

Introduction

Large numbers, over half of the world's birds, migrate. They do this twice a year in spring and autumn. Most of the birds that arrive in the spring in the UK and Isle of Man travel from Africa.

They make these epic journeys covering thousands of miles over land, deserts and oceans. It may seem odd that they risk many hazards such as storms, collision, habitat loss, pollution and climate change. Along with being hunted and trapped, crashing into man-made objects including high rise buildings, wind turbines and oil rigs, birds encounter many threats along the way. They risk dehydration, starvation, exhaustion and predation but the rewards for those who survive these perilous journeys outweigh the danger.

Birds time their migration so that upon arrival in the UK and Isle of Man there is an abundance of food. The weather is just right for catching and eating insects and the temperatures are not too hot or too cold. It is the perfect time for them to find a mate, make a nest and raise their chicks. Raising chicks is the most important thing for birds, so their species do not die out. At the end of the summer season as autumn arrives and when the chicks have fledged (left the nest), the daylight hours shorten, the insects start to disappear and the temperatures start to cool. This marks the end of nesting season and the birds know it is time to return to Africa where it is much warmer, there is more food and daylight hours are long enough for them to easily survive.

Birds instinctively know when the time is right. Daylight length changes, temperatures change and food becomes harder to find. Before they go they spend weeks fattening up so they can fly long distances without having to stop. Some fly for several days without stopping, the longest recorded non-stop flight is 11,000km (6835 miles). Some birds even bulk up their heart muscles so they can pump more oxygen round their bodies. Immediately before they leave, they shrink their digestive organs to reduce their flying weight! When the wind is in the right direction and the departure day arrives, many birds wait until nightfall. As soon as it is dark they begin to leave, usually in flocks. There is safety in numbers, which is why they travel in flocks and this way it can also help them conserve energy. By flying at night, it is much cooler and there are fewer predators. Birds of prey are roosting (sleeping); the only predators would be owls that prefer to hunt small mammals.

Scientists have discovered that birds use flyways, so species travel the same routes year after year. They have also discovered some of the secrets of migration, finding out that birds navigate using the moon, stars, the sun and landmarks. They also use the earth's magnetic field and their sense of smell. However they don't fly in a straight line. Birds fly with the winds and will avoid head and side winds. This means they drift to help conserve energy and at certain places along the route they change course to ensure they finish where they want to be.

Birds are incredible and as technology develops and more birds are able to be satellite tracked their secrets of migration will continue to be discovered.



Record-breaking migrations

Lightweight tracking devices let us plot the routes of migratory birds in astonishing detail

Longest (non-stop)

Bar-tailed godwit
One bird covered 11,500 kilometres over the Pacific in just eight days

Shortest

Blue grouse
Descends just 300 metres down pine-covered hills in North America (range shown)



Longest (with rests)

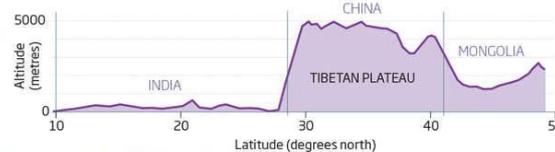
Arctic tern
An intrepid individual covered almost 96,000 kilometres in just under a year

Highest

The bar-headed goose
The highest-flying individual reached almost 7300 metres above sea level when crossing the Himalayas (see below)



On their twice-yearly migration, bar-headed geese have to cross the Tibetan plateau, some 5000 metres above sea level



Average elevation for 38 geese tracked with GPS-enabled devices

Migration

Using the information above and the maps on the following pages see if you can answer the following questions



Question 1: What is migration?

Question 2: Why do birds migrate?

Question 3: How do birds know when it is time to migrate?

Question 4: Why are birds able to migrate better than other animals?

Question 5: How do birds know which way to go on migration?

Question 6: What dangers might birds face on migration?

Question 7: What do you think the best time of day is for birds to migrate, day or night? Why do you think this is?

Question 8: Can you name any birds that migrate?



