation can also be adapted to have more of a local flavour – adding photographs of local beaches where the birds are found, including some examples of what is happening in their area to protect the birds, or even some examples of stories about



their local birds (e.g. any stories about rescue, near-misses with threats, banded birds and their history).

2. BNB short presentation is a shorter version of the above presentation. It is a good alternative to use in conjunction with other Engage or Explore activities such as *Creating Masks and Student Story*.

3. BNB secondary presentation is for students of secondary-school-age and allows the presenter to go into more detail about ecological concepts and explore issues in greater complexity. It also includes more information about BirdLife Australia’s Beach-nesting Birds project, including conservation management of the Hooded Plover and scientific research that has been undertaken.



Figure 1. Examples of the slides used in the school education PowerPoint presentation.

4. BNB Australia is a presentation that focuses in more detail on all five beach-nesting shorebirds, as well as beach-nesting seabirds such as the Fairy Tern. This presentation does not have as much of an emphasis on the Hooded Plover and is designed to be appropriate for students in any location in Australia. Alternatively, you could tailor the presentation by deleting slides about species that don’t occur in your area.

5. Shorebirds education presentation is a presentation that introduces students to the diversity of shorebirds in Australia and describes the difference between migratory and resident shorebirds. The presentation uses the Red-necked Stint and the Red-capped Plover as examples for each of these types of shorebirds, and discusses different life history aspects and the threats these birds face in Australia and during their migration. This is suitable for primary and early secondary students.

Option 2 - Caught on Film!

If you don’t feel confident in giving the presentations yourself, never fear, there is an option of the mini documentaries! Two short films have been developed to 1. Introduce Beach-nesting Birds and their plight and 2. Highlight the work that goes into protecting these birds through BirdLife Australia’s Beach-nesting Birds project. These films make a great introduction to the topic and can be used as a starting point for other activities within this kit.





Activity 2 – Life on the Beach: A role play for students

NB: This activity focuses on Hooded Plovers and it most appropriate for southern Australia

Ages: Year 2 – Year 8

Class size: 1 class (<30 students)

Time: 1 hour – 2 hour (dependent on age)

Materials:

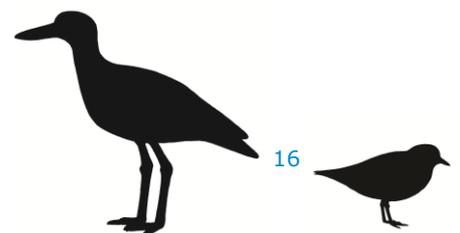
- Files under 'Life on the Beach Activity' folder on attached disc
- Role Play Cards (laminated if possible)
- Mask templates (ideally printed on heavy paper)
- Elastic or stick to hold mask in place
- Scissors
- Glue and/or sticky tape
- Pencils/crayons/markers
- Decorative materials (paint/glitter/stickers/material)

Background Information: Refer to Introductory text (Pages 5-12).

Description: This is a role-playing, story activity and is based on the life of the Hooded Plover. This activity begins with students being assigned a character for the role play, such as a Hooded Plover adult, chick or egg, or a predator or other type of threat. The students then make a mask for their character based on templates provided on the disc (see Figure 2a for examples). Provide the children with lots of different options for decorating their masks, such as pencils, paint, glitter or fabric – especially for some of the less exciting looking options, such as the eggs (see Figure 2b). Also provide pictures of each character so the students have ideas for colours. Depending on time available, you may need to limit the amount of time devoted to decorating masks to 15 minutes for example.

The story cards (example Figure 2c) are placed in a circle on the floor and each student finds their place based on their character. The scene is set and each student (in costume/mask) reads from their assigned character card. The story begins with a pair of Hooded Plovers returning from their winter flock to their breeding beach and follows their journey throughout the breeding season, through the hardships of nest failure and the achievement of raising a chick to flying age (fledging!).

This session is most suitable for Year 2 to Year 7. The language on the character cards and the time limits for creating masks, make it difficult to run this activity with younger students. It is advised to always check if there are any students who would feel uncomfortable reading aloud and resolve this before the story session begins (this could



mean pairing students together for a given character). Once the students have completed the story, evaluate the story with them. Discuss the different threats and potential solutions. To build on the story's conclusion, it is also recommended that you provide some information on their local Hooded Plovers and what they can do to help them.

Additional Notes: To adapt this activity for younger students, the teacher reads the 'Role play booklet' (found on disc) to the class. As the story unfolds, the students assigned to a given character, act out their role in the story. This provides an opportunity for them to engage with the story.

