

# Tracking Hen Harriers Across the UK and Beyond!

Dr. Cathleen Thomas, Senior Project Manager, RSPB, is an experienced conservationist with a background in evolutionary ecology and education. She has led successful conservation projects helping to protect a diverse array of species including Atlantic cod, ladybirds, red squirrels and now hen harriers. Nigel Butcher, Senior Technical Officer, RSPB, has worked for the RSPB for nearly 20 years in their Conservation Science department. He studied electronics and his work is associated with technology, particularly telemetry but also audio and video. In recent times he has been heavily involved in the tracking of hen harriers and another project on turtle doves in both the UK and Africa.



The RSPB's Hen Harrier LIFE project team have fitted satellite tags to over 100 juvenile hen harriers during the past five years. Hen harriers are a ground-nesting bird of prey. In the UK, they usually spend their summers on upland moors, nesting amongst the deep heather. They are one of our most treasured upland species, with spectacular displays of aerobatic skydancing and food passes during the breeding season. Sadly they are also one of our most endangered species, with the latest population survey estimating just 575 pairs remaining across the UK and Isle of Man, despite there being sufficient suitable upland habitat to support over 2,650 pairs.

Around 50% of our British upland moors are managed for grouse shooting, where landowners and managers maintain artificially high numbers of grouse which are then shot annually during the shooting season from 12<sup>th</sup> August onwards. These landowners employ legal methods to control predators such as foxes, crows, weasels and stoats, but in some cases they also illegally kill predators such as hen harriers, golden eagle, peregrine, red kite and goshawk. An overwhelming body of scientific evidence now shows that the main reason for the hen harrier population decline is the illegal killing of birds associated with management of moorland for grouse shooting. We wanted to fit satellite tags to follow the fates of British birds and to attempt to understand their movements and the scale of illegal persecution.

Monitoring satellite tagged hen harriers can be an exciting and interesting job – following an individual bird making its first flights away from the nest area, seeing it travel across the UK, and on occasions further including France and Spain. We can then also monitor its own nesting attempts and raising its own brood of young chicks but sadly, it has also brought into sharp focus the fates being met by many of our hen harriers. Thorough daily analysis of location and sensor data is vital and informs our decision on whether to go searching for potentially dead birds. GroundTrack (GT) and the goniometer have proved invaluable in our retrieval success and birds are immediately taken for post mortem.

## A couple of stories to highlight outcomes are:

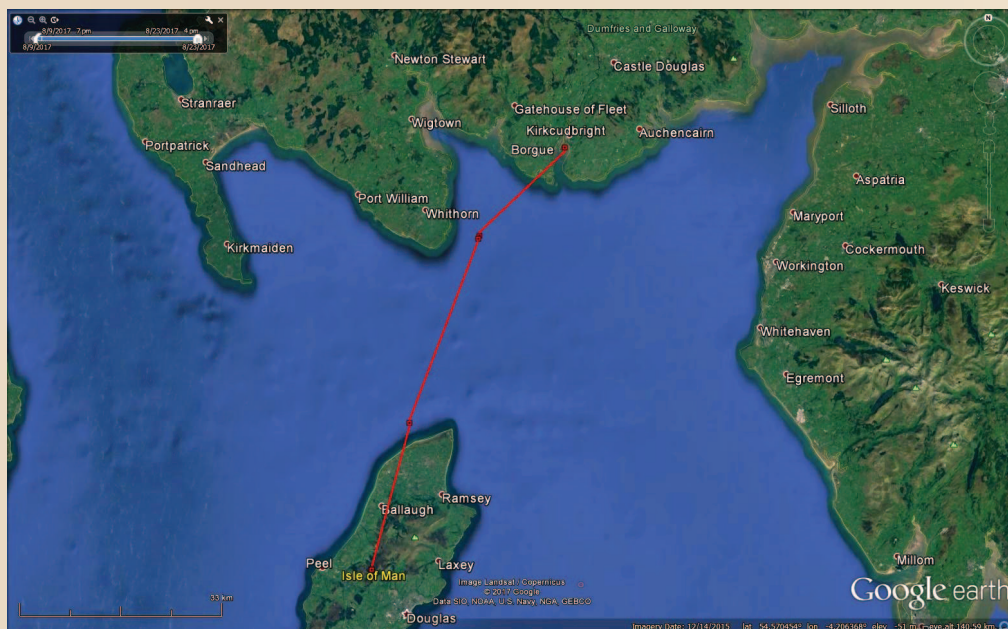
**Mannin** (male) was fitted with a 9.5g PTT solar tag on the Isle of Man in July 2017. After leaving the nest he explored his home island until 14<sup>th</sup> August, when the tag data showed he left the island and headed north towards the Galloway coast in Scotland. Sadly he never completed this journey and the data showed that he had gone down in the sea, approximately



5km off the Scottish coast. We were amazed to see the satellite tag continued transmitting and on 24<sup>th</sup> August the data showed he was located on

the shoreline. Our team were able to locate his remains and the tag. We'll never know what caused Mannin to go down in the sea. Maybe he was caught in heavy rain, became waterlogged and was unable to complete the sea crossing? Whatever the cause, it was a sad end to his short life, but a testament to tag reliability.

This is in marked contrast to the disappearance of many of our birds, whose perfectly-functioning tags' transmissions end very abruptly, often over areas of land managed for grouse shooting. These disappearances are regarded as highly suspicious and reported to the police.



Map of Mannin's movements (image by RSPB)

**Rannoch** (female) was fitted with a 12g PTT solar tag in Scotland in July 2017. We watched her as she moved around Perthshire, then on 10 November 2018 she stopped moving in an area of moorland between Aberfeldy and Crieff. The tag battery drained before accurate location data could be gathered allowing her to be found, but after coming online again in May 2019 enough information was provided to locate her remains. We were shocked to discover she was caught in a spring trap. The post mortem report from SRUC veterinary laboratory said: "The bird was trapped by the left leg in a spring trap at time of death. Death will have been due to a combination of shock and blood loss if it died quickly or to exposure and dehydration/starvation if it died slowly. Either way the bird will have experienced significant unnecessary suffering."

With the population so low, we are absolutely devastated whenever a bird is a victim of a crime. Satellite tagging has revealed the amazing journeys made by hen harriers but also uncovers how their journeys end. The project is nearing its 5-year conclusion and the data analysis is just beginning.



Rannoch found caught in a spring trap.

Photo by RSPB