Answers

Question 1: Migration is the seasonal movement of birds (and animals) from one place to another.

Question 2: They time their migration to ensure there is enough food available for when they are raising their chicks.

Question 3: Migration is seasonal (usually spring and autumn). This means things such as daylight, day length, temperature and food availability all trigger migration.

Question 4: Ability to fly, their metabolic abilities, lightweight skeletons, lung capacity, air sacs

Question 5: Some birds it is instinctive. For example, the Cuckoo. The female bird lays her egg in a host nest, a nest of another bird. When the Cuckoo chick hatches, the other bird raises it as its own chick. When the time is right and the young Cuckoo has grown enough and has left the nest, it sets off on a huge journey on its own all the way from the Isle of Man to Africa where it will spend the winter. Other birds, such as Geese and Swans follow the parent and adult birds back to their wintering grounds. Birds use things like landmarks, the sun, the moon, stars and the earth's magnetic field to tell them that they are going the right way.

Question 6: Predators such as Buzzard, Hawks, Falcons and other birds of prey. Predators such as Cats, if a bird has landed to rest, domestic and feral cats pose a serious threat to the bird because it is tired and hungry from a very long journey. Dehydration, starvation, difficult weather conditions, man made changes to the use of their resting sites, windmills, oil rigs, tall glass buildings. Habitat loss, pesticides, hunting and trapping and climate change also pose huge and severe threats to migrating birds.

Question 7: Many birds migrate at night. The air is much cooler, so birds don't need to stop as much and there are fewer predators at night. Many predators, Buzzard, Hawks, Falcons are resting at night so don't pose as much threat to migrating birds.

However, some birds, such as Geese migrate in large groups (Skeins) during the day. By travelling like this in large groups, the air currents help the birds

Question 8: Swift, Swallow, House Martin, Chiffchaff, Willow Warbler, Turtle Dove, Wheatear Arctic Tern, Little Tern, Manx Shearwater are just a few summer migrating birds. Pale Bellied Brent Goose, Whooper Swan, Bewick Swan Fieldfare, Redwing, Waxwing are just a few winter migrating birds.

Check www.rspb.org.uk to find out about migrating birds

Migration



Task 1

Look at the birds below and Map 3 to see which area of Africa the birds migrate to and from.

Task 2

Use Map 1 which shows the migration routes and map 2 which shows the outlines of the countries. List the Countries and the seas the birds cross to complete their epic journeys.

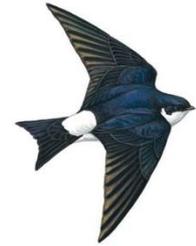
E.g. Yellow Wagtail. Starting point Senegal. It flies round the coast of Mauritania, Western Sahara, Morocco over the Mediterranean Sea, over Spain, France and the English Channel to finish in England.



Wheatear
Visits from South Africa
Mediterranean area
Starting point Senegal



Swift
Visits from South Africa
Starting point the Congo



House Martin
Visits from Africa
Northern Steppe & Savanna areas
Starting point Angola



Willow Warbler
Visits from South Africa
Mediterranean area
Starting point Botswana



