

How to Set Up a Birdbath Camera Trap

The following instructions are intended to assist those who wish to set up a camera to automatically take photographs of birds visiting a birdbath.

The Camera

In order to take photographs automatically you need a camera that is triggered when motion is detected. The simplest way of achieving this is to purchase a "Trail Camera". These cameras were developed for the hunting market and are intended to photograph animals of interest to hunters. Trail cameras have several features which make them suitable for general wildlife photography including:

- Weather sealed construction that allows them to operate in most conditions.
- Power saving features that makes them capable of running for 2-3 weeks utilising standard batteries.
- Infrared LED illumination facilitating night time photography.

Unfortunately trail cameras are not ideally suited for bird photography, some of their shortcomings are:

- Low resolution sensors, typically 5-8 Megapixels. Hunters are not interested in details; they only need to know if it is a pig, deer or kangaroo.
- A wide angle lens utilising relatively poor quality optics. Hunters typically want the camera to cover as much area as possible not just a few square metres.
- Poor to no exposure controls.
- A relatively long close focus range, typically 1 metre.
- Trail cameras are designed to be attached to trees and fence post rather than tripods (real hunters don't use tripods). Consequentially the tripod mount is a bit of an afterthought and is poorly designed.

I have used two trail camera models:

- Little Acorn 5210 – purchased via eBay in 2013 for \$160
- Maginon Trail Camera – purchased from Aldi in 2015 for \$80

There is little difference between the two cameras in terms of features. The two notable differences are:

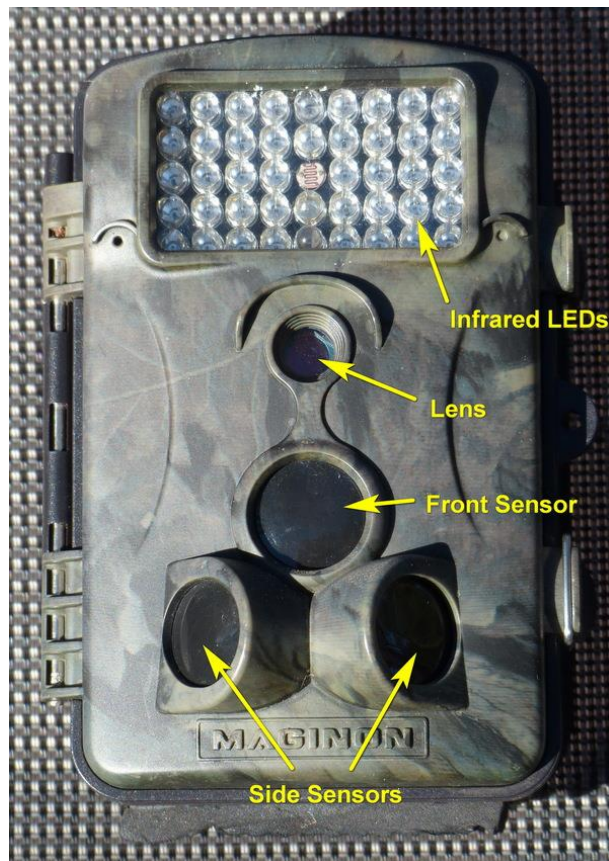
- Battery life; the Acorn appears to run for a longer period on a set of batteries, typically three weeks compared to the Maginon's only two weeks.
- Price; if you are patient the Aldi Maginon is good value but Aldi only have them in stock about once a year.

Both cameras use eight AA batteries. I have found Aldi brand rechargeable Ni-MH batteries to be cost effective.

If your pockets are deeper other makes and models are available with more features such as:

