

THE  
HIDDEN WORLD  
OF THE FOX

ADELE BRAND

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# The Fox Watcher's Toolkit

**I**F A SCIENCE TEACHER were to request a study species to demonstrate the natural world, his plea might be answered with a fox. In one slender orange frame, they provide an intriguing wild package of animal behaviour, ecological interactions, and human–wildlife relationships which is accessible, real and dynamic – which is more than can be said, at least in south-east England, for tigers, pandas or elephants. Foxes are a signpost that can guide our increasingly gadget-centric culture back to respect and awareness of the natural universe, and, perhaps, a better understanding of humanity's place within it.

This chapter lists a few activities that take advantage of the fox's presence in our midst.

## Photography

We might live in the age of the selfie but capturing pictures of other living creatures has never been more popular. It is also fair to acknowledge that it can be very addictive. What begins with a phone camera otherwise used for babies and Christmas parties can escalate into an endless variety of digital single lens reflex (DSLR) lenses, tripods and Adobe editing software. But at either end of the spectrum, it is a very rewarding hobby that makes even the most seasoned wildlife-watcher more observant and appreciative of their surroundings.

One caveat: the animal's welfare must come first. Most old-timers in the photography game can tell bizarre stories of watching phone-wielding tourists walking up to wild grizzly bears or getting chased by angry stags, but apart from human safety issues, there is also a risk of frightening the subject and making it abandon its food or offspring. Parks Canada's maxim is useful everywhere: if you make the animal change its behaviour, you are too close. When stalking wildlife with my camera, I do my best to keep to that philosophy. The perfect photo is one obtained without the animal even knowing that I am there.

What kind of camera is best for foxes? The first thing to consider is that you will need a considerable zoom. I use a 200–500 mm lens on my DSLR; on a fixed lens

camera, at least a 10x zoom is useful. This means that blurred pictures through camera shake can be a real problem, worsened by the fact that foxes often appear in low light, necessitating a slow shutter speed. Of course, there will always be one fox who strolls across the lawn at mid-day, but it is best to assume that most pictures won't be taken in ideal conditions.

There is no upper limit to the expense of wildlife photography; it can consume however much money you decide to invest in it. Fortunately, there is no end to the creative potential either. I haven't yet managed a picture of a vixen and four cubs trotting in silhouette under a golden spring sunrise, but every opportunity for a photograph gives a little more insight into their world.

## Trail camera (camera trap) photography

Like regular photography, this activity can be as expensive as you desire, although prices have come down somewhat in recent years. The idea is that you tie a specialised motion-sensitive camera to a tree or fencepost, and leave it there long enough for something wild to trigger it. There was a time when buying a trail camera meant importing it from the USA and braving custom duties, but these days they are easily available through Amazon, eBay, and other retailers large and small. Reconyx, Bushnell and Acorn are among the most popular models, al-

though the Chinese brands tend to be cheaper and can also work well.

I have used trail cameras in some of the world's most remote wildernesses for serious scientific research, but even when not capturing prides of lions in the Serengeti, they are undeniably great fun. Depending on your luck, a trail camera at the end of the garden might catch foxes making a 2 a.m. visit, an unexpected badger, or your neighbour's tabby. Of course, the wilder the setting, the greater the chance of photographing a shy species, although be aware of landowner permission requirements. There is also an inherent security risk to leaving a camera alone in a forest for a week. Specialised steel security cases for trail cameras are now available, which can be secured with a Python cable or high quality chain. Bicycle locks won't last a minute in the hands of a thief – I learned this the hard way. Regardless of the cable type, be sure to buy a high-grade padlock as well. However, undoubtedly the best safety measure for a trail camera is to conceal it as much as possible from public view.

If foxes regularly visit your garden, a trail camera will probably give new insights into their relationships and activity patterns, and might even reveal the presence of transients coming at lonely hours to avoid the dominant pair. You may catch some interesting behaviour too. Fighting, mating and playing with stolen shoes are much

more likely to be observed by a trail camera on constant duty than an intermittent human watcher.

