

Badger Life and Farming. Scottish Badgers Briefing Paper. 28 05 18

This paper sets out basic information about badger life in relation to three issues recently raised by some farmers in parts of Scotland.

ONE: BADGER NUMBERS.

Badgers have been persecuted for centuries, to the point of near extinction in many parts of Great Britain. Badger-baiting, in which badgers are set against dogs in a pit, along with bear-baiting was made illegal in 1883. However, little changed. Snaring, shooting and digging persisted as part of Victorian gamekeeping practices and it was only the first world war that allowed some recovery of the population. The 1973 Badgers Act gave limited protection but allowed landowners to continue to kill badgers. Through the 1980's various legal protections were added but were ineffectual, resulting in the Protection of Badgers Act 1992, which outlaws interfering with the sett of a badger and thereby allows the law enforcement authorities more effectively to investigate badger crime¹. However, over the subsequent two decades further legal amendments had to be introduced to try to stem the continuation of this very persistent crime².

It is now illegal to dig badgers at all, the onus is on the person wanting to do something that might interfere with a badger sett to prove that their proposed activities will not so interfere, whether recklessly or deliberately, and any person who causes or permits such activity can be held accountable. It has taken the considered input of many people and all sectors of society to reach this point. It should be a success to be welcomed if the badger population is making a recovery – a recovery that is coming from a very low baseline (extinction in some areas) and has been held back over a century while criminal activities continued to flout the law.

History shows that recovery in badger numbers is contingent on stronger laws being in place; there is no argument to dismantle the hard-won progress of so many sectors in society over so many decades, particularly when success has only relatively recently begun.

Research has shown that the that killing of individual badgers can result in the loss of entire social groups. Many areas of suitable habitat still lack badgers or have fragile badger populations. The majority of lowland rural Britain still contains no badgers³.

There are significant and increasing pressures on the present badger population including from road deaths (around a fifth of the population are killed every year on our roads), the intensification of agriculture which is associated with the crash in populations of earthworms and insects which form the main part of the badger's diet and loss of suitable habitat, continued killing by shooting, snaring and other persecution, continued badger-baiting with dogs, and development which cumulatively deprives badgers of suitable areas to find shelter and food.

TWO: BADGER DIET AND FORAGING BEHAVIOUR

The range of foods consumed by badgers consists mainly of earthworms, insects, small mammals e.g. the young of rats/ mice/ voles/ shrews taken from the nest, slugs and snails, fruits, cereals, and tubers. "As the contents of their diet amply demonstrate, badgers are gleaners or harvesters of small, relatively immobile prey items, not active predators of large, fast-moving ones. Their basic foraging strategy is to meander slowly along, nose to the ground, poised to deal with whatever they find that is edible"⁴. "Most prey are either gleaned directly off the surface or are dug out of the upper few

centimetres of the soil”⁵. Grubbing with the snout can leave what are called “snuffle holes”. In grassland, sizable chunks of turf can be turned over to get at insect larvae such as leatherjackets and beetle larvae. Larger mammals are taken as carrion – rabbit, deer and (in Eastern Europe) wild boar hairs have been found in badger faeces.

A particular controversy surrounds the perceived killing of lambs. Roper says “such incidents are difficult to verify. It would not be surprising if badger were to eat, as carrion, lambs that were already dead, but the paucity of reports of lamb remains being found in faeces or stomach contents suggests that even this behaviour is rare”⁶. 30% mortality rates for lambing on high ground are routine, and in some winters e.g. March 2018, lamb and ewe mortality are significantly higher.

The Scottish Agricultural Science Agency (SASA) investigated ewe and lamb interactions with wildlife using field cameras positioned overnight in stock fields. They found that sheep with lambs didn’t act defensively when badgers passed through (though they did when fox came through), and badgers paid no attention to lambs or ewes as they made their way to their foraging grounds⁷.

When hedgehogs were more numerous and in areas of high badger density (Wytham Woods, 1992) studies showed that a proportion of hedgehogs would be taken for food by badgers. However, the two species have evolved together and shared habitat since time began, so the recent crash in hedgehog numbers needs another explanation. Between 2004 and 2012 the proportion of sites recording hedgehogs in the Living with Mammals survey fell sharply. “The State of Britain’s Hedgehogs”, a report produced each year by British Hedgehog Preservation Society showed that by 2015⁸ hedgehog populations were declining dramatically in areas where badgers do not live, and at the same rate as in areas where badgers do live. By 2018 the report shows that the catastrophic decline in hedgehog numbers has continued. In rural areas, they describe the reasons for the decline in hedgehog populations as follows:

(a) intensification of agriculture, which causes loss and fragmentation of habitat, loss of insect abundance attributed to pesticides and herbicides, and loss of wild nature’s food necessary for foraging animals to survive which puts hedgehogs in competition with every other species sharing the same shrinking habitat and similarly struggling to find enough to eat. “Insects are a vital component of the hedgehog diet and if our insect fauna has suffered anything like the declines reported from a German nature reserve last year (more than 75% since 1989), it won’t only be hedgehogs that are suffering from inadequate food.”⁹

(b) roadkill – at an estimated rate of 100,000 killed on roads annually it’s “unlikely that this level of mortality is sustainable”⁹.

(c) predation – this has been widely mis-used to point the finger of blame at badgers; however, the picture is a more complex interaction of variables than that. In fact, only where badgers exist in very high density (10 setts per square kilometre) were hedgehogs not able to co-exist⁹. Such high density of badger population is not the norm, and certainly not in Scotland; badger populations remain fragile in areas from where they had previously been extirpated, and absent from the majority of our rural lowland³.

The crash in habitat and food, combined with an unsustainable roadkill rate are the result of human activity, and by definition therefore something we can change. It would be ridiculous to blame badger for taking the last hedgehog in the wood, or for that matter the

last egg from the wader's nest, in an apocalyptic context where all species are under grave pressure from our intensification of agriculture and development of the built environment¹⁰. The public in Scotland favour a farm subsidy system whereby farming is rewarded for demonstrated actions in support of wildlife and the intricate links between ecosystems, of which badger is a part¹¹.

Lest we forget, badger is 'last man standing' after 50 years of humankind waging chemical and physical war on nature - badger has been harmed but survives. Let us not blame 'last man standing' for the loss of his friends.

THREE: THE THREAT FROM BOVINE TB VIA CATTLE INTRODUCED INTO SCOTLAND. NO TRANSLOCATION POLICY FOR BADGERS

Bovine tuberculosis (bovine TB) caused by the bacterium *Mycobacterium bovis* is an important problem for the cattle industry in Britain. Existing controls include testing and slaughter of test-positive cattle, with herd test frequency determined by local incidence, along with surveillance of all slaughtered cattle in the abattoir.

Scotland has had officially TB-free (OTF) status since 2009. The herd incidence is very low (0.2%) and stable and is largely driven by sporadic introductions of infected cattle into Scotland. Scotland uses a high sensitivity test (the interferon-gamma test) to ensure that the disease is eliminated by quickly removing cattle before it can spread. The IFNG test detects 90% of infected cattle. In Scotland 57% of herds are exempt from routine bTB testing. Others are tested every four years and at shorter intervals if risk is suggested.

Scotland's OTF status will not be lost unless shortcuts are taken or mistakes made by traders of cattle who import animals.

In Wales all herds are tested at least annually. In bovine TB risk areas in Wales there is 6-monthly testing, the high sensitivity interferon-gamma test is used, and cattle movement controls and farm biosecurity have been tightened. By 2016 these cattle-centred measures had achieved significant progress, with new bovine TB incidents at a ten-year low and 95% of cattle herds bovine TB free in Wales¹².

In England bovine TB has become persistent in cattle herds, mainly in the south-west. Several factors have contributed to this problem. Routine testing for bTB broke down following the outbreak of foot and mouth disease (FMD) in cattle in 2001. The routinely used skin reactor test leaves a quarter to a fifth of infected cattle in the herds undetected, to spread the infection to other cattle over a long period. Some farmers were deliberately keeping infected cattle in the herds and sending healthy cattle for slaughter as substitutes – an action called ear-tag swapping. When this last practice was discovered the government tightened up cattle-based measures – which included improved biosecurity, pre- and post-movement testing of cattle, backup use of the interferon-gamma test and surveillance of abattoir procedures. There is evidence since then of a slowing down in the incidence and prevalence rates in the high risk area's¹³.

Hugely controversially, the killing of badgers has been made a main plank of government policy in parts of England. Wildlife can become a reservoir for bovine TB under certain conditions. In areas where bTB is rife in cattle herds a small minority (15%) of badgers can reach infectious status¹⁴. The "industry-led cull" of badgers in England sets out to

eradicate all badger social groups in an area. If left alone, “the fact that badgers are territorial means that opportunities for the disease to spread are limited.”¹⁴ Indeed the evidence from a ten-year scientific trial shows that the disruption of social groups caused by culling makes matters worse by spreading any infection further afield – an effect called “perturbation”. The conclusions were that “badger culling can make no meaningful contribution to cattle TB control in Britain”¹⁵ and “weaknesses in cattle testing regimes mean that cattle themselves contribute significantly to the persistence and spread of disease in all areas where TB occurs, and in some parts of Britain are likely to be the main source”¹⁶.