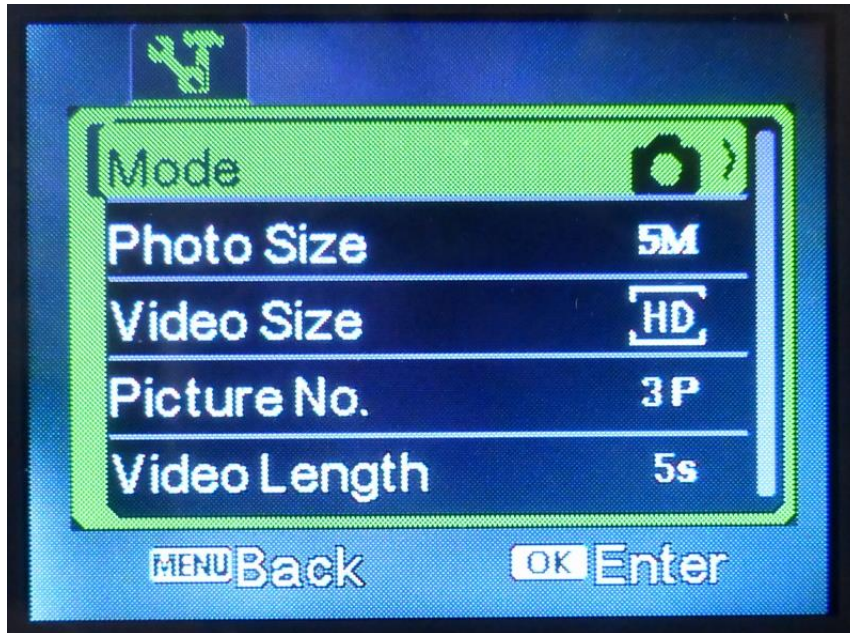
- Close up lenses for focusing less than 1 metre
- Higher image resolution
- Transmission of images via SMS
- Solar power panels

The Maginon camera is shown below:

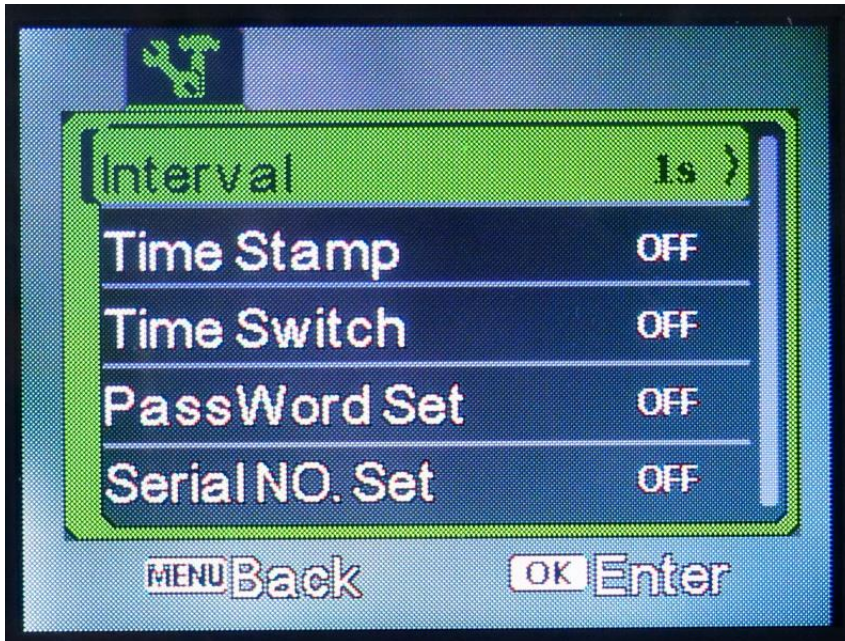


Camera Configuration

Each camera model will have different configuration options. The Little Acorn and Maginon have very similar menus, so much so that I suspect they are made by the same manufacturer. Below are the configuration options I use (available options in parenthesis):



- Mode : Camera (Camera, Video, Camera+Video) – I usually take still images but you can select video or stills and video.
- Photo Size : 8M (5M, 8M, 12M) – I use 8M, 12M sounds as though it should produce a better image quality but the camera only interpolates from 8M to 12M. The result is a bigger image but it has no additional detail.
- Video Size : 720P (1080P, 720P, WVGA, VGA) – Select the video resolution desired if you wish to record video.
- Picture No. : 3Photo (1Photo, 2Photo, 3Photo) – How many photographs are taken per trigger event.
- Video Length : 5 sec (1sec-10min) – Video recording period per trigger event.



