Updated 22/02/23

Working for Waders nest camera project 2023

Figure 1 - a bolyguard camera set up at a lapwing's nest in Galloway, April 2022

Camera Trapping – Guidance and Notes

This guidance is intended for people who are planning to use camera traps (or 'trail cameras') to take photos of wader nests. Camera traps take photographs when triggered by the movement of objects that are warmer than the background. Below are some notes, giving basic 'getting started' information. There are two basic principles to work to:

1) Try to minimise the influence of the camera on the outcome of the nest. Possible impacts could arise from disturbance to the nesting birds, or from predators being attracted to or avoiding the camera. To minimise the likelihood of such impacts, make the camera as inconspicuous as possible while also ensuring it can capture useful footage;

2) The camera should be positioned so that it captures useful images of the activity of nesting birds and other animals on and around the nest.

The first principle is the most important – make sure you are happy that the camera isn't so conspicuous that you are concerned about the welfare of the birds. That said, it should be possible to position the camera so that it takes clear images but doesn't disturb the birds. If in any doubt, don't install the camera.

Play around with the camera before you put it out in the field. This will allow you to see how it reacts to different light settings and explore distances at which it captures good quality images. It will also allow you to see how sensitive the different trigger settings are. Before installing your camera, ensure the date and time are set correctly as this provides valuable information about the timing of key events at the nest.

Below is some generic advice on cameras to help get you started. There is also a YouTube video showing how to use the specific cameras which we are loaning out for this Working for Waders nest camera project. We welcome footage captured by other kinds of camera and by participants who are already doing this kind of monitoring.

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General Notes on Using Camera Traps

Camera Placement:

- As mentioned above, the key consideration in placing a camera is to ensure that setting the camera does not cause undue disturbance to the birds and does not attract attention to the camera. Whenever setting or revisiting a camera, always be very careful around the nest: try to minimize disturbance to the surrounding vegetation and be as quick as possible.

How to fix the camera in place:

- Camera traps can be attached using the strap supplied to a stake or other similar object. Where possible, fix the camera to an existing fence post, rather than adding a new feature into the mix that might attract a predator such as a crow. This probably won't be possible on most nests, as birds generall prefer not to nest close to fences but for lapwing nests on a short-grazed field, it might be an option.
- If it is not possible to use an existing post, a discreet stake hammered into the ground is likely to be the most suitable, but if this is in a field with livestock, be prepared for animals to scratch on it. It either needs to be VERY sturdy or short and inconspicuous. Short stakes with the camera sitting just above ground level can work well as stock seem to ignore this, though can still knock them accidentally.
- Avoid long stakes in fields with livestock to avoid the risk of stock coming over to scratch on the post and posing a potential trampling risk. Try and make sure the vegetation in front of the camera isn't going to grow too high, or occasionally cut it back, though it is essential this doesn't disturb the nest site or increase its exposure. It would be very helpful if you can take a photo of your setup as this will help us learn about camera placement and pass on this learning to others.

Line of sight:

- When you have selected the general area for placing the camera, try to pick a spot from which the camera's line of sight to the nest is as clear as possible. This should generally be between 2 and 5 metres from the nest (depending on camera and terrain), and should certainly not be much closer than 2 metres.
- As well as posing a risk of disturbance to birds, cameras placed very close to nests are more likely to miss activity around the nest, and may even miss predation events if these are very quick. If the nest is in open pasture you will need to place the camera further away from the nest than areas with more vegetation as it will be more visible. You can carefully clear away small fallen branches, etc. by hand. If there is lots of brash (tree debris) or long grass this might ruin images of the target animal, especially during night-time, as light from the flash bounces back from such items.
- Orientate the camera so its lens is pointing towards the wader nest. Use the viewing screen, if your camera has one, to check the view from the camera. The nest should be approximately in the centre or the field of view, or just below it. Use small sticks

wedged behind the camera to firm up the fixing, if necessary, and tilt the camera forward or back as needed. With the camera in “set-up” mode, the red light on the front will show when it detects movement that would trigger the camera. Don’t forget to tidy the camera strap, don’t risk it flapping in the wind for a range of reasons inducing unwanted images!