Most trail cameras will give you a choice between still photographs and movies. The majority use infrared for producing night shots; there are still a few models that use a white flash, which produces an attractive colour image but risks higher disturbance to the animal. And, of course, it is more likely to be spotted by people; the white beam can be seen from afar.

I typically set trail cameras to shoot movies for thirty seconds. This is a compromise between getting a nice clip and not wasting hours of card space on footage of grass being shaken by the wind. And you will have misfires by the dozen, when the animal is just out of range, or the camera has been triggered by weather. If the camera is in a public place, you also run the risk of accidentally filming people, some of whom will realise this fact and react in remarkably odd ways.

A good trail camera site, then, is one with minimal use by humans and dogs. For foxes, a camera should be at eye-level – about 45 cm off the ground – and looking down a wildlife path rather than across it. Areas exposed to wind-shaken grass or branches are best avoided.

## Tracking

Humans have possessed cameras for only a blink on the timeline of our history, but tracking is as old as our species. Motivations may have changed since the Stone Age, but the quiet Sherlockian thrill of piecing together subtle evidence in the landscape is still one with great appeal.

Almost any surface can reveal clues to an experienced observer, but snow is of course the easiest medium. Fox paws are narrower than a cat's and have a smaller heel pad than a dog's, but the easiest way to distinguish them is that the trail will be neat and straight. If it meanders, or if human tracks are parallel to it, it is probably the work of a small dog. In a good quality print, you will notice that the two front toes are set slightly ahead of the two back toes, to the extent that a horizontal line can be drawn between them without crossing any pads. In dogs, the track is rounder, and the front toes are only just offset, so no line is possible.

Foxes are usually very loyal to their paths, and over time a track of slightly lower grass will indicate their movements. If this track is very worn – down to the earth – it may well indicate use by badgers too. Badger pawprints, for the record, have five toes in a straight line along the top of a huge kidney-shaped heel pad; in poor conditions, the fifth toe may not register, but the track is always much wider than a fox's neat print. With either sp-



ecies, try following the trail until it ducks under brambles or a barbed-wire fence. Can you see any snags of fur? Fox hair will not necessarily be orange, given how much white and grey is in their pelt, but it will be soft. Badger hair is angular and feels ridged when rolled between your fingers. Other signs will be identified through experience. Fox scat is smaller, darker and more twisted than that of most dogs, and will often contain berries or fur, or be grey with crunched-up bones. It may be placed on anthills or rocks as a scent message to other foxes, or on discarded toys and emptied caches. It smells musty-sweet, and their urine is perceptible to an alert human nose long after it has been deposited.

A heap of woodpigeon feathers in a park may be the work of a fox, sparrowhawk, or unfortunately a cat. A fox plucks a pigeon clumsily, biting through the primary feathers and leaving the quill cut neatly as if with scissors, while a hawk hooks them out with its curved bill, leaving distinct holes.

## Taking casts of tracks

This is surprisingly easy and is a good activity to share with children. You will of course need a clear fox track in reasonably firm mud or sand. If foxes regularly visit your garden, so much the easier; otherwise, have a look at the tracking tips in the previous section.

Apart from a footprint, you will also need plaster of Paris, water, and cardboard or thick plastic cut into four strips about 10 cm long and 4 cm wide. Arrange the strips to form a rectangle around the track, each piece upright on its long side, preferably pushed into the mud for stability. Mix up the plaster of Paris and the water, stirring until it is smooth. Then, pour it over the track until the liquid fills the rectangle.

It should take about fifteen minutes to set, dependent on weather and the mixture's consistency. Once it is firm, remove it from the earth, digging well under the cast to avoid breaking it. The best trick is to use a shovel or garden fork. You will find yourself lifting a kind of cake out of the ground, with a dense layer of mud and the cast on top. If the cast is fully set, the mud can be washed off without damaging the print, although some brushing may be needed to get rid of the final specks. Hopefully, if it has not cracked during the cleaning exercise, you'll have a nice wildlife memento with which to decorate your house or schoolroom.

