

UNIT  
Birds

## THE MIGRATION OF BIRDS

Natural Science 2. Secondary Education ANAYA

UNIT  
Birds

### The migration of birds

#### The migration of birds

- Migration is the yearly, seasonal journey undertaken by many species of birds. During this journey, birds cover distances of many kilometres.
- The most common types of migration are those carried out by birds in the spring and the autumn. In the autumn, they travel from breeding grounds in the north to wintering grounds in the south, and vice versa in the spring.

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### The migration of birds

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- Birds that migrate are called **migratory birds**, while birds that remain in one area are called **sedentary birds**.

A sparrow is an example of a sedentary bird.

Geese are migratory birds.

## What drives bird migration?

### The migration of birds

#### Why do birds migrate?

- Birds depend on the amount of available **food** in an area to survive and raise their chicks, so when there is a shortage of food in one area, they move to areas where more food is available.
- Changes in the amount of available food in certain areas are related to **changes in temperature**. These changes occur in different seasons in different regions of the world.

### The migration of birds

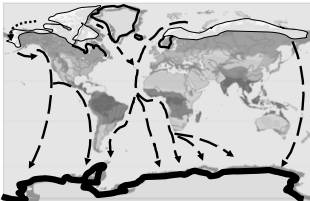

#### Migratory routes

- Migratory birds follow the same migration routes every year.
- Birds that migrate from Northern Europe to regions in the south of the continent in the winter are called **wintering** or **pre-Saharan** birds (as they do not cross the Sahara).
- Birds like geese and cranes come to the Iberian Peninsula from Northern Europe to spend the winter.

### The migration of birds

#### Interesting examples

- The **Arctic tern** travels the longest distance of any migratory bird: it journeys from one pole to another two times a year, covering 40,000 km = 24,855 Miles.
- Over the course of its life, about 26 years, an Arctic tern can travel up **621,371 MILES!**

Breeding grounds  
 Wintering grounds  
 ..... Migratory routes

### The migration of birds


#### Interesting examples

The **white stork** provides an example of how the amount of food available affects bird migration.

- These storks used to come to the Iberian Peninsula to spend the summer and breed. Then, in the autumn, they migrated to Africa to winter there. However, more and more storks now winter on the Peninsula.

• This is due to:

- A greater number of rubbish dumps that provide them with food throughout the year.
- It is likely that the change is also related to the higher temperatures resulting from **climate change**.



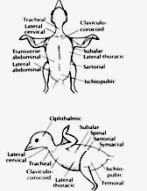
White stork

## How to Prepare for Migration

### Migration Fat:

- Fat yields 2x energy
- Birds add to 20% body mass, mostly in fat
- Fat deposits in adipose tissue of skin, in muscles, organs
- Spreads as a thin layer just under skin
- Also provides insulation during high altitude migration flights

Fuel	Energy yield (kJ)	Molecular weight
Fat	38.9	1.67
Carbohydrate	17.6	0.55
Protein	17.2	0.41




## Brainstorm:

<h3>Pros of Migration</h3> <ul style="list-style-type: none"> <li>•</li> </ul>	<h3>Cons of Migration</h3> <ul style="list-style-type: none"> <li>•</li> </ul>
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## What are the Benefits of Migration?


- **Conditions:**
  - Avoid harsh and dangerous winter climates
  - Avoid lack of cover during winter
- **Food:**
  - Avoid lack of food during winter
    - Especially insectivorous birds
    - Especially fruit-eating birds
  - Migrate from area of sparse or no food to area of relatively abundant food

**Bottom Line:** So migration enhances survivorship of many populations



## What are the Costs of Migration?

- 100 million NA waterfowl migrate in fall, 40 million return in spring (60% die)
- **Risks:**
  - Exposure to predators
  - Exposure to exhaustion
  - Exposure to harsh, dangerous weather conditions during middle of migration
- Storms, contrary winds blow many species off course
- Especially risky for over water or over desert migrants
- Eleonora's Falcon breeds on Mediterranean areas in fall to take advantage of migrants.



LEONORA'S FALCON

**Everyone  
doesn't Migrate:  
*Alternatives***

1. Enter dormancy or torpor
2. Remain on territory throughout the year
  - Thereby first in spring to claim mate

