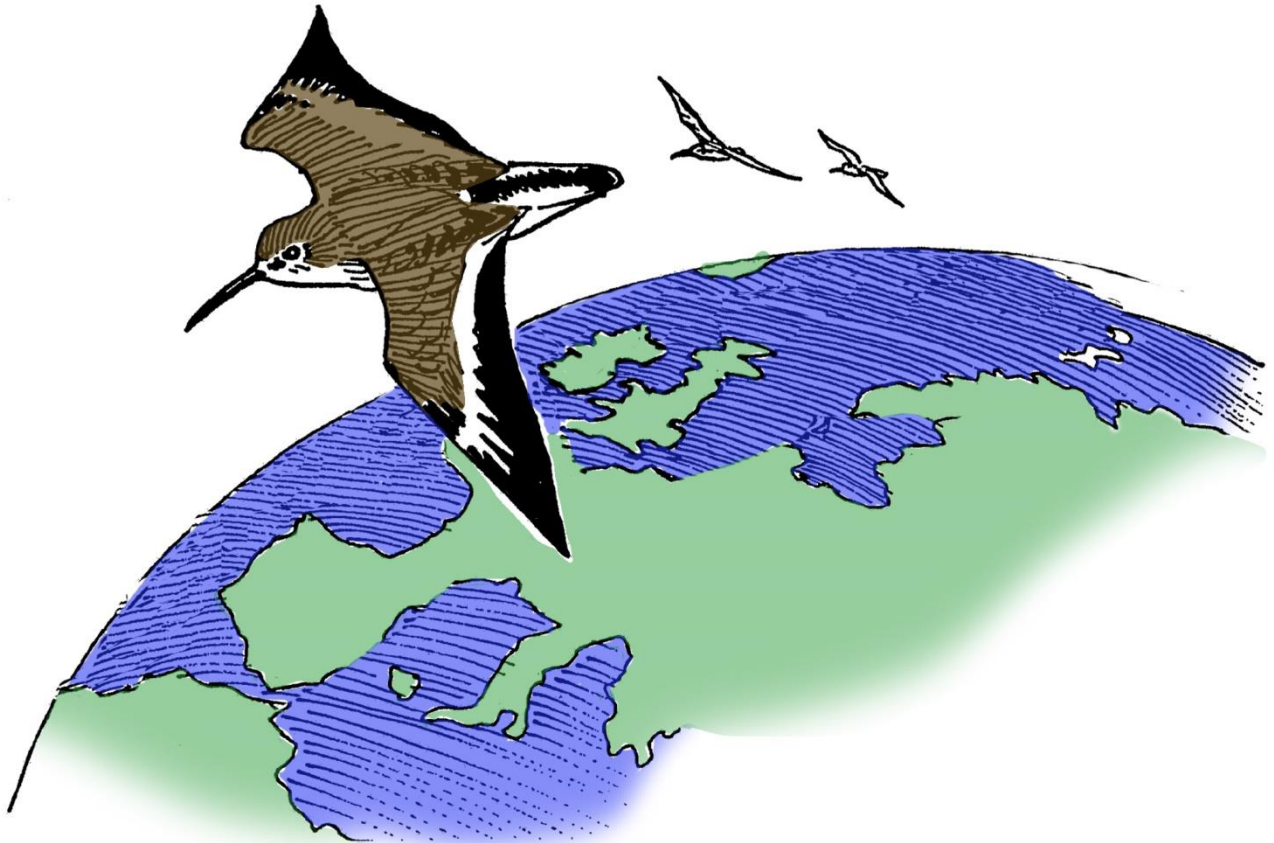




THE WADER MIGRATION GAME



Background Information for Teachers

Background notes for the Wader Migration Game

Wading birds find their food in the mud and sand of estuaries and the seashore, and in the soft soil of bogs and wet grassland. They often wade in shallow water in search for food, hence their name – wader. Many breed well to the north of the Arctic Circle, where food is plentiful, but summers are short.