- All else being equal, it is better for the camera to point away from where the sun will be at dawn or dusk (as the sun shining directly into the lens can trigger the camera and will obscure any animals in the images). Facing north will give the best results all-round in terms of lighting. Finally, don’t forget to turn the camera on - you wouldn’t be the first to forget to do so!

Still images and videos:

- Most camera traps can be set to take videos or still images. Some can be set to take both during the same activation event – usually one or more still photos followed by a video sequence. This is sometimes referred to as Hybrid mode and can be a useful way of maximizing the chance of getting good pictures and videos, but does get through batteries faster.
- Videos have a greater chance of producing some nice behavioural footage, but do take longer to look through and use more battery power than still images alone, especially night-time videos. Generally, a camera activates faster when set to take stills - so we would advise you to favour these over video, in most situations.
- Most types of camera trap have wide-ranging functionality. Read through the manual to familiarize yourself with the options available. Do experiment to get the best settings and remember that what is best for one position is not necessarily the optimum for another. Think about how big the memory card is too and how much space different media will take up. Some cameras create large files on videos at max resolution. Be prepared to use lower resolution options if this otherwise risks filling the card.

Reviewing:

- For the Working for Waders nest camera project we are using two types of cameras, one which is mobile enabled and one which isn’t. With the mobile enabled cameras it should be possible to browse through and download recent images taken by the camera on your mobile phone. Further information, including a YouTube video will be made available to those who have been supplied with this type of camera.
- Both cameras have a memory card. Images and videos can be downloaded to a computer from the memory card. The camera should come with a cable to link direct to a computer USB port but simply swapping over memory cards is easier and means the camera can stay out in the field. Many laptops have a slot into which the card can be inserted directly. Alternatively, use a SDHC card reader (which itself connects to a USB port).
- Some camera traps have viewing screens that enable you to look at photos and videos directly on the camera. Being able to see captures instantly can be useful in the field particularly when deploying the camera, when it can be used to check it is set correctly.

If your camera does not have a viewing screen, small readers are also available for viewing content from SDHC cards on mobile phones.

Sensitivity setting:

- We recommend setting the cameras at maximum sensitivity. This does run the risk of using up the batteries quickly and of lots of captured images being triggered by moving vegetation, but it will maximise the chances of capturing small or rapid movements, which could include hatched chicks or predation events. That said, you may be forced to decrease sensitivity if your camera is at risk of near-constant recording due to movement of long grass due to wind. This kind of situation is likely to require a compromise, and it may take a bit of trial and error to identify the best solution.
- "Auto" sensitivity may be another option, depending on the camera. This adjusts the sensitivity according to temperature. It may also be useful to carry out a check-up visit after a couple days to see how the camera is behaving on the settings selected – whether it needs sensitivity changing, or the programmed delay shortening or lengthening, or image resolution changing, etc. Although clearly you would need to be mindful of not causing undue disturbance. If you could capture any feedback on this aspect of the camera to share with others that would be very helpful.

Security:

- Camera traps are vulnerable to theft or vandalism so be careful where you set them. However, a camera trap sitting on a shelf is of no benefit, so accept that there is an element of risk of theft or vandalism whenever the equipment is used.

Batteries:

- Some camera traps can run with external power sources, or can be linked up to solar panels, but most common camera trap models run from AA batteries. We recommend using lithium batteries. Note that due to being effective at giving out constant levels of power, and not gradually weakening as they become depleted, battery indicator levels may show lithium batteries to still be fully charged when they are close to expiring. Some camera models allow the user to designate what battery type is used, so the camera's battery indicator can adjust accordingly, otherwise it is good practice to regularly check the camera is still working.

- Rechargeable batteries can reduce wastage. However, regular rechargeable batteries do not last as long as lithiums and, especially, lose power in the cold. Remove batteries if storing the camera trap for any length of time.

- In 2021, 6v batteries (complete with lead-out cables) were made available for camera trappers. A limited number of these are still available – please contact the project if you would like one.

Sending records in:

- Working for Waders has created an online form to submit information relating to your wader nest. The type of information we're asking for includes the species of wader which you are monitoring, whether the nest is successful or not, location, any predation events and timings of hatching, predation events etc. If needed, we will provide further guidance on what to do with the images, what information to collect and how to store and look through the images, but it is possible to upload these via the Google Form. Together these records and images will help to develop our understanding of how our waders are faring and of impacts on them.