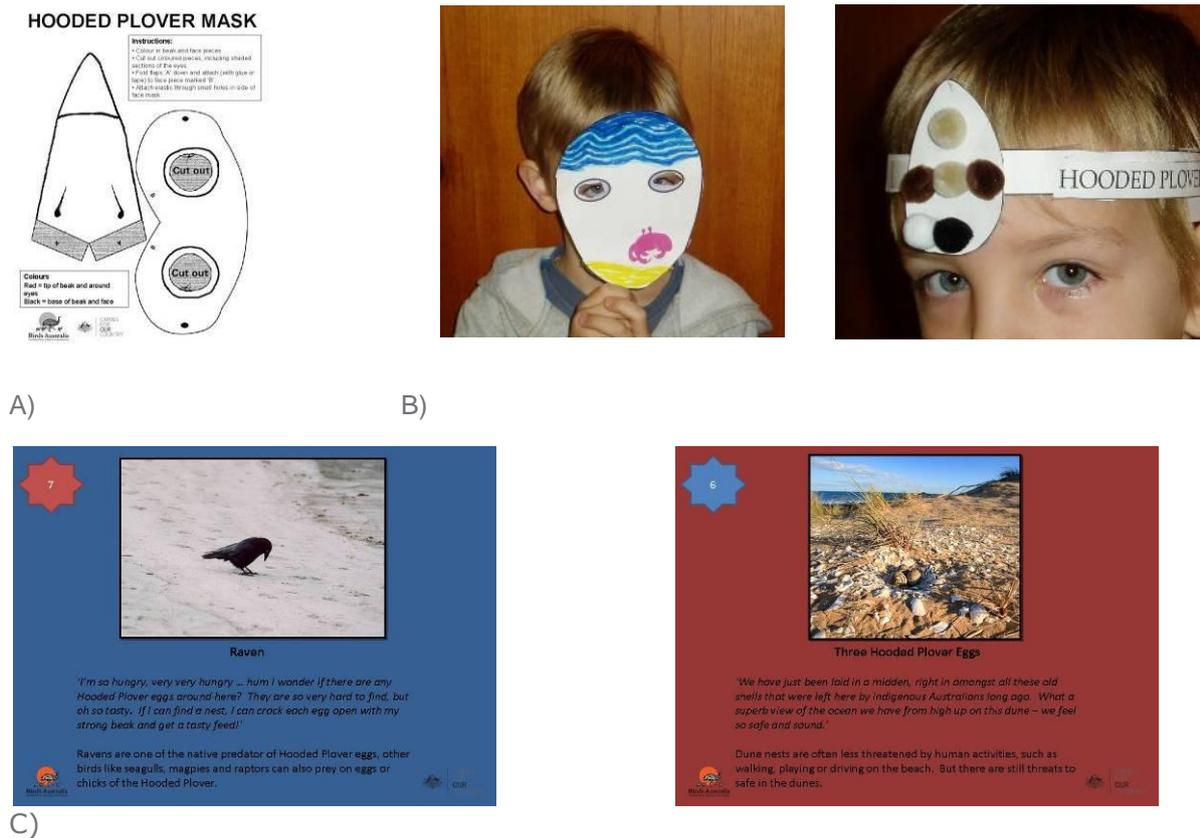
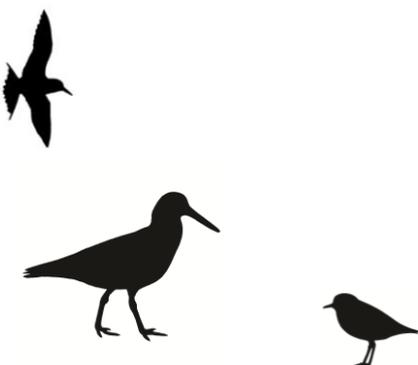


Figure 2. Example of (A, B) mask templates and examples of mask decorations, and (C) the role play cards used during the Hooded Plover role play activity (see disc for full set of mask templates and cards).





Activity 3 – The Wing Thing

Ages: Foundation – Year 6

Class size: 1-2 classes

Time: Varied

Materials:

- Computer and internet access
- The Wing Thing Activity booklet

Background Information: BirdLife Australia has a series of activity booklets providing school-age children with fun ways of learning about birds. The Beach-nesting Birds Wing Thing booklet is the first in this series. BirdLife Australia, together with Culture Victoria, have produced an online resource to complement this booklet. This online resource has many interactive activities, unique and creative resources, and useful instructions for activity leaders.



Description:

The Wing Thing online resource provides lots of information and imagery, together with a number of activities. The online resources can be explored in any order, but a good starting point is the interactive animation www.cv.vic.gov.au/stories/land-and-ecology/the-wing-thing-beach-birds/

CULTUREVICTORIA

[Stories](#)
[Collection Search](#)
[Organisations](#)
[Blog](#)

[Home](#) > [Stories](#) > [Land and Ecology](#) > [The Wing Thing: Beach Birds](#) > [The Hoodies](#)

EXPLORE STORIES BY THEME

A DIVERSE STATE

ABORIGINAL CULTURE

IMMIGRANTS AND EMIGRANTS

LAND AND ECOLOGY

BUILT ENVIRONMENT

SPORTING LIFE

CREATIVE LIFE

EXPLORE STORIES BY

HISTORICAL THEME

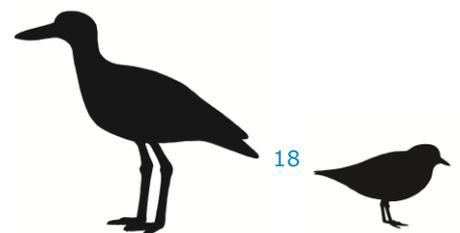
PLACE

CONTRIBUTORS

The Hoodies



Play the Hoodie interactive by clicking on this main image and see the world through a Hooded Plover's eyes!



This interactive animation is a great way for kids to explore the potential conflict between beach use and wildlife conservation. The animation begins with a poem introducing the Hooded Plover and then the students have the opportunity to move the Hooded Plover around an animated beach scene, clicking on each 'threat' as it appears on the screen. As they click on each threat, an animation will play that shows how that threat impacts the birds. These are fun and creative animations that appeal to the imagination of students!

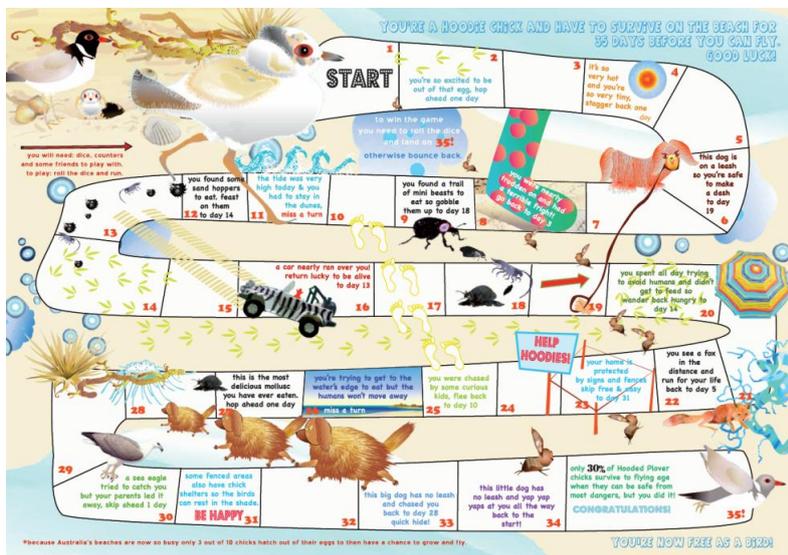
As there are no words spoken in the animation, this provides an opportunity for the activity leader to discuss the content of each animation. Students can either be prompted to predict what may happen before they click on the threat. Alternatively, once they have completed the interactive animation, students could break into groups to discuss how each threat operates and then report back to the class. They could use the following questions to prompt their discussions around a given threat:

What happened in the animation?