## Keeping a wildlife diary

If the paper version seems too Victorian, a blog or Twitter account will chronicle records of your sightings just as effectively, and can allow you to share them with an audience of other wildlife fans. Normal safety guide-

lines for sharing personal information online obviously apply – in fact, they are heightened, because giving sighting locations on social media can be very dangerous to the animal.

That being said, your own private records should contain such details as date, time, weather and number of individuals observed. Even if your interest is primarily in foxes, please note any rare species that you happen across. Your local wildlife records centre will welcome the information.

## Casual scientific projects

At its heart, science is curiosity. Merely noting the presence or absence of a fox on your front lawn is in essence a scientific action. But those sightings become more enjoyable as patterns are determined. Even if you do not wish to sign up for a PhD and write a 250-page thesis, your fox-watching can still involve some research.

Most science, like most stories, looks at the contrasts and relationships between two or more variables or characters. So what to compare? Fortunately, there's one crucial variable that requires no special equipment to measure: *time*. Think about the year from the fox's perspective; every season brings its own challenges and opportunities.

Over the course of a year, patterns will start to emerge.

Why not start with recording all fox sounds that you hear? Learn the different calls – screams, chirps, courtship barks – and see how they change over time. Alternatively, if you consistently travel the same route at the same time of day – for example, on a train commute, or walking your dog – you may also notice trends.

If you have a group of foxes visiting your garden, try to recognise at least some individuals. Look for muzzle scars, chipped ears, distinctive brush tips, and general face shape. Distinguishing foxes is arguably easier than telling apart two tabby cats, and most pet owners don't struggle with that. Recognition of individuals makes fox-watching far more rewarding. Not only will you start to learn the unique personality of each fox, but you will also be able to make sense of their interactions with each other. Who is dominant over whom? Are some foxes greeted and others chased away? Is last year's breeding vixen lactating again this spring?

With persistence and some luck, you can piece together their stories.

## Science projects for students

For students seeking a research project for their A-levels or university dissertation, foxes offer almost unlimited potential. Here are just a few ideas:

- ♦ Interactions between foxes and cats in suburban gardens: are most encounters neutral, cat-dominated or fox-dominated?
- ♦ How does a scientific fox density estimate in a town park compare to the anecdotal estimates of 100 local people?
- ♦ Diet analysis of rural and urban fox scats: does anthropogenic food abundance differ?
- ♦ To what degree do mange records from a town for one year predict outbreaks in following years? (Wildlife rescue centres may be able to provide data.)
- ♦ What is the science content of 100 recent news articles about foxes, and how does this compare between tabloids, broadsheets, television and internet news?

More complex and expensive projects:

- ♦ By what mechanism do badgers reduce fox abundance?
- ♦ What factors predict an individual fox's susceptibility to mange: location, habitat, diet, age, exposure to rodenticides, etc.?

- ♦ Is fox predation on roe and muntjac deer additive mortality in the UK? Does this vary between arable farms and ancient woodland?
- ♦ Can the impact on fox density of removing deliberate feeding from a London borough be modelled?
- ♦ How does fox dispersal of plant seeds influence the species richness and distribution of woodland flora?
- ♦ What are the most effective methods of reducing road mortality in foxes and other canids, and how do these vary between road type?

## Resources

My corner of the web:

[www.adelebrandblog.wordpress.com/](http://www.adelebrandblog.wordpress.com/)

[www.facebook.com/awalkwithwildlife](https://www.facebook.com/awalkwithwildlife)

[www.youtube.com/sittingfox](https://www.youtube.com/sittingfox)

Useful sites:

Wildlife Online [www.wildlifeonline.me.uk](http://www.wildlifeonline.me.uk)

Help Wildlife (contacts for emergencies) [www.helpwildlife.co.uk](http://www.helpwildlife.co.uk)

Guide for treating mange: <http://www.foxwoodwildliferescue.org/2017/01/05/treating-sarcoptic-mange-in-red-foxes/>

Canid Specialist Group (International Union for the Conservation of Nature) [www.canids.org](http://www.canids.org)

The Fox Website (University of Bristol) [www.thefoxwebsite.net](http://www.thefoxwebsite.net)