Fact File : Natterjack Toad

(*Epidalea calamita*)

Status: Rare and protected
Life span: up to 15 years
Activity: nocturnal

Fun fact:
They are the UK's loudest amphibian and can be heard up to 1 mile away!

Habitat:

- Restricted to sand dunes, upper salt marsh and sandy heath
- Need warm, open and shallow pools to breed
- Need bare sand to burrow to hibernate

Did you know?
The UK has lost 75% of its natterjack breeding sites in the past 100 years. Cumbria contains 50% of the UK's sites.

Adaptations:

- Yellow stripe down its back for camouflage
- Poisonous glands to deter predators
- Shorts legs to run for prey and to dig to burrow
- Tadpoles develop really quickly to avoid predation

Threats:

- Overgrowth of scrub, climate change and lack of grazing on natterjack habitat
- Habitat loss and fragmentation from development
- Competition

Mini case study

Mawbray Banks, Silloth, winter 2020. Natterjack populations were isolated and at threat from habitat loss. Three new pools of different sizes and depths were created using machinery and sand surrounding pools was exposed. A herd of cattle were introduced to keep scrub at bay and to keep grassland and dune heath healthy. Natterjacks returned for successful breeding in two of the pools in Spring 2020. Cattle have GPS collars on to monitor and control their grazing.

Fact File : Dune Helleborine

(Epipactis dunensis)

Status: Nationally scarce and rare orchid

Life span: Biennial

Activity: Flowers between July and Aug

Fun fact: They can sometimes grow up to 1 metre tall!

Did you know?
The Dune helleborine is a red listed species and can only be found in 4 counties. A strong hold is found at Sandscale Haws National Nature Reserve.

Habitat:

- Restricted to sand dunes and some woodlands
- They live on the edges of dune slacks (damp areas)
- Thrive near creeping willow

Adaptations:

- Yellow flowers attract pollinators
- Ability to self-pollinate as well
- Symbiotic relationship with fungi associated with the willow to gain nutrients
- Can grow tall to outcompeted scrub

Threats:

- Habitat loss and fragmentation
- Overgrowth of scrub and vegetation outcompeting the orchid in dune slacks
- Isolation of species

Mini case study: North Walney, 2020. Many dune slacks have suffered from increased scrub growth and nutrient enrichment, affecting flora diversity. Scrub and larger bushes were removed by hand with volunteers and burned on site, exposing the areas around the dune slacks and encouraging cattle to go in and graze. Follow up assessments showed growth of marsh helleborine, round-leaved wintergreen, northern marsh orchid and other specialist species which had not been recorded in the area before.

Right: scrub removal in progress and northern marsh orchid regrowth

Fact File : Northern Dune Tiger Beetle

(*Cicindela hybrida*)

Status: Rare
Life span: 2 years (6 weeks as adults, the rest as larvae)
Activity: day-time predators

Fun fact:
Northern dune tiger beetles are one of the fastest insects in the world!

Habitat:

- Early successional dunes
- Bare sand with some sparse vegetation
- Different topography for laying eggs and for burrowing

Adaptations:

- The larvae have a flat head to burrow in sand and hooks on its back to stick to the burrow walls
- Adults have large mandibles to catch their prey on the sand
- They have great eye sight to see their prey when they run very quickly
- They only operate at certain temperatures, so will burrow in sand, fly or find shade in the marram grass to cool down.

Did you know?
Northern dune tiger beetles are only found in two locations— Drigg in Cumbria and the Sefton Coast

Threats:

- Loss of habitat
- Overgrowth of scrub and vegetation
- Increase in invasive species

Mini case study

Drigg dunes, 2020. Drigg dunes is a protected stretch of coastline. Japanese Rose, a non-native invasive species has come onto the site, threatening dune habitats as it grows quickly and outcompetes native species. Rosa has been removed by diggers and herbicide has been applied directly to the stem to avoid damage to other species. Follow up management will be needed to keep the invasive species at bay. This work has happened at Haverigg dunes over 3 years and the Rosa rugosa has stopped growing.

Fact File : Rabbit (*Oryctolagus cuniculus*)

Status: Common
Life span: 3 years
Activity: nocturnal grazers

Fun fact: Rabbits were brought into the UK by the Normans in the 12th century. They were farmed on many sand dunes in Cumbria. These are known as rabbit warrens.

Did you know?
By munching on vegetation, rabbits keep plant growth fairly low, which can help some of our rare native plants flourish. By burrowing, they also keep bare sand moving through the dune system.

Habitat:

Rabbits live in a range of habitats: grassland, farmland, wetlands, woodlands, heathlands and in towns and gardens. They also live on sand dunes too!