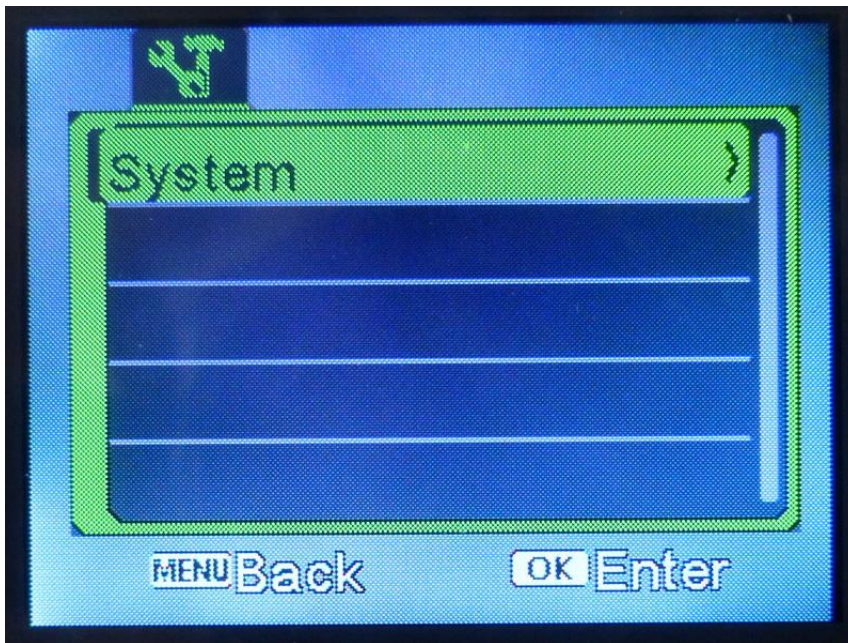
- Interval : 1 Sec (0 Sec – 60 Min) – minimum time between trigger events.
- Time Stamp : Off (On, Off) – if selected the temperature, moon phase, date and time are recorded on the image.
- Time Switch : Off (On, Off) – if enabled the camera is only active between the times specified.
- Password Set : Off (On, Off) – If enabled a password is required to access the camera settings.
- Serial NO. Set : Off (On, Off) – If enabled a user specified identification can be set.



- Time Lapse : Off (On, Off) – If selected the camera will take images continuously with a specified delay between images.
- Side PIR : Off (On, Off) – Switches the side motion sensors on or off. I switch them off to minimise the number of false triggers.
- PowerSavingMode : On (On, Off) – When on the infrared LEDs operate at reduced brightness.
- Language : English (Various)
- Format : Select to initialise SD memory card



- Set Clock : Select to set current time and date – note that the camera usually requires the date and time to be set whenever the batteries are removed for more than a few minutes.
- Default Set : Select to restore configuration to factory defaults
- Auto Power Off : 3min (Off-10min) – switches the camera off after the specified period if left in the configuration menu.
- VolumeRec : high (low, normal, high) – sets the internal microphone sensitivity.
- VolumePlay : high (low, normal, high) – sets the playback volume



- System : Select to view or update camera software version (I have never needed to update the camera software)

The SD Memory Card

Just about any SD memory card can be used but if you intend to leave the camera taking photographs for an extended period of time you need to have a SD card of at least 8MB capacity. I usually leave my camera unattended for two weeks with a 16MB SD card installed. Utilising the settings given above after two weeks I typically have 4000-5000 images taking up about 12-14MB of storage. Don't underestimate the time required to review that number of images, it takes me about 30 min per 1000 images but I have had some practice. Out of 5000 images I usually end up with 50-100 "keepers".

The Tripod

Trail cameras are relatively light so almost any tripod should be suitable however there are a few things to bear in mind.

- The tripod will be outside for extended periods of time in all weathers so I would not recommend using an expensive tripod. I have been using Aldi brand tripods which cost about \$18. They are largely of a plastic and aluminium construction but they have a few ferrous components which corrode. I coat these components with a little grease to slow down the corrosion.
- The camera and tripod are relatively light and they have blown over in strong winds. To prevent this from happening I use a weight (actually a house brick) to stabilise the tripod. See the illustration below.

