

## Space Age Ospreys

When scientists launched the first Earth orbiting satellites in the 1950's they can have had little idea of the impact what this technology would have on the study of bird migration.

The people of medieval Britain believed that birds like swallows spent the winter in mud at the bottom of fish ponds.

Hundreds of year's later people accepted that many species of bird fly large distances to spend our winter in the more hospitable climate of Africa. This information came from researchers who fitted leg rings to birds. However the system of leg rings depends upon the bird with the ring being spotted or more often found dead. Birds ringed in Britain were found in Africa and visa versa. So we knew about migration but little was known about the routes the birds took, or how long it took them to fly from one country to the other.

**Image;** Osprey legs with rings

The codes on the rings are unique to each bird.



## Into the space age

Advances in computer and satellite technology have led to huge advances in our knowledge of bird migration.

The photograph shows an osprey called 09 (this is the code on his large coloured leg ring). He has been fitted with a satellite tracking device.

This small unit weighs only 30g ,about the same as three £1 coins. It is worn like a mini rucksack secured with Teflon straps which are sewn together at the front.

The device includes a solar panel to power it and a device that can send information to satellites orbiting the Earth. This information includes a GPS co-ordinate, as well as data about the birds speed, direction and altitude. All this data is sent to the satellites every hour and these satellites then relay this information back to receiving stations on Earth.



More information about how it works, together with an animation can be found on the website [www.argos-system.org](http://www.argos-system.org)

From the menu choose '**System**', then '**How it works**'

or follow this link <http://www.argos-system.org/web/en/67-how-it-works.php>

## Space Age Ospreys - cont

To a large powerful bird like an osprey the weight of the satellite tracker will barely be noticed and does nothing to impair its flight. However the Teflon straps are sewn together using cotton which is designed to rot after two or three years, so the device will eventually drop off.

Information from 09's satellite tag and other birds like him has made a significant contribution to our knowledge and understanding of migration.

## Things to do

- 1. Using the information from this sheet, the websites and the animations draw a fully labelled diagram to explain how the satellite tracker on an osprey provides scientists with information about the migration of ospreys. Your diagram should also make reference to the data that is provided by the tracking device.**
- 2. Ospreys are not the only birds to migrate, nor are they the only birds which have been fitted with satellite tracking devices to understand their movements. Using the internet find out for which other birds this technology has been used, and what it has been discovered about them.**
- 3. Satellite trackers are also used on animal groups other than birds. Find out the names of other animals and what information that the satellite tracking is providing.**
- 4. All of the tracking devices have to have a power source to make them work. Research this and write a paragraph, or draw a fully labelled diagram, to explain how this works.**