Adaptations:

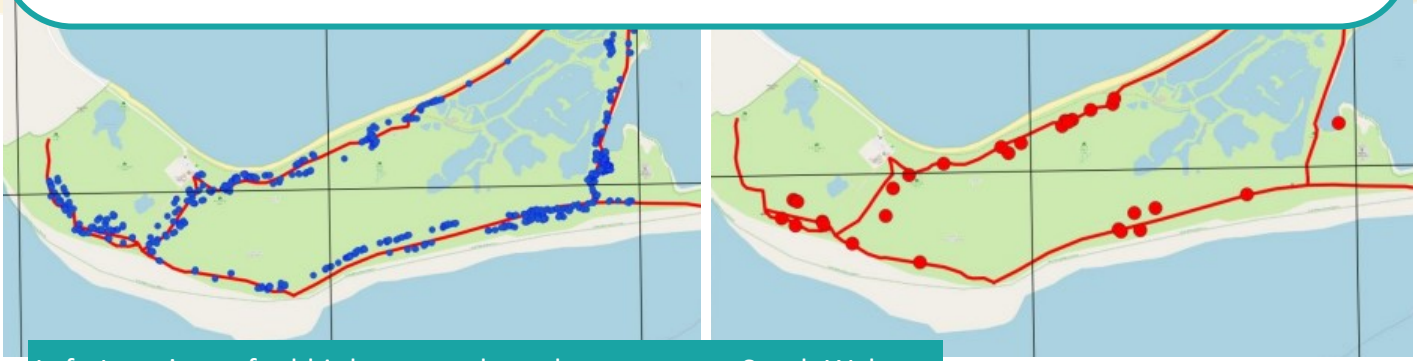
- Long ears to detect faint sounds
- Eyes high up on the sides of their heads and a flexible neck allowing them to see predators
- Strong legs to run and to burrow
- Brown fur to camouflage

Threats:

- Overgrowth of scrub and vegetation on dunes makes it hard for them to burrow
- Man-made introduced disease myxomatosis and Rabbit hemorrhagic disease causing large population declines in isolated areas like dunes

Mini case study:

A survey was conducted during 2020 on the rabbit populations at Drigg and South Walney. Burrows and sightings were recorded over 8 days along a transect. It was found the population on both sites was very low (in the tens rather than hundreds.) The large amounts of burrows and lack of sightings indicate recent disease outbreak. A further study is to be completed in 2023 to see if exposing bare sand for dune restoration work has improved habitat for rabbits to burrow, hopefully boosting rabbit populations.



Left: Locations of rabbit burrows along the transect at South Walney
Right: Locations of sightings along the transect at South Walney

Case Study : South Walney Nature Reserve

History:

- Farming was carried out by the monks of Furness Abbey
- Extraction of salt and gravel in 19th and 20th century
- The site was also used as a military encampment and defense during WW1 and WW2

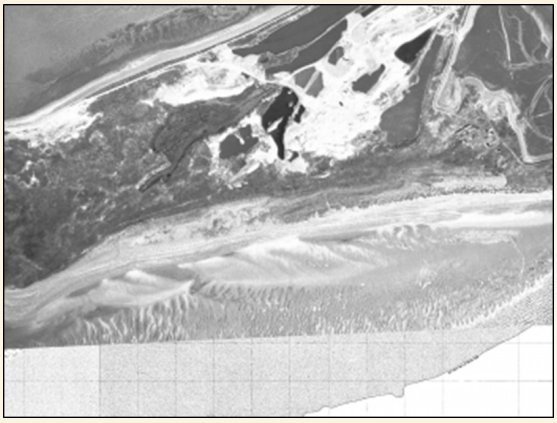
Black-headed gull

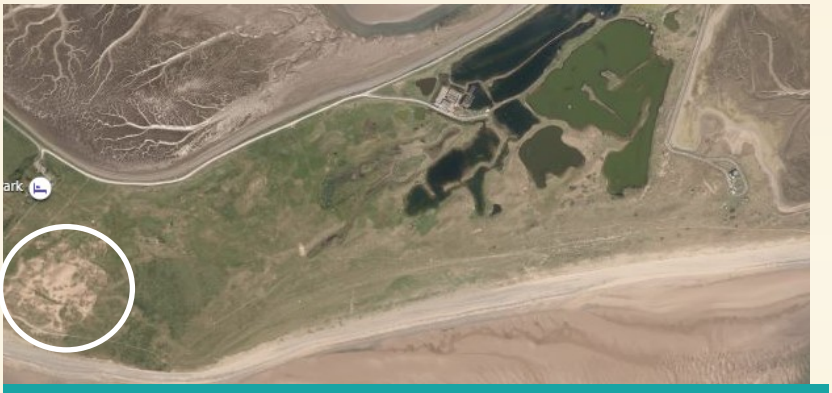
Nature:

Over 250 bird species live here, a colony of over 500 seals and the reserve has many special habitats including sand dunes, shingle and salt marsh home to an array of plants including thrift, yellow horned poppy and the Walney Geranium.

The problem:

A colony of over 10,000 gulls lived here. Overtime, the colony declined due to predation and habitat loss. Climate change, loss of rabbits and nitrification from the gulls caused increased growth of bracken and grasses and loss of open sandy dunes. This reduced breeding areas for ground nesting birds and threatened biodiversity by outcompeting dune-loving plants.





Ariel views of South Walney showing changes in bare sand from 1960 to today. Circled area shows area of recent restoration work.

The solution:

During 2015 as part of Dunes of Barrow project, diggers opened up 4 ha of bare sand by removing the top layer of turf and nutrient rich soil. They used the turf to provide shelter around ponds for overwintering birds. This was followed up by further turf stripping and work has continued as part of the Dynamic Dunescapes project in 2020. Surveys of vegetation were undertaken before and after. The plant species have since doubled and the survey provided evidence that the area has returned from a grassland to a sand dune system.

Left: Turf stripping taking place in 2015 removing bracken
Right: restored sand dune area in 2020