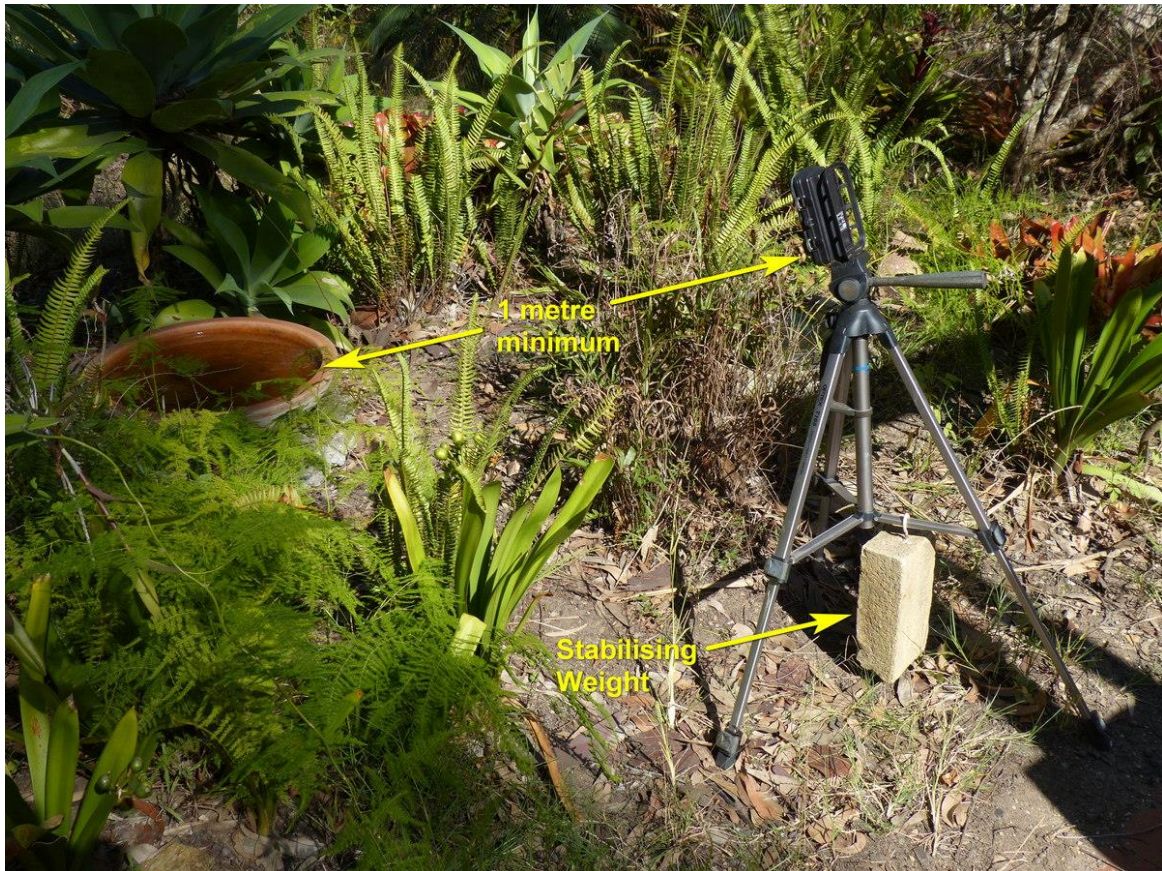


- Birds sometimes use the camera as a perch which can disturb the camera alignment. The poor design of the tripod mount on the camera means little force is required to move the camera relative to the tripod. To minimise this movement I use a foam rubber spacer between the camera and the tripod which results in a more stable attachment to the tripod. See the illustration below.



Setting Up

The photograph below shows the set up that I use in my garden:



Some things to consider when setting up:

- The camera is motion activated and will be triggered by anything moving within the sensor's range. This includes foliage being moved by the wind. In windy weather avoid having foliage in the field of view or choose a sheltered location.
- Sunlight reflecting off water will trigger the camera. Position the camera so that such reflections from the birdbath are avoided.
- Use a stabilising weight to ensure the tripod firmly grounded (see the note in the tripod section).
- Remember the camera can't focus closer than about 1 metre, don't be tempted to get too close to the birdbath otherwise you will have out of focus images.
- Framing the image can be a bit tricky as the camera does not have a viewfinder. The method I use is:
 1. Line up the camera by eye
 2. Switch on the camera
 3. Wait 10 seconds
 4. Wave my hand in front of the camera
 5. View the resulting image
 6. Adjust the camera alignment if necessary
 7. Repeat steps 2 to 6

I also use this set up for non-birdbath captures. I have had some interesting results from the compost heap and various other locations around the garden.

I hope these notes have been of assistance and wish you the best of luck in trapping your own birdbath visitors.

Roman Soroka

April 2018