What do you think this means for the survival of those birds?

What could be done to help the birds survive?

Allowing students the opportunity to watch this animation as a starting point encourages them to question what is occurring on the beach in these animations. Then rather than being told about the threats these birds face, they can explore these ideas through discussion with classmates. This activity gives teachers and students the opportunity to use *teaching for effective learning* principles, developing expert learners and using key actions including 'thinking out loud to organise my thoughts' and 'asking questions to clarify topics and hear others' explanations'.



The Wing Thing Activity booklet contains educational information and games. It is perfect for reinforcing ideas that have been discussed during the animation or an Activity 1 presentation.

The booklet includes learning how to draw a Hooded Plover and even a snakes and ladders Hooded Plover game!

The Wing Thing booklet can be downloaded at: www.birdlife.org.au/projects/beach-nesting-birds-for-kids-and-teachers or contact BirdLife Australia to determine whether hard copy booklets are available: hoodedplover@birdlife.org.au





Activity 4 – Visiting the Beach

Ages: Year 2 – Year 12

Class size: Small group or 1 class (<30 students)

Time: 1 hour – half day

Materials:

- Binoculars or spotting scope
- First aid kit
- Appropriate wet/sunny weather clothing/protection

Background Information: Beach-nesting shorebirds spend their life on the beach. During certain stages of the year, spring/summer in southern Australia and the dry season in northern Australia, the birds will be breeding on the beach and will occur as breeding pairs. At other times of year they may be more mobile and moving to where there is food, even feeding in large flocks. Depending on your location, you may be able to see these birds year round, or you may only have an opportunity at certain times of year. A beach visit is a great opportunity for the students to experience the birds, their habitats and threats. However, given human beach use can have the potential to have disastrous consequences for beach-nesting birds, it is critical to check with a knowledgeable person before planning such a visit. This can be the local land manager, one of BirdLife Australia’s Beach-nesting Birds volunteers, or a BirdLife Australia staff member.

Description: This outline provides important factors to consider when planning a beach visit, plus some extra activities students can do while at the beach.

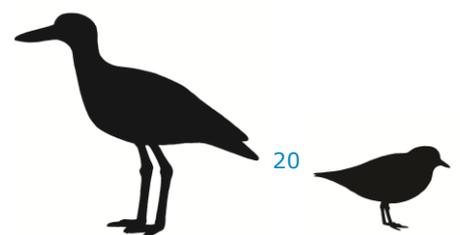
Before heading to the beach:

It is important to consider the time of year and whether the birds will be actively breeding at the time of your visit. You can contact BirdLife Australia’s Beach-nesting Birds team for advice, or the local volunteer group or land manager.

If these birds are nesting or have chicks (in spring and summer in southern Australia), there are important things to remember. You will need to limit the time you will spend on the beach with the students and to limit how close you get to the birds.

It is imperative that we do not compromise the safety of the eggs or chicks when viewing the birds. You therefore should:

- avoid times of high-tide for both safety of the students and to reduce the chance of crushing a nest or chick when walking high up on the beach.
- avoid the hottest part of the day (mid-afternoon), and days when the air temperature is above 25°C. Birds that are nesting should not be disturbed during hot weather as this increases the chance the eggs will overheat and fail to hatch.



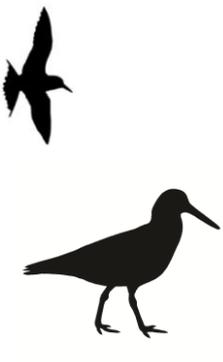
- keep your distance. This can vary for species and individual pairs of birds, so as a safe rule of thumb, 100 metres is usually a good buffer distance. However, judge the behaviour of the birds and if they are alert and watching you, and are bobbing or running along the water's edge, then this means you are still too close.
- minimise the time you will spend at the beach. Once you spot the birds, ensure that the group moves past them and does not spend longer than 10 minutes in their vicinity.
- ideally take an experienced volunteer with the group so that they can help monitor the behaviour of the birds and advise you on safe distances.

The day of the beach visit:

It can be useful to arrange for a local volunteer or birdwatcher to join you on your beach visit. They could check the beach before the students arise to locate the birds and assess their current breeding status. This is particularly handy given the birds can be difficult to find, especially when managing a large group of students.

