Teaching materials for the „conservation of biodiversity"

Title: Importance of the Salt Marsh as exemplified by the Brent Goose

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Grade: Secondary school

Type of material: Texts with information about salt marshes and the Brent goose with follow-up exercises

Aim: establish awareness of the significance of salt marshes and migratory birds, awake interest

Exercises for students:

1.   Read the text about the salt marsh and the Brent goose.

2.   Create a profile for the Brent goose.

3.   Take notes about the importance of the salt marsh for Brent geese.

4.   In teamwork: compare results, think about which animals, besides the Brent goose, the salt marsh could be important for.

5.   Results of the teamwork should be presented in class. The teacher should give additional information and ask questions about the significance of the salt marsh.

examples of questions to be asked by the teacher:

- What would happen if salt marshes didn't exist any more?

- Why is it necessary to protect salt marshes?

- Why are humans not allowed to enter all parts of the salt marsh?

Additional information for the teacher:

http://en.wikipedia.org/wiki/Salt_marsh (last changes 15. Nov. 2013)

http://en.wikipedia.org/wiki/Brant_Goose (last changes 31. Dec. 2013)

Literature:

No Author, 2014, Ringelgans; http://de.wikipedia.org/wiki/Ringelgans (from 11.01.14)

Bund für Umwelt und Naturschutz Deutschland e.V. (BUND) – Friends of the Earth Germany, no year, Die Ringelgans – zu Zehntausenden auf den Halligen http://www.bund.net/themen_und_projekte/meeresschutz/portraets_leitarten/ringelgans/(from 11.01.14)

Nationalpark Wattenmeer, 2010, Salzwiese; http://www.nationalpark-wattenmeer.de/natur-des-wattenmeeres/lebensraeume/salzwiese (from 11.01.14)

<u>The Salt Marsh</u>

On the North Sea coast there are areas called the Wadden Sea. These areas are flooded (high tide) and uncovered by the water (low tide) twice a day. At low tide it is possible to see the ground of the Wadden Sea – the intertidal mudflats. Between the intertidal mudflats and the land, salt marshes create a kind of border. The whole Wadden Sea extends from the coasts of the Netherlands along the western coast of Germany up to the middle of Denmark's western coast.

Even though the salt marsh is located inland of the Wadden Sea, it is flooded regularly. That means that the plants which live there need to be able to cope with the salty water of the North Sea. The plants have evolved special skills so the salt doesn't make them dry out. (If you drink salty water your thirst won't be quenched – far from it! – you'll get more thirsty.) One special plant, the Saltwort, is able to stay under water for a few hours while the Wadden Sea is flooded.

Salt Marsh in Westerhever - Photo: Lennard Lüdemann

The further you move towards the land, the less often the plants are flooded and the less well they are adapted to salt. Nevertheless, many different plants can still be seen; this diversity is important because insects have adapted to these and so are specialists which only live in the salt marshes.

The salt marsh of the North Sea is also very important for many birds. Because people are not allowed to enter all parts of the salt marsh, birds have sufficient space and quiet and protection to hatch their eggs and to raise their young. Because many birds live in a different place on the earth at different times of the year (migratory birds), they often fly several thousand kilometers before they reach the salt marsh of the North Sea to find a resting place from their long flight. Some birds stay

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there during winter, others leave after a while for warmer parts of the world. And some of them even go as far as the south of Africa.

All the birds that only take a break on the salt marshes, use the time to eat as much food as possible to give them enough energy for their next flight.

As you can see, salt marshes are very important to many different animals and plants. If the marshes didn't exist, all these species, which have adapted to conditions here, would lack an important habitat.
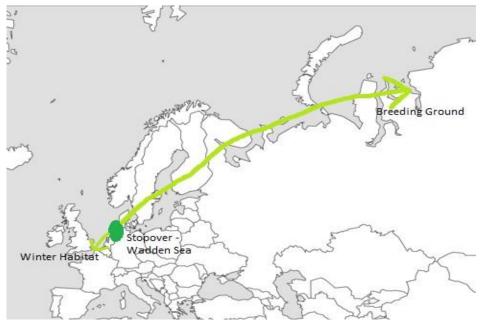
Brent Goose – the little ones among the geese

Flying Brent Goose - Photo: Thomas Kraft

Brent geese are migrant birds. This means they are birds that live in different places on earth at different times of the year. They breed on the coast of North Siberia, where they lay about three to five eggs. After 26 days the eggs hatch. At the end of the summer all the Brent geese leave North-Siberia and reach the Wadden Sea and the salt marshes at the end of September. They use the marshes as a resting place where they feed especially on seaweed and the grass of the salt marsh. Brent geese are vegetarians.

In November they move on to the milder climate on the coasts of England and France, where they spend the cold time of the year. As soon as winter is over, the Brent geese come back to the salt marshes and the Wadden Sea, where they now need to build up fat reserves for their long flight back to their breeding ground. The journey back to North-Siberia starts at the end of May. The distance they cover in this journey can be up to 5000km. To survive this distance, the geese need to feed a lot so they have enough energy reserves, and the salt marshes on the coasts of Denmark, Germany and the Netherlands have an important part to play here. Even though the plants on the marshes are salty, the Brent geese are able to eat them. On this marsh area it is possible to see thousands of Brent geese feeding within the protection of these huge groups. When they are are ready to make their flight back to North Siberia, they weigh about 1500g. Brent geese can grow older than 20 years and they have just one partner all their life, as long as this partner doesn't die. Although they are geese, they are not as big as other geese, being about 60 cm long and having a wingspan of 115 cm. In addition to their size, it is the white ring around their throat which helps distinguish Brent geese from other geese.

Flight Direction Of Brent Geese

PROFILE

name:

Brent Goose – Photo: Andreas Trepte

body height:

wingspan:

weight:

food:

number of eggs:

identifying features:

breeds in:

rests in:

overwinters in: