



Thermal imager, by Ben Dolan

The Pulsar XD50S thermal-imaging camera that Brewood Ringers tested.

Thermal birding

The question ‘how useful are thermal-imaging cameras to find birds and nests?’ is one that BTO staff are asked with increasing frequency. Last year, Brewood Ringers were lucky enough to be able to purchase and test such a camera. In this article, Ben Dolan and other members of the group review the effectiveness of this technique.

It is often said that ‘necessity is the mother of invention’. In our case, the ‘invention’, in the form of a thermal-imaging camera, was already available. It was simply a case of bringing the invention to the needs of our bird survey activities. The idea was forged in the spring of 2016 in a small arable field near Marsh Lane Nature Reserve in the West Midlands, a stone’s throw from Birmingham airport.

It had been reported that there was a high number of Lapwing chicks on the field; our initial visit provided a relatively low yield of 12 in 45 minutes, low in terms of the number of birds that were visible with binoculars. The birds simply did what nature intended and hid from perceived predation. A simple question, ‘I wonder if a thermal-image camera would work?’ was asked by one of the ringers present and so this partnership of necessity and invention was conceived.

OUT IN THE FIELD

On our next visit we secured the loan of a Pulsar XD50S thermal-image camera from Packington Estates. Within 40 minutes of using the thermal imager we had ringed

38 chicks and located several nests with eggs and newly hatched young. It was clear that the benefits of using this technology included reduced disturbance, as less time was spent on the field, allowing a more productive survey to be conducted, and a considerable improvement in the ease with which nests and offspring could be located.

Enthused by the success with Lapwing, we considered how effective such technology would be with other aspects of bird ringing and monitoring. This equipment is not cheap and, at £3,000, we needed to approach our partners, the West Midland Bird Club (WMBC) to look at funding a camera that could be utilised for all survey work, not exclusively ringing. We were successful in our application and were able to purchase our very own Pulsar XD50S with IPS3 external battery; we thank WMBC for all of their support.

To ensure that we maximised the potential of the equipment, we considered a number of uses. One of the inaugural tests that we carried out was locating some late broods of Common Tern and some Tufted Ducks. Whilst the camera did have some limitations when working in

thick vegetation, it did prove somewhat successful; further trials will be carried out in 2017.

COMING HOME TO ROOST

A large Swallow roost at one of our sites provided another opportunity to test the camera, as we attempted to identify the preferred roosting area within the reedbed. Whilst we were able to see some birds, the equipment was unfortunately not sensitive enough to enable us to record numbers. The concept was taken a step further with a roost of Pied Wagtails in an urban area which we visited to ascertain if we could count individual birds. The birds were easy to see and individuals could be distinguished. It is apparent is that during an evening you are able to see roosting birds as small as Wrens.

RINGING BY LAMPLIGHT

The thermal-image camera has been revolutionary for our group with respect to lamping. We aren't blessed with dark skies in the Midlands and attempts in 2015 without the equipment had resulted in only three birds being captured, despite considerable effort over days and months. Those within the group who tried lamping without the camera equipment would struggle to believe that a year on, our catches would increase by hundreds of percent. In fact, they would probably disbelieve the fact that our sites here in the West Midlands contain good numbers of Woodcock, Snipe, Jack Snipe and Skylark.

Gone are the nights of endlessly walking up and down fields, torch and net in hand with little hope of seeing a bird, but more than likely walking past tens, if not hundreds. The thermal imager enables us to stand in the corner of a field and scan a large area in a matter of minutes. We are now confident enough to say that if there is not a heat source within the range of the camera then there is not a bird in the field.

The 1,250-metre range on the Pulsar XD50S allows comprehensive coverage and you are able to pick up mammals as small as mice. It is however, difficult to estimate the distance between the bird and the lamper if a third party is trying to direct you in by phone or radio. Using this equipment we

have been successful on every outing. Our group has ringed a wide range of species including Water Rail, Woodcock, Common and Jack Snipe plus good numbers of Skylark and thrushes. To date, 443 birds of 17 species have been located using the thermal imager.

LOOKING FORWARD

A range of future applications of the technology is being considered, including surveying Jack Snipe on marshes. Nestboxes will also be viewed with the camera as this may prevent all boxes needing to be opened, especially where ladder access is required.

Each member of our group would agree that the reduced disturbance to the habitat and birds is the key benefit of the equipment, with increased productivity and efficiency being close seconds. The success of this approach is evident within our own records and hopefully the information may encourage other BTO members to consider different applications where this technology could be utilised.

THANK YOU

Our success would not have been possible without the Packington Estate, local landowners, Thomas Jacks Limited and especially the WMBC. Huge thanks to all.

MORE INFO

For further information, visit: www.brewoodringers.com

or follow us on Twitter and Facebook @ [brewoodringers](https://www.facebook.com/brewoodringers)



Thermal wagtails, by Ben Dolan

Whilst the accuracy of counting of the Pied Wagtail roost was not 100%, numbers could be estimated (image taken 13/10/2016, despite what the date on screen says).