At the end of the breeding season, large flocks of waders such as dunlins, red knots, godwits and other wading birds fly south to escape the approaching Arctic winter. Some go beyond Ireland to the coasts of Africa, but many find refuge during the winter around our shores. They feed on the rich variety of creatures in estuary mud – one of the most fertile and productive parts of the planet; the equivalent of 15 Mars bars in energy per square metre!

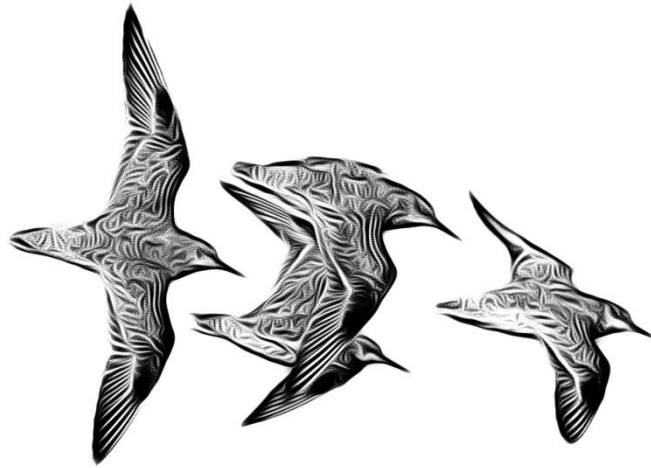
Migration is the key to the survival of these birds. They cannot survive the Arctic winters, and they can't find enough food to rear their young in the south. Therefore, the birds fly south in the autumn, and north in the spring. For many, Ireland lies directly in the path of their migration route, so our estuaries are vital to the survival of these birds. Like stepping stones, without them they could not complete their amazing migrations to survive.

Many hazards lie in their way. Some, such as storms, headwinds, fog and ice, are natural; others are human-made. Pollution, oil spills, destruction of estuary habitat. Even light pollution from towns and cities is affecting their ability to navigate. Climate Change and disturbance of various kinds either kill birds or weaken them by stopping them from feeding and resting while on migration.

The Dunlin is a small wading bird. About 20cm long and weighing the same as six 2 euro coins, just 52 grams. Small numbers breed here in Ireland, many come here for the winter from northern Europe and Siberia. Others pass through Ireland each Autumn on their way to their wintering grounds in west Africa and again each Spring on their way to their breeding grounds in Iceland and Greenland.

The Wader Migration Game follows the lives of Dunlin from the time they hatch in the Arctic, on their migration through Ireland to Africa, where they spend the winter, and their return journey to the Arctic to breed. The players experience the benefits of migration and the hazards that birds face on the long journey. They learn the importance to birds of maintaining energy levels high, adding to and subtracting from their energy stores during their year as they discover the importance of our estuaries for birds and us.

The Wader Migration Game passport helps players to record what happens to them on their migration journeys. It also helps to keep vital energy stores up-to-date.



The wader migration game brings the importance of our estuaries into sharp focus:

- They are the wintering grounds of up to 760,000 waterbirds (waders, ducks, swans etc.), including 430,000 waders, about 12 per cent of the total north-west European populations.
- Over 330,000 ducks and other waterfowl also depend on estuaries in winter (estuaries are less likely to freeze than inland waters)
- Threats to estuaries include the loss of estuary habitat due to improper port expansion, the location of marinas, construction of barrages, land claim, dumping of rubbish and human waste, improper industrial development, Climate Change and sea-level rise.
- Increased leisure time for people leads to increased disturbance for birds. Boats, jet skis, hunting waterbirds, birdwatching, horse riding and dog walking all disturb waders and other waterbirds when they need to conserve their energy, especially during cold and short winter days.
- All of these activities stop waders and other waterbirds from getting the food and rest they need to survive the rigours of migration.

Irish estuaries are the service stations of the migration flyways. If these vital feeding and roosting sites are lost, the birds will die and our world will be a duller place.