Swallow
Visits from South Africa Steppe area
Starting point South Africa



Turtle Dove
Visits from Steppe area
Starting point Mali



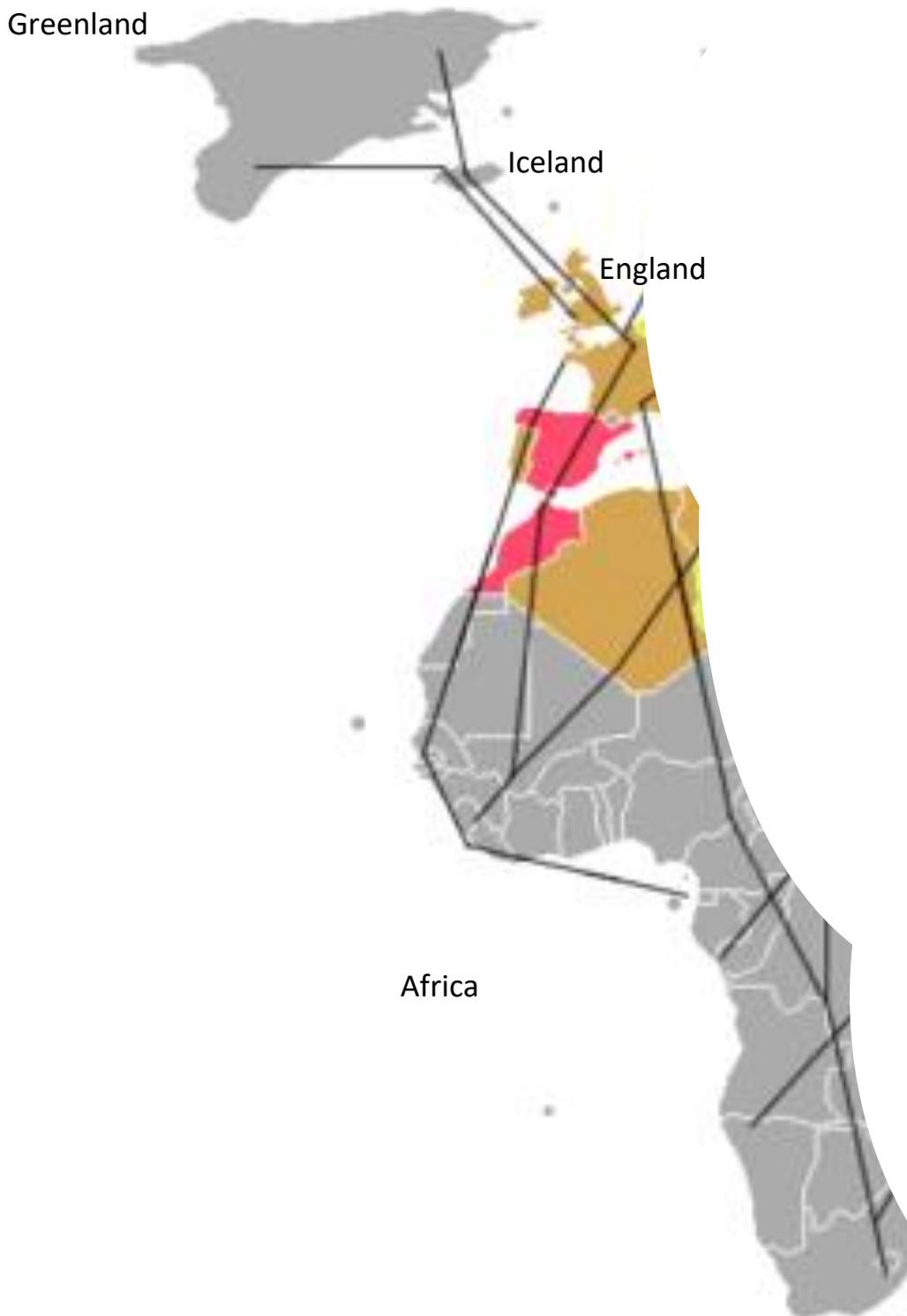
Lesser Black-backed Gull
Visits from Mediterranean area
Starting point Morocco



