



BIRD OF THE YEAR 2018

LIFE HISTORY OF AFRICAN BLACK OYSTERCATCHERS

LESSON PLAN 1



INTRODUCTION

The African Black Oystercatcher, *Haematopus moquini*, with its black plumage, red legs and feet and prominent red bill and eyes, is a distinct and charismatic coastal wading bird. This makes them ideal beach ambassadors for other coastal bird species. They are vulnerable to human disturbance, making them effective indicators of the health of the coastal ecosystem - if the Oystercatcher (or Oyks for short) population decreases, it may just be the case soon after with other coastal bird species. Breeding Oyks are found along the coasts and islands of South Africa and Namibia and non-breeding Oyks will even move as far as Mozambique and Angola to nursery areas or roosting sites. Their ideal habitat is sandy beaches and rocky shores or a bit of both.

Oyks are long lived, monogamous, slow breeding birds, breeding after age three to four and laying only one clutch per year usually at the same territory year after year. These characteristics point to them not making a quick recovery if their population should decrease. Oyks are sensitive to disturbance because of their nesting behaviour. They are ground nesting birds that lay their eggs in bare scrapes in the sand, pebbles or shingles or in shallow indentations in rocks. The nests are sometimes surrounded by a ring of shells and rocks. These well-hidden nests are hard to see and thus easily trampled by beach goers or other human activities. The nests are located about 30 meters off the high-water mark to prevent it from being washed away, but this also mean it is located where most beach goers will spend most of their time.

One to two well camouflaged eggs are laid between September and April, unfortunately just in time for the holiday season when most people enjoy the beach. The eggs are incubated by both parents for 27 to 39 days. Once the chicks hatch they are fed by both parents who in turn watch over the chicks and forage for food. Food consists of bivalves (e.g. mussels), limpets, polychaetes (worms), whelks and crustaceans. They actively feed day and night at low tide to take advantage of the exposed zone between the high and low water marks. Prey is carried whole to the nest where Oyks use their powerful neck muscles and long, flattened, chisel-shaped bill to pry open shells, e.g. the partially open valves of mussels and scissor out the flesh to feed to the chick. You might find a characteristic shell midden close to the nest where the birds discard their shells. The chicks are semi-precocial - that means they are born with their eyes open, their bodies covered in down feathers and are strong enough to walk around, but are not yet capable to find food by themselves. They are therefore still dependent on their parents for food.

Unlike other coastal birds, like gulls and cormorants, they are solitary nesters and do not nest in colonies which would offer more protection from predators. Instead, they make use of camouflage to hide their nests. They guard it vigilantly, distracting the threat rather than attacking the predator like gulls do. Eggs and chicks are also well camouflaged. Chicks will

respond to their parents' alarm call (a sharp pic-pic call) by either hiding (under a bush, rocks and cracks) or freezing in position when there is no cover. The parent will then distract the predator with a distraction-lure display where they pretend to have a broken wing, while making no sound, to divert attention away from the chick. They may also perform a false brooding display (pretend to sit on a nest) to divert attention away from the real nest.

Chicks fledge after 35 – 40 days and leave the parents' territory after two to six months. Juveniles migrate to nursery areas in Namibia and Angola for two to three years before returning.

VOCABULARY

Breeding: the mating and production of offspring by animals.

Camouflage: in this case, the use of colouration and patterns to make their eggs hard to see.

Colony: a large group of individuals of one or more species of bird that nest or roost close to each other at a particular location.

Distraction Lure Display: bird pretends to have a broken wing to lure the predator away from their chick or nest.

False Brooding Display: bird pretends to sit on a false nest to lure the predator away from the real nest.

Fledge: after a chick's wing feathers are developed enough for flight.

High-water Mark: the level reached by the sea during each high tide or by a lake or river in time of flood.

Incubate: a bird sits on eggs to keep them warm until the chicks' hatch from them.

Intertidal Zone: the area between the low-water and high-water marks.

Life history: (or lifecycle) is the traits of growth, survival and reproduction (breeding) events typical for a member of a species.

Life history strategy: collection of life history traits (numbers of offspring, timing of reproduction, amount of parental care etc.) that allow a species to best use its available resources to maximize offspring survival and reproduction in the environment it occur.

Low-water Mark: level reached by the sea during each low tide or by a lake or river at its driest point.

Monogamous: to stay with one breeding mate for life.

Nursery: area where young birds are raised or congregate.

Roosting: settle for rest or sleep.

Semi-precocial: chick born with down feathers and open eyes that can walk and feed but is not able to look after itself or forage.

Shell Midden: heap of clam, oyster, whelk, or mussel shells that are left in the surrounding area of a nest.

Territory: area that a breeding pair actively defend from other birds of the same kind.

Tides: because of the gravitational pull of the moon on the sea water, the sea level move from a high-water mark to a low-water mark and back again around every 12 hours.

Waders: birds found along shorelines and mudflats that wade (slowly move through the water) to forage for food in the mud or sand.