Wading bird facts: Wading bird species in Ireland are in trouble. Including Dunlin, Red Knot and Redshank, they suffered combined losses of over 100,000 individuals (19%) between 2011 and 2016. Wildfowl, including 14 species of duck, 3 species of swan and 4 species of geese, declined by 28,000 individuals (9%). In total, 27 species declined by over 10%, with only seven species managing to increase by more than 10% (Burke *et al*, Irish Birds 2019).

Dunlin

Length 20cm/Wingspan 40cm/Wt.52g



One of our most common waders. Numbers in Ireland have dropped by 61% in the last 25 years. Over 45,000 dunlins spend the winter on Irish estuaries. This is over 3% of the dunlins that breed in Russia and northern Scandinavia.

Red Knots *Length 24cm/Wingspan 60cm/Wt. 140g*

Numbers have dropped by over 43% in the last 25 years.

They spend the winter here and come from their high Arctic breeding grounds in Greenland and northern Canada. They can lose 30% of their body weight on the 4,500 km journey.

Safe feeding places on estuaries are vital for their survival.



Redshank *Length 28cm/Wingspan 48cm/Wt. 130g*

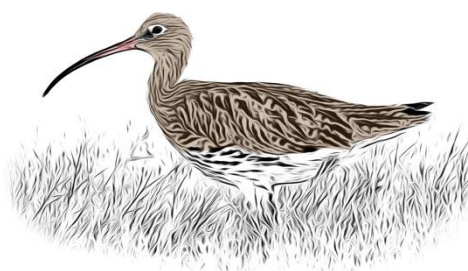


10% of the north-west European population, about 23,000 redshanks, depend on Irish estuaries in the winter. Most come from Iceland. Hazards listed above have caused a decrease of 24% the last 10 years.

Curlew *Length 55cm/Wingspan 90cm/Wt. 800g*

Five percent of the European population spends the winter on Irish estuaries. Globally Curlews are in serious trouble. Our breeding population has declined dramatically by 90% in the last 50 years.

Habitat loss and degradation is likely to be a key factor in this decline.



Estuary issues:

To the uninitiated, estuaries can appear to be wastelands – great expanses of mud and water, ripe for taming to human needs. Indeed, people have always used estuaries for a range of purposes: fishing, bait-digging, cockle fishing and as playgrounds for sailing and other pursuits to name a few. Although these have temporary impacts on the birds, the damage can be controlled or even reversed.

The uncontrolled construction and development of marinas, barrages, port infrastructure and other industry by contrast can create irreversible damage, destroying areas of inter-tidal mud and reducing forever an estuary's capacity to feed birds and support the rich biodiversity that lives there. Thanks to the work of the BirdWatch Ireland and other environmental organisations these threats are now recognised by government and better regulated than they used to be, but the importance of estuaries for wildlife needs to be restated to each new generation, and this is the focus of the Wader Migration Game. The threats are real, for example, 85% of the area between high and low tide (the inter-tidal area) in Belfast Lough has been destroyed by industry and land claim.

In recent years, we have become more concerned with two particular threats to estuaries: sea-level rise and climate change. As the warming seas expand and as more ice melts, estuaries and sandy beaches are shrinking and are squeezed against sea defences, hard cliffs and the rest of the coast. Even when the tide is out, there will be less mud available for feeding.

Climate change is seeing an increase in the number and severity of storms. Storms can directly threaten the survival of birds such as waders that live in open habitats. Migrating birds can find themselves delayed, blown off course or simply battered in extreme weather. We can't change the weather, but we can help to ensure that these extra storms aren't the final straw for our amazing migrating wading birds.

For more information on Cork and Ireland's birds and their habitats check out www.birdwatchcork.com and www.birdwatchireland.ie

Illustrations created from photos by Mark Carmody



Bird Migration at Harper's Island

Birds at Harper's Island come from many parts of the world. Some are born here in Ireland others come to Cork Harbour and Harper's Island for the winter from their breeding grounds in other parts of Europe and further a field. We also have birds coming here to breed in the summer from distant wintering grounds. Some are passing through to breeding grounds further north or non-breeding grounds further south. This map shows just a few examples of where those birds are born, breed or spend the non-breeding season.