Here are some tips on finding the birds (it can be difficult!):

- Walk slowly along the firm sand near the water's edge.
- As you go along, scan the water's edge and along the beach to the base of the dunes. It is best to take it slowly and scan the whole 90 degrees ahead of you as you go (not really useful to scan out to sea). Encourage the students to be on the lookout and to be as quiet as they can be.
- By using binoculars, you are more likely to detect the beach-nesting birds from a distance and to see their behaviour before it has been altered due to your presence. This can mean an opportunity to see a bird on its nest or feeding, rather than standing on alert. It is best to scan with the naked eye and then stop every so often and search ahead with binoculars.
- Don't be fooled! Some of the beach-nesting birds are boldly marked but they can be very difficult to find. If the day is windy, they will often shelter behind or beside clumps of seaweed, flotsam or jetsam, or even sink down in depressions made by footprints, vehicle ruts or horse hoof prints. When their white breast and underparts are hidden from view, they are very well camouflaged.
- It is also a good idea to look closely at the sand for bird footprints – their prints are often a giveaway as to the location of the nest. When a dune face is bare, it can be very easy to see lines of prints leading from the beach up the face to a nest. Get the students to search for clues as they walk along, but remember that they shouldn't stray above the high tide mark.
- Beach-nesting birds nest above the high-tide mark and in the dunes. **NEVER let students walk in the dunes.**





- If the birds are nesting, one bird will typically look like it is resting and the other of the pair will be on the lookout. If you get close to the nest the 'look-out' bird will often try to lead you away. It will stay a short distance in front of you, feeding (or pretending to) and as you get closer it will move a little further ahead, until it feels you are far enough from the nest, in which case it will typically fly back to where it began. The bird on the nest will usually come off the nest when a person is within 50–100m, but this varies between species and between individual pairs of birds.
- There are many signs that will help you tell if the pair has chicks. These include head bobbing, rodent-run or broken-wing display (see image below or the website for more images). Remember you cannot linger near birds that are displaying these behaviours as this can have disastrous consequences on their breeding success.



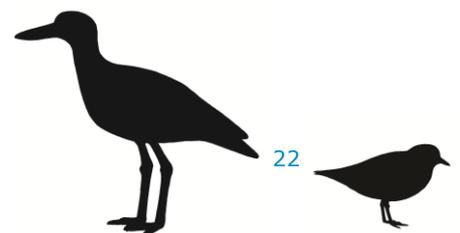
Red-Capped Plover (left) and Hooded Plover (right) displaying broken-wing behaviour.

Additional activities during a beach visit:

1. Mapping the beach

Creating a map or diagram of the beach is a great activity to incorporate into a beach visit. This activity can be adapted across age groups, for example:

- Younger students (Foundation – Year 2) can draw a bird's eye view of the beach.
- Older primary students (Years 3 to 6) can create a more traditional map of the beach, including natural and man-made landmarks and discuss what they would need to include on a map to make it useful to others, e.g. compass, scale, access points and a map legend.
- Secondary students (Year 7+) can incorporate technology if available, using GPS units to determine exact locations and plotting their fixes in Google Earth for example. This age group can also consider land management practices by producing overlays of threats to beach-nesting birds, such as dog regulation zoning or vehicle access points. In turn, they could develop a proposal for environmentally friendly zoning that might include a 'bird protection zone'.



2. Changes to the Landscape

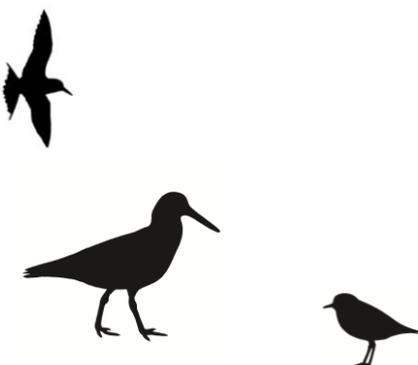
Beaches are incredibly dynamic environments and are constantly changing. Visiting the beach allows the perfect opportunity for students to consider change in the environment and the different scales in time and space across which these can occur. Changes to explore include shifting sands and changes in dune shape, the daily flux in tide height, seasonal changes in human beach use (e.g. winter versus summer), and how the beach would have been used before European settlement. There are many ways Indigenous land use can be incorporated into a beach visit, with middens sometimes being visible at particular sites. Please note middens should be viewed from a distance and not be disturbed due to their cultural significance. Activity 11 expands on a number of these ideas.

3. Prints and the significance of adaptations

If you have a smaller group of students, exploring animal prints can be great fun! Look for, or get students to draw the prints of different groups of birds in the sand. Discuss why they look different from each other. Do the birds use their feet to swim, eat or perch? See Figure 3 below. Activity 8 will help to expand some of these ideas back in the classroom.



Figure 3. Example of a shorebird print with only three toes (left), gull print with webbed feet (middle), and passerine which is a perching bird with a back toe (right).





EXPLORE!

Students will firstly need to do an 'Engage' activity and then they can explore ideas further through one of these hands-on activities. These activities assist students to clarify their own understanding of major concepts.

Activity 5 - Creating a Healthy Habitat

Time: 15 -30 mins

Ages: Foundation – Year 6

Class size: Up to 2 classes

Materials:

- One habitat sheet per student
- Coloured pencils/pen
- Other craft items



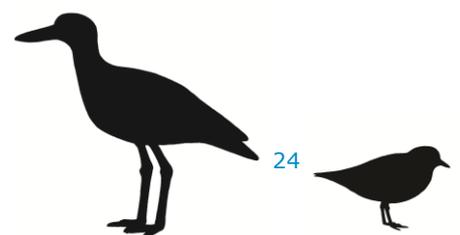
Description: This activity requires an initial discussion around what animals need from their habitat: food, water, shelter and somewhere to nest. They can then use these ideas to 'create' habitat for a beach-nesting bird through this visual arts activity using the templates provided on the disc that comes with this kit (see example image above).

A range of craft or natural items can be used for decoration/creation of habitat. For example, pipe cleaners can be used to create food (invertebrates) for these birds, or natural items such as sand can be glued on to create realistic habitat!

Discuss options with students before beginning, encouraging them to add important and appropriate elements to their 'habitats', such as food, nests/chicks, other beach animals, threats and/or ways to protect these birds. Figure 4 provides examples below.



Figure 4. Hoodie Habitats created by students from Curramulka, Primary School on the Yorke Peninsula, South Australia.



Activity 6 – Hide to survive!

Ages: Foundation to Year 6

Class size: One class

Time: 2-3 classes

Materials:

- A variety of craft materials.
- Access to the internet or books on birds is essential for students to select a species (Option 1).
- A shoe box or other back ground material to create their display.
- An egg-shaped object to decorate (Option 2).