Spotted Flycatcher
Visits from Savanna area
Starting point Nigeria



Whitethroat
Visits from Steppe area
Starting point Niger



Map: Credit, https://www.wikiwand.com/en/Bird_migration

Migration

Map 2

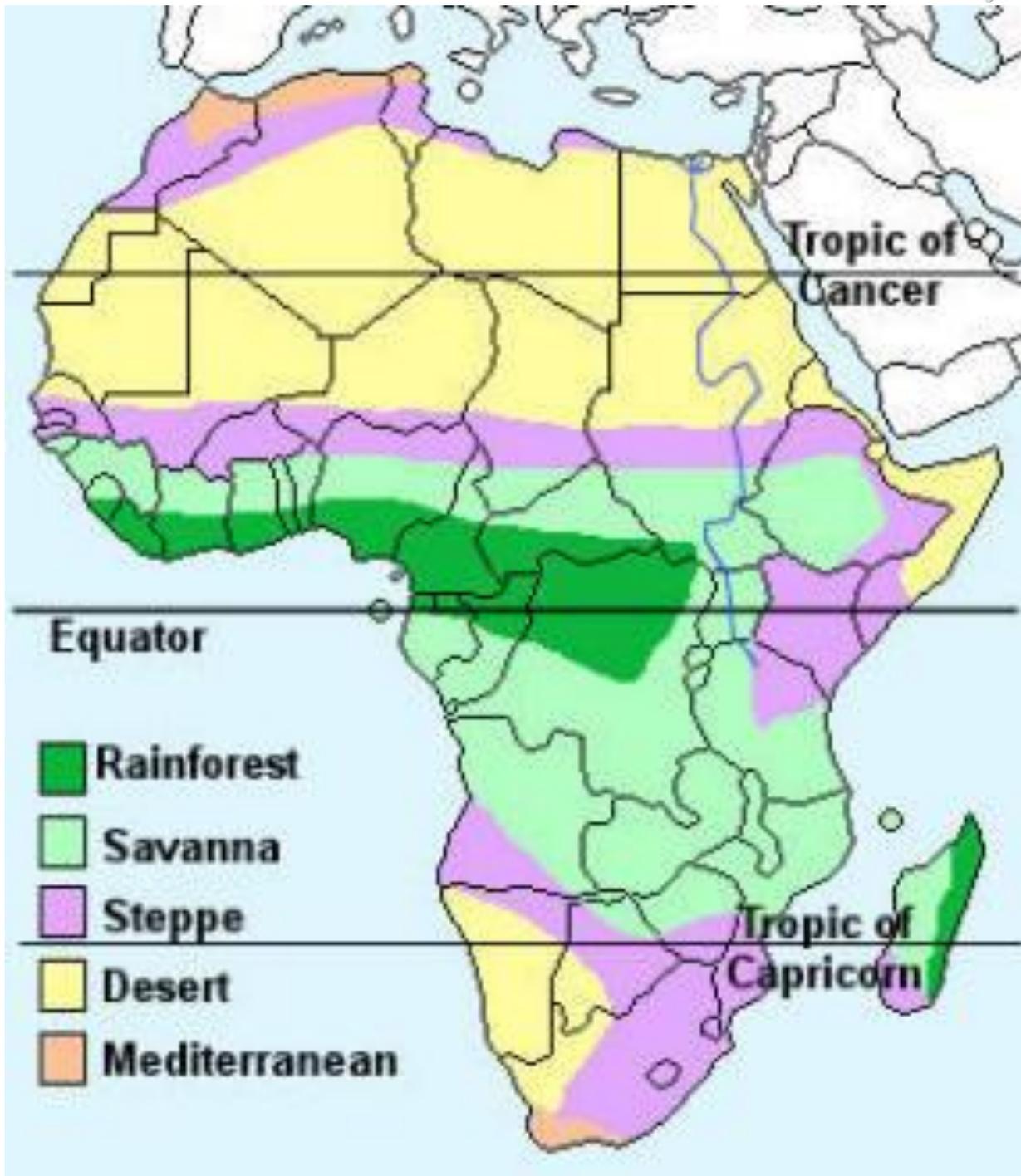


Map: Credit, Worldbook.com

Thank you for helping to conserve the Isle of Man's wild birds and their habitats