AIM AND PURPOSE OF LESSON

The aim of this lesson plan is to introduce students to the life history of African Black Oystercatchers. The purpose is for students to learn about the Oyk's life history strategy that has evolved over time to a specific ecosystem to ensure successful reproductive offspring. Unfortunately, their strategy is not always ideal in the modern world dominated by humans.

DURATION OF LESSON

Approximately 60 minutes

MATERIALS NEEDED

All material (except the videos) are downloadable from the BirdLife South Africa website: <http://www.birdlife.org.za/documents/bird-of-the-year>

The teacher will need:

1. Lesson Plan 1 – *Life History of African Black Oystercatchers*
2. A computer with internet connection to view the suggested videos.
3. Fact Sheet 1: *African Black Oystercatcher*
4. Video 1: *Facts about the Oystercatcher* (1:46) <https://youtu.be/KJmqDAeEtSM>
5. Video 2: *A pair displaying on a large boulder* (0:26)
<https://www.hbw.com/sites/default/files/ibc/v/converted/68362.mp4>
6. Video 3: *Adult finds a mussel, scissors the flesh out of the shell and swallow it* (0:26).
https://www.hbw.com/sites/default/files/ibc/v/converted/498189/Haematopus_mog uini_BHD_mp4_sd_1487931923.mp4
7. Video 4: *Black Oystercatcher Hatching - Oregon Coast Aquarium* (watch from 1:00 min for duration of 1 min) <https://youtu.be/U1zL4V6yYdM>
8. OPTIONAL – projector and sound system to watch the videos.
9. Answer Sheets 1 Appendix A (found at the end of this lesson plan).
10. Questionnaire 1 Appendix B (found at the end of this lesson plan).
11. Game-show game material: Balls or any other object that can be thrown into a container e.g. crumpled paper; any large container, e.g. waste basket, into which the objects can be thrown.

The Students will need:

1. Fact Sheet 1 – *African Black Oystercatcher*
2. Questionnaires 1 in Appendix B (found at the end of this lesson plan).
3. Pen and paper

OBJECTIVES AND OUTPUTS

The student will:

- Discuss what they already understand about the life history strategy of Oyks.
- Watch the videos on Oyks.
- Read up on Oyk life history.

- Discuss what they have learned from the videos and reading material in their allocated groups.
- Report back to the teacher in their allocated groups.
- Have a better understanding of the concepts of the life history strategy of Oyks.

PROCEDURE

1. [Duration 4 min] The teacher should read through the introduction of Lesson Plan 1 to prepare for the lesson. [OPTIONAL] The teacher (or students) can also choose to read the introduction to the class, but this is not necessary.
2. [Duration 5 min] Begin the lesson with an entry task where students must think and discuss what they know about Oyks. Ask the following questions to the whole class and give them a few opportunities to raise their hands and answer the questions (it is not important that they get the answers right at this stage):
 - a. Have you ever seen Oyks? If so where?
 - b. Can you describe what they look like and what they sound like?
 - c. Do you believe Oyks are important birds?
 - d. Can you name other birds that also live on the coastline?
 - e. Can you guess how long Oyks can live for? ([longest living Oyk is recorded as having lived for 29 years](#)).
4. [Duration 6 min] Divide the students into three discussion groups and hand out Fact Sheet 1: *African Black Oystercatcher* to each group. Allow them 5 minutes to read through the Fact Sheet and discuss it amongst themselves.
5. [Duration 2 min] Set up the projector / TV / Computer and watch Video 1: *Facts about the Oystercatcher* (1:46). As they watch ask them to focus on the following, keeping in mind what they have learned from the Fact Sheet:
 - a. The video is taken at the Isle of Mull in the UK and focuses on the Eurasian (Pied) Oystercatcher. Closely look at how the Oyks in the video look and behave so that you can describe it later.
 - b. See if you can notice the differences between the Eurasian Oyks and the African Black Oyks.
 - c. Notice the number and colour of the eggs and how long they are incubated.
 - d. What do they eat and how do they manage to eat it?
 - e. Try to remember the details of what you see, read and hear.
3. [Duration 5 min] In their groups, allow the students 5 minutes to discuss what they have learned and remembered from the video. Ask them to write down what they remembered and discussed.
4. [Duration 15 min] Game Show Game: Students will now answer questions based on the video. Each group should sit together and choose one person that can throw well. Place a waste basket or any open container in the middle of the groups so that it is equal distance away from the throwers. Just like in a game show, the group that answers the most questions correctly wins. As soon as a group knows the answer to a question, the thrower should throw the ball in the basket to indicate that they have the answer. The group that manages to get the ball in the basket first, can answer the question. If the group answers wrong, the other groups can have a turn to throw and answer until the correct answer is given. They can use the Fact Sheet and the notes