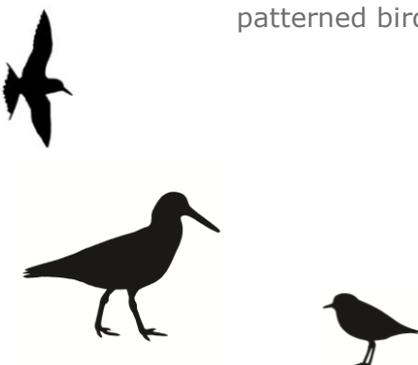
Description: Camouflage is an important adaptation for survival that many different animals use. Beach-nesting birds are masters of camouflage! Their eggs and chicks in particular, have evolved to blend in with their environment. For example, the Sooty Oystercatcher inhabits rocky shores and their chicks are darker in colour to camouflage against the rocks (see Figure 5). The Pied Oystercatcher inhabits sandy shores and their chicks are a lot lighter in colour to camouflage against the sand (see Figure 5). It is particularly important for the chicks of beach-nesting birds to be inconspicuous to predators as they cannot fly to escape predators and need to roam around in highly exposed environments to find food. They must hide to survive!

If you consider some Australian birds, such as most parrots, you will see that not all species use camouflage. Ask the students what the purpose of camouflage is, and why it is so important to the chicks of the beach-nesting birds?

Camouflage provides protection for animals from predators, but at the same time, it can also make some animals more effective predators. When we think of the colour of birds we often just think about their feathers, particularly from above (how another bird would view them), but it can be more complex than that. As birds use camouflage to hide themselves from predators and prey, their colours may vary and help them do both at once. Think about the colour of a tern (see Activity 1: BNB Australia presentation), many are white on their undersides and grey on top. Ask the students why this might be? Where are their predators going to live (flying above them), and where are their prey going to live (below them in the sea)? Students can undertake the activities above, but consider how camouflage works from different visual perspectives, and for different purposes!

There a number of great ways for students to explore camouflage:

1. Students select and print a picture/make a model of a bird. They then create a diorama or background habitat that will allow the bird to use camouflage to protect itself from predators. This can be done to mimic a real bird species that uses camouflage for survival or instead, they can have fun creating bright or patterned birds and create environments they blend into.

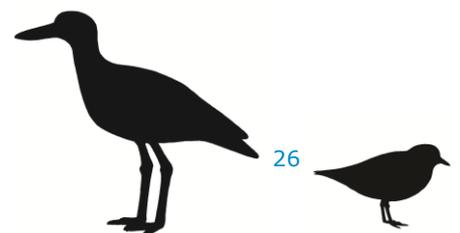




2. This activity can be done with the habitat or environment as the focus rather than the bird. Here, students could explore areas around the school or select a habitat from the web, and then create an animal or object that will be camouflaged in this habitat.
3. Another version of the activity is to focus on the eggs and nests of birds rather than the birds themselves. Here, you could provide students with an egg-shaped object and they can then colour/paint it to blend in to their chosen environment.



Figure 5: Top image shows a pair of Sooty Oystercatchers with their chick hiding in the rocks. The bottom image shows a Hooded Plover chick hiding in a human footprint on the sand.



Activity 7 – Postcard Partners

Ages: Year 2 – Year 8

Class size: 1 – 2 classes

Time: 30 – 45 minutes

Materials:

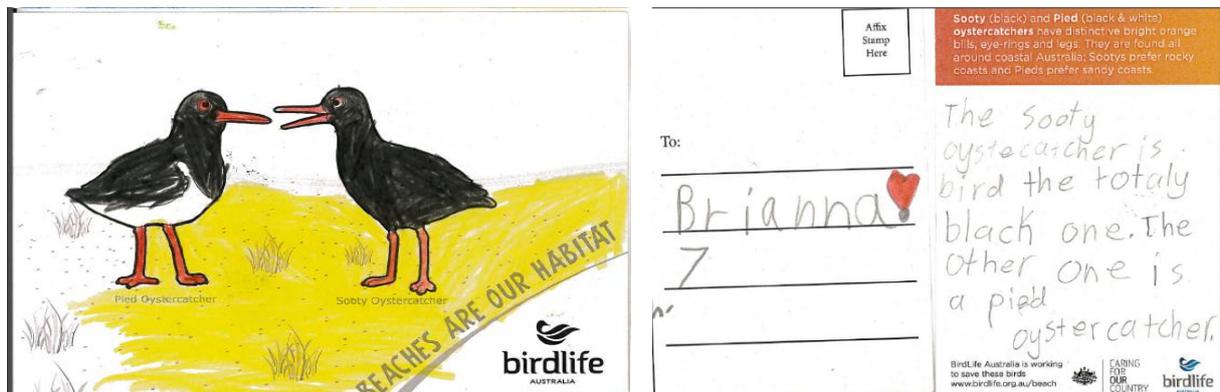
- Printed postcards (one per student)
- Coloured crayons/pencils/paint

Description: The aim of this activity is for students to share stories about their local coast, its biodiversity and explore the similarities and differences between different parts of coastal Australia. This stimulates students to consider the coastal environment from a range of perspectives.

After providing background information on beach-nesting birds via an Explore activity, brainstorm ideas or messages students could write on their postcards. Encourage them to focus on their local coastal environment or beach-nesting birds, and to include some of their own experiences. Each student is provided with one postcard that has a template of a particular beach-nesting bird species. They can colour in the bird(s) and then around the bird image they can add 'habitat', 'threats' or even ways to protect the birds.

You will need to connect with BirdLife Australia's Beach-nesting Birds project team who will link your school to another participating school with similar class sizes and based in a different geographical area (often interstate). The 'pairing' of schools enables students (and teachers) to go beyond the boundaries of their local area in exploring coastal issues. There may be similarities and differences between coastal areas related to where they are situated in Australia. This activity provides a wonderful opportunity for students to share their experiences and stories! It is important to set aside a short time to discuss the postcards the students receive in return so that they can explore variation between areas, or to highlight particularly interesting stories.

