Thermal Imaging Trials

A303, Salisbury, Wiltshire

Chevron Green Services

BIG Biodiversity Challenge Award Category: Innovation Award

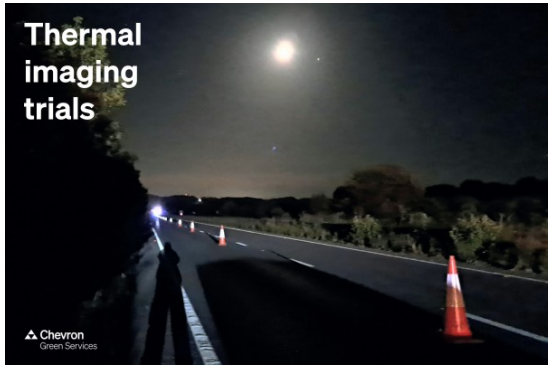
Project overview
Chevron Green Services' Consultancy division had a theory that using thermal imaging cameras as part of their on-site Ecological Clerk of Works would have a superior ecological benefit to visual checks. The trial was undertaken on the A303 whilst providing ECoW supervision to Chevron Green Services and completed on 2.11.23.

What were the biodiversity conditions on site prior to the enhancement?
The site was classed as poor low value grassland and moderate condition lowland calcareous grassland habitats. The Chevron Green Services operations team were on site to achieve the scheme objects for species rich grassland enhancement, creating an ecological buffer for and restoring the SSSI and creating a network of species rich habitats along the A303.

Our Consultancy division provided an Ecological Clerk of Works for the duration of the works because the de-vegetation and self-set tree removal works were being undertaken in September during nesting bird season and due to the proximity of the works to an SSSI.

What were the reasons behind this project?
We'd wanted to trial using thermal imaging cameras as part of our Ecological Clerk of works for a while and this project, being completed at night, and having both nesting birds and the potential for reptiles meant that this project had the perfect conditions for our trial.

Our theory was that using thermal imaging cameras would be a beneficial enhancement to our Ecological Clerk of Works provision. Making the work more comprehensive, safer for our teams, more efficient for our clients, and less disruptive to the habitats we were protecting therefore further enhancing the biodiversity of the site.



Thermal image trials on A303 Autumn 2023.
Credit: Chevron Green Services

Testing capabilities using works van as a model.
Credit: Chevron Green Services

What were the biodiversity measures taken?

We consider the trial of thermal imaging cameras to be a huge success and it has now become our standard operating procedure for all our Ecological Clerk of Works provision.

Currently we are not aware of anyone else using thermal imaging cameras as standard, although we do know that there is guidance in place for night vision to be a critical part of bat surveys.

Using the cameras as part of all our ECoW provision is ecologically valuable because it means that we are being less disruptive to the sites we're protecting. It means that our teams don't have to venture into (and therefore disturb) dense vegetation, meaning any species found by the cameras and shown on screen in the area are less disturbed than they would be if the checks had been manual. This supports the maintenance of the natural biodiversity on the site.

Being able to use the cameras in this way is also more effective than a visual check, providing more reassurance to our clients that we are sure of our findings. As well as enabling us to check further (higher / deeper / longer) than we would have been able to with the restrictions of the naked eye.

It is also a quicker way to undertake the works, which means our teams are onsite for less time in safety-critical environments (e.g. on the side of a motorway). It also means that the subsequent teams following behind to clear site lines or remove hazardous trees can get to their work quicker. So not only is it also safer for all site teams, it's more efficient because they are off site and out of the habitats quicker too. Meaning that any temporary disturbance caused to wildlife is shorter.

A bunny found with the camera during the trials which enabled us to move it to a safe location, preventing potential harm to the animal.
Credit: Chevron Green Services

Further information

The legacy of this trial will be long-lasting and beneficial to many different habitats and locations across the UK as it is now our standard operating procedure for all Ecological Clerk of Works provision provided by our Consultancy division. All our Ecologists are trained in the use of it. We see this method as a long-term solution and will ensure we continue to keep up to date with camera enhancements so that we're using the most up to date and energy efficient technology.

Although we don't have baseline comparison measurements of the areas where we've used the thermal imaging cameras verses not, we can assume that there has been an increase in biodiversity at these sites. We've based this assumption on the facts that using the thermal imaging cameras for species checks are less disruptive to the areas of habitat we are present in, quicker to use and more comprehensive than a visual check.

It means that we can now further increase and enhance biodiversity at all the sites where we are brought in to provide Ecological Clerk of Works provision. The additional benefit of creating the trial and subsequent adoption to standard operating procedure means that our Ecologists can further positively impact biodiversity through their work. Across the business it's an area that our teams feel strongly about, so seeing the new approach being so readily adopted as a new way of working shows that CGS really supports the ethos of putting nature first.

Project Team

Chevron Green Consultancy a division of Chevron Green Services

What was the motivation for carrying out the enhancement?

Chevron Green Services are always looking to innovate, finding better, more efficient, and effective ways of working. We spotted the potential of using the thermal imaging technology despite it not being widely used in our industry yet. We'd be thrilled if more people took to utilising thermal imaging cameras as part of their Ecological Clerk of Works provision and we hope more companies do in the future, for the improvement of biodiversity and safer working practices on all sites. It thoroughly fits with our mission of safely creating, maintaining, and caring for biodiverse habitats for generations to come.

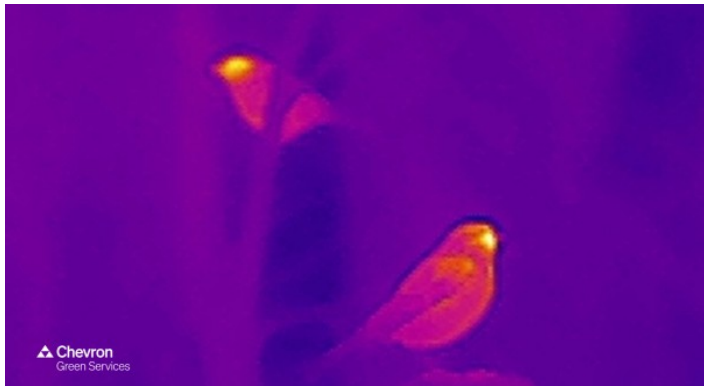


Photo taken during subsequent ECoW using the cameras. Credit: Chevron Green Services

Video taken during subsequent bat survey using the cameras. Credit: Chevron Green Services