- they made during group discussions to remind them of what they have learned. Use Answer Sheet 1 to ask the questions and to ensure that the answers are correct.
5. ALTERNATIVE: [Duration 15 min] Use Answer Sheet 1 instead to ask the students specific questions based on the video. Or hand out Questionnaire 1 and give them 15 minutes to answer the questions in their groups or individually.
 6. OPTIONAL: [Duration 3 min] Charades Game: In their groups, allow each group to watch one of the following three Oyk videos (ensure that the other groups cannot see what they have watched):
 - a. Group 1: Video: *A pair displaying on a large boulder* (0:26)
 - b. Group 2: Video: *Adult finds a mussel, picks the flesh out of the shell and swallows it* (0:26).
 - c. Group 3: Video: *American Black Oystercatcher hatching - Oregon Coast Aquarium* (watch from 1:00 min for duration of 1 min)
 7. [Duration 10 min] Charades Game continued: Allow each group to perform what they have seen and allow the other groups to guess what they are performing.
 8. [Duration 2 min] Watch all three videos again with the whole class so that they can see what their fellow students have illustrated through their performance.
 9. [Duration 5 min] Lastly, allow the students to go back to their seats and end the lesson with a few questions:
 - a. Will they be able to identify a African Black Oystercatcher now when they see one?
 - b. Based on what the students know now, how do they think can the knowledge of the Oyks life history help to management and conserve the species?
 - c. Can they think of a few birds that have a similar (White-fronted Plover, Curlew Sandpiper) or different (Kelp Gull, Cormorants) life history as the African Black Oystercatcher?

APPENDIX A

ANSWER SHEET 1: THE AFRICAN BLACK OYSTERCATCHER LIFE HISTORY

1. What are the physical differences between the African Black Oystercatcher and the Eurasian Oystercatcher (Common Pied Oystercatcher)?

The African Black Oystercatcher: Pinkish-red legs and feet; Red bill and eyes with an orange eye ring. Black plumage.

Pied Oystercatcher: Pale-pink legs and feet, orange-red bill. Eyes are red with bright red eye ring. Black and white plumage.

2. Where does the Eurasian Oystercatcher breed (in this video)? Do they occur in South Africa?

It breeds on the Isle of Mull in the UK and other coastlines along the UK. They do occasionally visit South African shorelines, but not to breed.

3. What is a group of oystercatchers called?

- a. A storm
- b. A swarm
- c. A parcel
- d. A collection
- e. A tribe

4. The Eurasian Oystercatcher will start to breed by age four to five. When does the African Black Oystercatcher start breeding?

The female starts to breed by age 3 and the male by age 4.

5. How many clutches (breeding attempts) per year will both Oyk species have?

One

6. Both Oyk species lay their eggs in a similar type of nest. What does this nest look like and where is it located?

Nests are bare scrapes in the sand or a shallow indentation in a rock, surrounded by a ring of shells and rocks above the high water mark.

7. True or False: Oyks lay 1 – 2 black eggs with white speckles.

False. They lay 1 – 2 cream eggs with brownish speckles

8. Both adults incubate the eggs. The Eurasian Oystercatchers incubate their eggs for 24 – 27 days how many days does the African Black Oystercatchers incubate their eggs?

Choose the right answer.

- a. 24 – 27 days
- b. 27 – 39 days
- c. 30 – 50 days

9. What type of display were the Oyks performing on the rocks? Can you name any other displays (look in the Fact Sheet)?

They were performing Piping Displays to establish territory for breeding. Other displays you will see are Butterfly Flights which are performed pre-breeding and during breeding periods and False Brooding displays which they use when threatened to divert attention away from the real nest.

10. What do they eat?

They don't eat oysters but rather bivalves (mussels), limpets, polychaetes (worms), whelks, insects and crustaceans (crabs)

11. How do Oyks use their long bills to get at and eat their prey?

They use their bills to smash or pry open shells and use their bills like tweezers to pick out worms and insects in the sand or to scissor out the flesh from bivalves.

APPENDIX B

QUESTIONNAIRE 1: THE AFRICAN BLACK OYSTERCATCHER LIFE HISTORY

1. What are the physical differences between the African Black Oystercatcher and the Eurasian Oystercatcher (Common Pied Oystercatcher)?

2. Where does the Eurasian Oystercatcher breed (in this video)? Do they occur in South Africa?

3. What is a group of Oyks called?
 - a. A storm
 - b. A swarm
 - c. A parcel
 - d. A collection
 - e. A tribe

4. The Eurasian Oystercatcher will start to breed by age four to five. When does the African Black Oystercatcher start breeding?

5. How many clutches (breeding attempts) per year will both Oyik species have?

6. Both Oyik species lay their eggs in a similar type of nest. What does this nest look like and where is it located?

7. True or False: Oyiks lay 1 – 2 black eggs with white speckles.

8. Both adults incubate the eggs. The Eurasian Oystercatchers incubate their eggs for 24 – 27 days how many days does the African Black Oystercatchers incubate their eggs? Choose the right answer.
 - a. 24 – 27 days
 - b. 27 – 39 days
 - c. 30 – 50 days

9. What type of display were the Oyks performing on the rocks? Can you name any other displays (look in the Fact Sheet)?

10. What do they eat?

11. How do Oyks use their long bills to get at and eat their prey?