Contact hoodedplover@birdlife.org.au to obtain your class set of postcards!



Oystercatcher postcard created by Brianna, Age 7, Bruny Island District School, Tasmania.



EXPAND!

'Expand' activities take students further into some key ecological concepts, such as adaptation, camouflage and food webs, these concepts can be related to many different species and environments.

Activity 9 – Birds and Beaks

'Birds and Beaks' is a fun activity for students, and it provides them with the chance to gain an understanding of a number of ecological concepts such as adaption, generalist and specialist feeders, food webs and ecosystem balance.

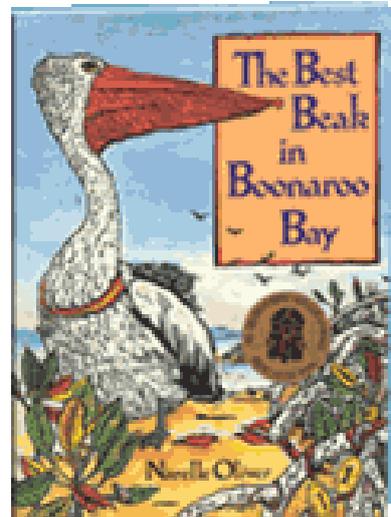
Time: 1 hour (this can be adapted by dropping the middle round of the relay race)

Age: Foundation – Year 8 (although be careful of equipment and younger kids when running: either adapt equipment, or cut out the running)

Supervision: This activity can be run with just one supervisor.

Materials:

- 'Birds and Beaks Tally Sheet' file under the 'Other Activities' folder on attached disc
- Tooth picks *
- Elastic bands *
- Macaroni *
- Paper clips *
- Twisters ^
- Bulldog clips ^
- Scissors (or clothes pegs) ^
- Spoons ^
- Cups (either per group or per student)
- The Best Beak in Boonaroo Bay (Optional)



* denotes food and ^ denotes beaks.

Background Information: Adaptation is the evolutionary process whereby a population becomes better suited to its habitat.

Ask the class: do you know how adaptation works? Adaptations are produced in a variable population by individuals with a better-suited form/attribute (or adaption)





reproducing more successfully, that is, by natural selection. Give an example of natural selection (*there are green and brown beetles in a population, the greens ones are better camouflaged against the leafy vegetation they eat. Therefore more of the brown beetles get eaten and there are more green beetles to breed and pass on the green gene*).

Description: This activity is a fun relay race, with the goal that each team is to collect as much 'food' as possible. The students are to be split into approximately 4 groups, with each member being given a cup and one kind of beak (start with each group getting one beak type) and each group is given an activity sheet (example attached in this kit). The food is then sprinkled in a circle and the students are given 5 minutes to collect as much food as possible. Students must all start behind the line (in a line is usually best) and one member from each team runs into the circle, picks up one piece of food, carries it back and the student repeats. No hands can touch the food and students can only pick up one piece at a time.

Once the first round has finished, get the students to count up the total number of each food type they collected during the round. Then record each team's results on a group tally sheet.

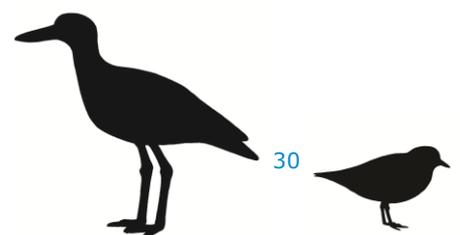
Time for discussion! Talk about which birds (beaks) can survive on a wide range of foods (we call these generalists), and which are a little more fussy (specialists). If a beak collects even amounts of most food types is it a generalist. If a beak favours one food type, it is a specialist and can only survive on that type of food. Ask the students what might happen if a particular food was wiped out of the ecosystem? If this food type is important to a specialist, the specialist beak will also be wiped out. Depending on the year level and topics of study, you can also bring in the idea that weeds or pest species are often generalists and are therefore able to survive in many habitats.

If you have time, get back into your groups and provide each with a different beak type and repeat the relay race. Write up the group's results again and then discuss your results, drawing on specific examples so students have a good understanding of the beaks and foods for the final round. Ask questions such as which bird/beak would survive best in a habitat with only one specific type of food? If we wanted a specific bird to visit your garden, which type of food would be best to have there?

In the final round, either give a different beak to each group member, or let the students choose their own beak. They should have learnt though the discussion which beak 'eats' which foods.

Through this exercise students have been learning about how birds have adapted their beaks to food that occurs in their habitat. For the older year levels it important to link this game, either now or at the beginning, to the process of adaption.

Additional Notes: A wonderful resource to use with this activity is the children's book 'The Best Beak in Boonaroo Bay' by Narelle Oliver.



Activity 10 – Creating a Beach Food Web Mobile or Wall Display

This activity makes a wonderful display in the class room, either on one wall or mobiles hanging from the ceiling.

Time: 30 minutes – 1 hour

Age: Foundation – Year 6

Supervision: This activity can be done with one supervisor, but if constructing mobiles an extra set of hands would be of great use.

Materials:

- White or coloured paper
- Picture from magazines
- Coloured pencils
- Scissors
- String or fishing line
- Sticky tape

If creating mobiles you also need:

- Coat hangers or sticks

Background Information: A food chain shows how nutrients and energy are passed from organism to organism within an ecosystem. We begin with producers (or autotrophs such as plants) which use the sun, via photosynthesis, to create energy. They are called producers because only they can manufacture food from inorganic raw materials. The second step in a food web is the herbivores (or primary consumers) which eat the plants, followed by the omnivores and/or carnivores (both secondary consumers) which eat plants and animals, or only animals, respectively. Each level of consumption in a food chain is called a trophic level. However, most food chains are interconnected: animals typically consume a varied diet, creating links between many organisms and forming a food web. A food web is a more representative example of the complexity of true ecosystems.