The Science of bovine TB transmission

A computer modelling study by the Queen Mary University of London indicated that reducing the length of time between cattle tests by one month is 26 times more effective than badger culling¹⁷.

Computer modelling carried out by scientists at the Boyd Orr Centre for Population and Ecosystem Health, University of Glasgow, identified that the control of bovine TB in cattle could be most improved by increased frequency of cattle tests and improved farm biosecurity¹⁸.

Farm security in Scotland relies on every farmer adhering to the stringent pre- and post-movement cattle testing regimes that are in place. Scottish Badgers has applauded their commitment historically. There are significant cattle movements into Scotland from Cumbria, where some cattle dealers have been bringing in cattle from high risk areas, NI and the Republic of Ireland, to be sold through local markets. Four to five hundred live cattle movements from other parts of England into Cumbria take place every month. Farmers were warned by DEFRA in 2015 to get a grip on their cattle movements into Cumbria if they wanted to prevent bovine TB from coming into their herds, yet a substantial number of imports from high risk areas have continued. Each year sees approximately 6 new herd incidents of bovine TB in Cumbria from imported cattle.

With the Actiphage¹⁸ test now available privately to farmers in England it becomes possible to directly detect live mycobacteria in milk or blood, and it can also distinguish between an infectious and a vaccinated animal. This allows infected cattle to be swiftly removed from herd, rooting out reservoirs of infection - currently, a quarter to a fifth of infected cattle remain in the herds to spread further infection. This paves the way for new types of disease control when vaccines become available in future, including security for Scotland against sporadic introductions of infectious cattle.

Scottish Badgers has always had and enacted a policy of no translocation of badgers

We do not translocate badgers, nor know of anybody else in Scotland or elsewhere who does so. We completely support the efforts of every sector to keep bovine TB out of the country and have always applauded the commitment and determined work of Scottish farmers to keep bovine TB out of their herds.

SCOTTISH BADGERS – WHAT WE DO AND HOW WE SURVEY FOR BADGERS

One of the main aims of Scottish Badgers, as well as providing education, information and advice for the public about badger life, is to survey in rural and urban areas, to build up an evidenced record base of badger setts. This is the main activity of our members who may also undertake sett monitoring throughout the seasons at a sett in their home locality.

We provide training in how to survey and record, and offer accredited training for those who want to acquire competencies at a higher level so they can potentially assist the work of the Police, SNH, Forestry Commission etc.

A badger sett is the structure where a badger lives. A badger social group occupies a territory which can be a kilometre around the sett or more. The main sett is used for breeding and a daytime retreat. It may have an annexe close by for overspill. There are usually a few subsidiary and outlier setts dotted in the territory, and these are small with one to a few entrances. Badger setts are composed of a network of tunnels and chambers, often excavated into a slope; they usually have D shaped entrances and a large spoil heap of excavated soil. There may be foot prints, hair, paths, dung-pits or old bedding discernible nearby, but the absence of these is not reliable evidence of absence of badgers – such signs can be absent in winter e.g. when activity levels are low, the ground is frozen, where badgers live in rocky clefts, or when breeding is not ongoing. On occasion a badger might take shelter under decking, a shed or porch; this is usually temporary. Setts in Scotland are mostly located where they have cover, such as in woodland, but also occur in disused industrial areas, hedgerows or remnants of rough cover.

Surveying in practice:

- We survey in small groups of 2 to 4 in order to be safe, quiet and un-intrusive
- We survey in the earlier part of day, in order to avoid leaving human scent near a sett or paths. Human scent during the late afternoon could deter badgers from coming out at night to feed, which could cause risk to nursing mothers and dependent young
- Our survey training sessions are normally undertaken in countryside parks or nature reserves, and in partnership with their ranger services, so that we can be sure of minimising intrusion on the natural environment and on others' enjoyment of it
- If people want to watch badgers in their own natural environment we encourage them to contact one of the organised badger watches in Scotland, to get the most out of their experience and to be sure wildlife is not disturbed
- We encourage anyone wanting to use trail cameras to learn and deploy badger-friendly methods. Where facilities exist for badger-watching via a CCTV link we encourage their use as these are least likely to disturb badgers. Some holiday accommodation in Scotland offer these facilities.

Survey records are kept on a Scotland-wide confidential database by Scottish Badgers in a secure and protected way. They are used only for the proper purposes of the charity, such as to assist investigating authorities in the case of a crime, and in order to prevent harm to setts and badgers in relation to human activities including development planning, construction, new roads, forestry, agriculture and other land uses. We do not undertake commercial activities or consultancy, which is the remit of ecological consultants.

“Let us give beast and bird and flower the place to live in its own right” F. Fraser Darling

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