Migration

Map 3

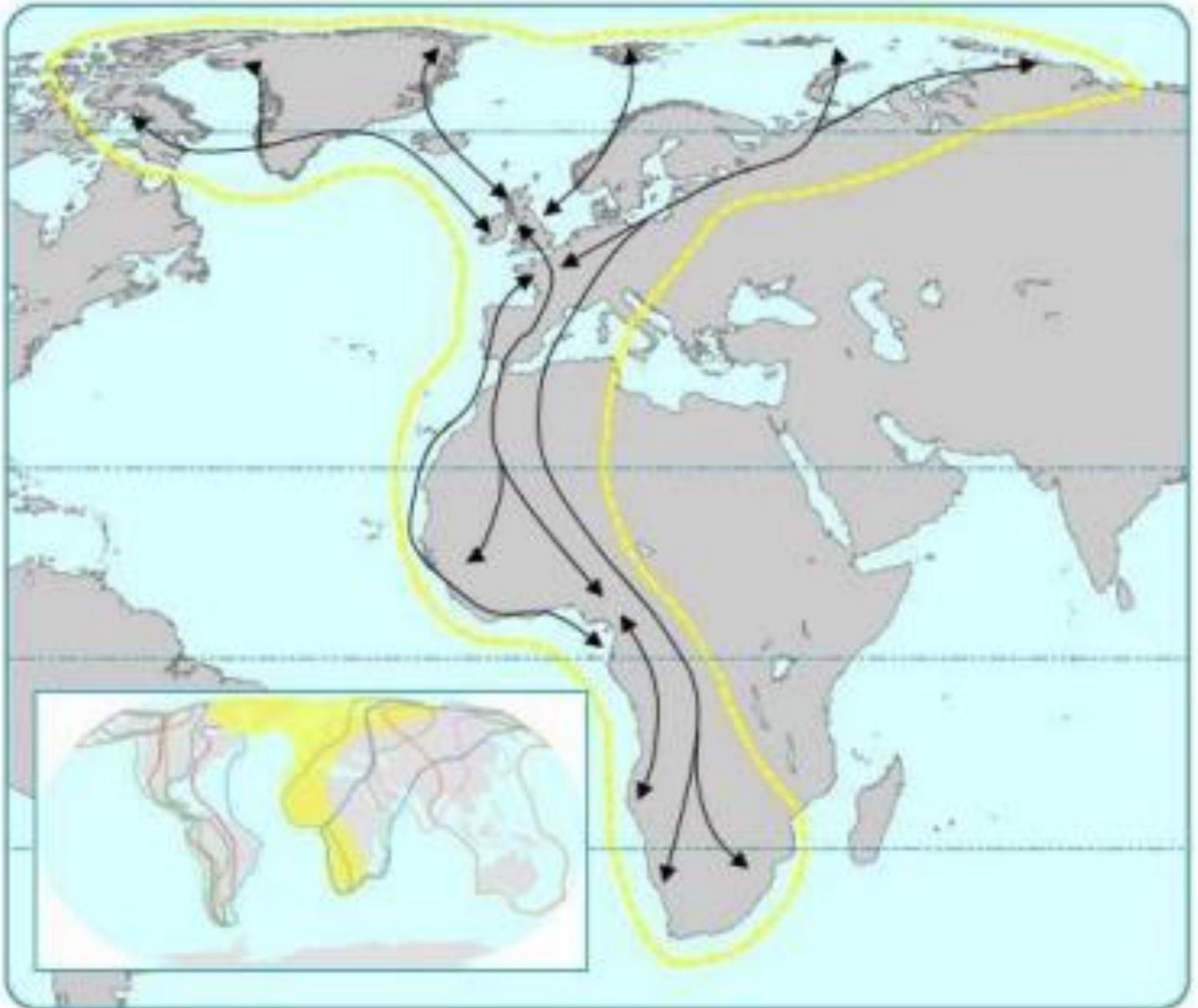


Map:Credit,
Egyptsearch.com

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Migration

Map showing different flyways. Just for information.



Flyways

- | | | |
|-------------------|-------------------------|-----------------------|
| Pacific Americas | East Atlantic | Eurasia/South Asia |
| Central Americas | Black Sea/Mediterranean | East Asia/Australasia |
| Atlantic Americas | Asia/East Africa | |

Map: Credit, http://datazone.birdlife.org/userfiles/file/sowb/flyways/4_East_Atlantic_Factsheet.pdf

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