Description: Begin by discussing what a food chain and food web are, explaining the transfer of energy within an ecosystem. Students can then design and create their own coastal food web either as a class, in a small group or by themselves.

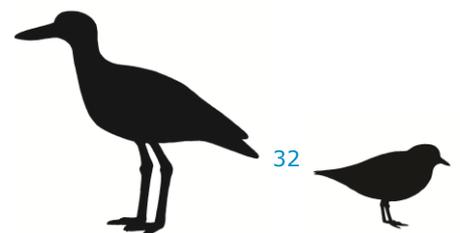
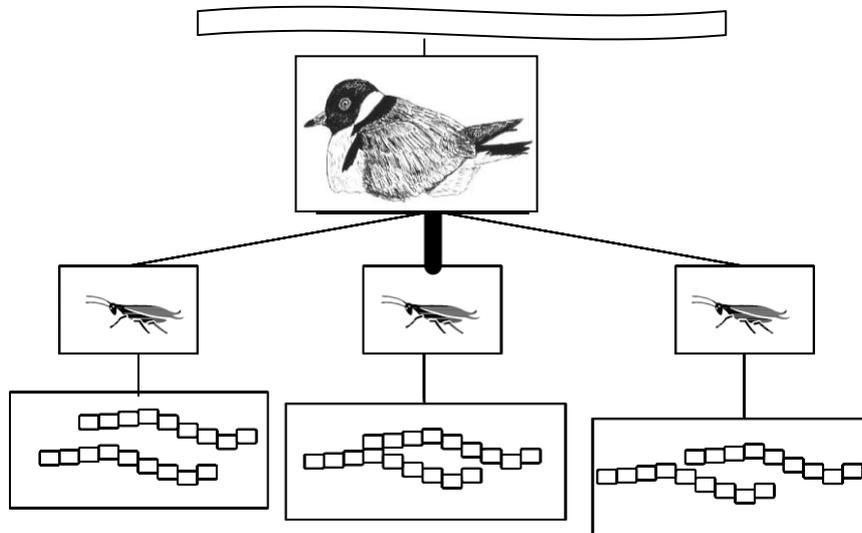
If a class is creating a food web for the classroom, each student can choose (or be given) a specific organism to focus on. Use your imagination to come up with wonderful





ways they can do these: a collage from magazines or use feathers the kids have collected. Then get the kids to work together to connect their organism creations with string. This works best with kids seated on the floor, providing some 'instructions' to the teacher on where to place the string.

If each student is creating their own food-web mobile, then a simpler process, such as drawing (or colouring prepared outlined pictures) is less time consuming. A stick or coat hanger is used at the top and string or fishing line to attached to each card/organism. It is best to punch a hole in the top of each card (either let the students do this or have them pre-done, depending on age and time). Then simply attach each card together with the string. It is good to get the kids to draw out their food web first and have a look, as these really don't work with complex food webs.



ACT!

Once students have learnt all about Australia's beach-nesting birds and the threats they face, 'Act' activities give students the chance to make a difference and help the coastal environment and the wildlife that call it home.

Activity 11 – Building Chick Shelters

NB: This activity focuses on Hooded Plovers and it most appropriate for southern Australia

Time: 15 – 30 minutes per shelter

Age: Year 4 – Year 8 (although with sufficient help/supervision younger students could also create shelters i.e. as a Foundation/Year 6 buddy activity)

Supervision: This activity needs as many helpers as possible (1 adult to every 4–6 students).

Materials (to make 1 chick shelter):

- 300–400mm x 400mm panel of 12 mm thick exterior plywood (x2)
- wooden crossbeam 25 x 25 mm section of 'garden stake' (x1)
- screws or nails (x6)
- Hammer or drill (depending on helpers available)
- Clear, waterproof outdoor decking stain
- Glue
- Paint (for message)
- Sand from local beach (optional)

Background Information: Hooded Plover chicks are incredibly vulnerable from the time they hatch to the time they can fly. This is a period of 35 days where they must roam around the beach finding food, and then run to cover to hide if there is danger around. The parents shepherd the chicks around and warn them of such dangers. The chicks use their amazing camouflage to blend in with their environment, hiding on the sand by crouching down low or near a clump of seaweed or a bit of driftwood. This makes them very prone to being accidentally crushed as they can't be seen. As they get older, they typically try to reach the vegetation in the dunes which provides them with more cover.

Chick shelters are used as a conservation tool to boost chick survival. By using chick shelters on specific beaches (wide beaches with little natural cover) we can provide a safe location for chicks to hide. The shelters provide artificial shelter for chicks to run and hide within when disturbed, and have the added benefit of providing protection from

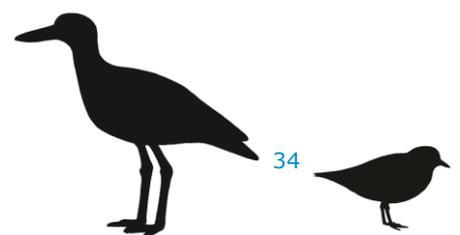




extreme temperatures. Designs have been tried and tested and the design used and presented in this kit is readily used by Hooded Plover chicks.

Instructions: Lay one piece of plywood on the ground and the other standing upright so they join to create a right angle. Then lay the crossbeam on the inside of the join and attach using screws/nails. Students can paint a message (such as 'chick shelter, please leave on beach') on the INSIDE of the shelter – it is great to get the students to brainstorm ideas for effective messages before they begin. They then paint the water-proof decking stain on the outside of the shelter and add some glue and sand to help camouflage the shelter. The sand is an optional step.

Once the shelters are ready, contact BirdLife Australia's Beach-nesting Birds team or a local Hooded Plover group to present them with the shelters. Please note: placement in the field can only be undertaken by trained local land managers or volunteers, or by a BirdLife Australia staff member.



Activity 12 – Changing with the Times: Photopoint monitoring

Time: On-going

Age: Year 4 – Year 9

Materials:

- Camera
- Map or aerial photograph of the site
- GPS if available
- notebook

Background Information:

Coastlines are extremely dynamic environments and are perfect for photopoint monitoring projects. Changes occur around tidal movement, sea levels, sand movement, dune erosion, seaweed and drift wood accumulation, as well as human and wildlife use. Photopoint monitoring is widely used in the environmental field to examine changes to a landscape over time. This is a great on-going project for schools to be involved in. In relation to beach-nesting birds, changes to the coastal environment can impact the suitability of habitat and the breeding success of the birds.

Instructions:

This project works best with schools located in coastal areas, so that on-going visits to the beach are easy to organise. This activity involves more investment in its initial set up and planning than other activities in this kit, and is designed to be a long-term exercise. Once it is established, the activity becomes easy to implement.

Firstly, you need to decide what it is you want to examine? What in particular might change over time on your local beach? For older students this is a wonderful opportunity for them to design a scientific project, considering what variables are important to measure, the type of data analysis they may need to perform, and consideration of how they will present their outcomes. Remember, it is important to consider how you will analyse your data during the planning stage, as this may affect how you set up the project.

A photopoint activity might fit in with another project that you begin, such as a coastal litter cleanup project – it is important that you contact the appropriate land manager during the planning phase and consider whether your project might have any negative impacts on the coast. For example, you don't want a class of students working in a nesting location during their breeding season.

Once your objectives are set you need to determine a couple of locations where photos can be taken. You need to consider:





1. What position should the camera be in to best capture the changes the students are examining?

2. Will students be able to relocate the photopoint on a future visit? To help with this, it is good to use a permanent structure such as a fence post or sign that will remain in place over time.

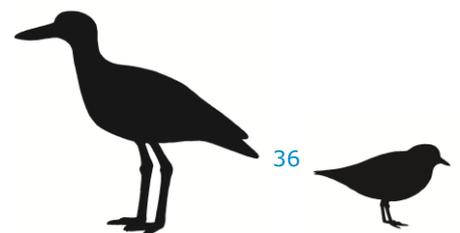
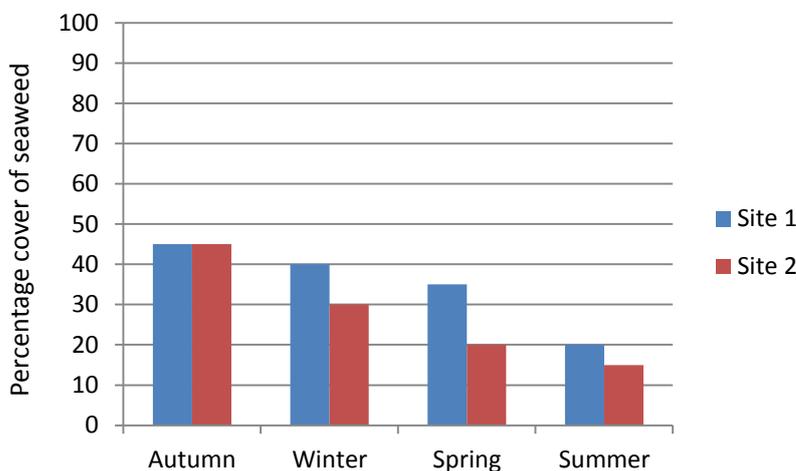
Even if you use a permanent structure, it is always important record the location, preferably with a GPS unit or on a map or aerial photo. This is a great thing for students to do, as they can investigate how the GPS works and learn about the associated satellite systems. Don't forgot to keep the height and angle of the photographs consistent over time.

It is important to keep information all in the one place, a school note book could be kept to record information, including the location, date, direction photo was taken (e.g. north east) and even the camera that was used, as zooms may differ between cameras.



Photopoint pictures examining short-term changes in sand movement and seaweed levels on a beach.

The way in which you analyse the photopoint data will also depend on what information you are collecting. If you are looking at changes in seaweed cover or weed cover over time, you can place a grid over the image and from this, students can determine the percentage of the area that is covered in seaweed – remember that the photos must be at the same scale. This information can be considered seasonally and from year to year as each class repeats the same process. Students can then decide which way they choose to present their results, examples include graphs or time lapse photo sequences.



Activity 13 – Awareness Raising Banners, Posters or Displays

Time: 30 minutes – 3 hours

Age: All

Supervision: One or two extra helpers, depending on age group

Materials:

- Posters can be made simply using paper and pencils, or cardboard and paint.
- Banners are constructed on large sheets of calico and painted with fabric paint.
- Be creative and use scraps of material, recycle things from school or other ideas that make these creations a little more eye catching than usual!

Background Information: These posters/banners can be used around the school, in coastal townships or at beach access points (although permission will be required from the local land manager) to help raise community awareness of threatened beach-nesting birds.

Craft activities are fun for students, and have the added benefit of sharing the students' ideas to the broader community. There are a range of variations of creating awareness raising messages around beach-nesting birds. While posters, dioramas and banners are obvious ones, others include painting conservation messages and bird images on calico bags (that are then replacing plastic bags in the community) or making felt badges, which can then even be sold at school fetes as a fundraiser for example.

Instructions: Before beginning this exercise, discuss potential uses of the materials created with the school community, BirdLife Australia, volunteers, coastal land managers, local council or even local shop owners. Posters could be used at beaches to inform users of nests or chicks, in shop windows to raise general awareness, at community events or school fetes.

Students can begin with brainstorming potential conservation messages and designs. They can then use a range of materials to create posters, signs or banners. Secondary students can incorporate this into an art subject and use more advanced techniques.

