Cyfoeth Naturiol Cymru
Natural Resources Wales

Fact Sheet

Deterring birds from farms, fisheries, airfields, landfill sites and urban environments

Avian deterrents can be auditory, visual, chemical, exclusion, habitat modification and lethal measures, but they vary considerably in their effectiveness. Trapping and lethal shooting can only be carried out under a licence from Natural Resources Wales (NRW). General licences cover certain species for particular purposes: anything else requires an individual licence. Please refer to the NRW web site - apply for a permit – Protected species licensing to find out more.

Auditory deterrents

1) Gas cannons can be effective if the timing and location of firing is varied, but they cause a noise nuisance if used close to housing or areas frequented by the public.

2) Pyrotechnic cartridges produce a bang and flash of light, and are fired from rockets or modified pistols / shotguns. Rope fire-crackers are relatively inexpensive alternatives but can cause a fire hazard. Both methods are effective in areas where the noise is considered acceptable.

3) Bio-acoustics are recordings of bird alarm or distress calls, which are effective when used on the same species of bird as the one recorded, or one that is taxonomically related. Research has shown them to work for gulls, herons and corvids in particular. They may be less effective against pigeons and Canada geese, which do not produce readily identifiable distress calls.

4) Ultrasonic devices are not thought to be effective against birds, as most birds are unable to hear in the ultrasonic range. They could also cause unacceptable disturbance to bats.

5) Sonic devices and high intensity, artificial sounds, are less effective and birds can become habituated to them unless they are varied regularly. The noise they generate may be considered unacceptable by the public.

Visual deterrents

1) Lasers are effective against cormorants, in particular, when light levels are low. However, they are expensive and should not be pointed at the human eye.

2) Dogs are one of the best deterrents, especially when trained working dogs, such as border collies, are used. Birds do not become habituated to a trained dog which responds well to commands and can pursue them off the site.

3) Humans can be very effective, especially if mock 'wing beats' are made. The person should stand in full view of the birds, silhouetted against the sky, raising and lowering straight arms at a rate of around 25 beats per minute.

4) Scarecrows tend to be useful for a limited time only, although their efficacy increases if they are dressed in loose-fitting clothing with streamers that move noisily in the wind.

5) Raptor models can be very useful, particularly if they are animated and frequently moved.

6) Replica or real corpses of the target bird can deter others, if they mimic dead or injured birds. Real corpses only work whilst in good condition.

7) Balloons are cheap but only work in the short-term. Their effectiveness increases if they are painted with a pair of 'eye-spots' consisting of bright concentric rings.

8) Kites and kite-hawks tend only to be effective over a small area and for a short time.

9) Falconry works well, especially when falcons are used (rather than hawks), as they are specialist predators of birds and will pursue them until they are chased off the site.

10) Radio-controlled model aircraft have been used successfully to scare cormorants and herons from water bodies. Raptor-shaped models are particularly effective.

11) Lights are not generally useful deterrents during daylight hours, although powerful strobes will affect pigeons and lapwings in particular. They should not be used where they would cause a nuisance.

12) Mirrors and reflectors are very cheap and work against waterfowl, gulls and some herons. Foil pie-dishes suspended from twine are simple, efficient deterrents that can easily be moved from one place to another to prevent habituation.

13) Tapes, including hazard warning tape and Mylar tape, can combine visual, auditory (as they 'hum' in the wind) and physical exclusion, increasing their efficacy.

14) Flags, rags and streamers are cheap and simple. They are most effective when partially hidden, when they are perceived as a potential threat. Black flags made from 60x90cm sheets of plastic are the most effective type against waterfowl.

15) Dyes and colourants are easy to apply to water and can be useful for deterring water birds. Orange appears to be the colour most strongly avoided.

Chemical deterrents

Chemical deterrents can be useful in crop and forestry protection. **Aluminium ammonium sulphate** is one that is approved for use in the UK. Behavioural and tactile deterrents used in some countries are not licensed for use in the UK.

Physical Exclusion

1) Nets can be used over crops and aquaculture facilities and are extremely effective at preventing damage by birds. Nets are recommended for use over landfill sites close to airports. Netting should be kept taut to prevent wildlife become ensnared in it, and will require regular checking and maintenance.

2) Wires are cheaper than netting and are effective if correctly spaced. Overhead wires should be set every 2m to deter cormorants, every 126cm for gulls and every 63cm for mergansers. Monofilament line can be used to reduce visual impact.

Wires can be installed around ponds to deter herons: 2-strand electric fencing, placed 30cm from the water's edge, will exclude herons and egrets; non-electrified wires placed at 20cm and 35cm above the ground are effective and extremely cheap.

3) Anti-perching devices include simple wires, coils, gels or spikes. They all prevent birds from landing or gaining purchase on a surface. Spikes with sharpened tips are illegal for use in the UK: only those with square-cut tips can be used. Gels must be 'skinned' immediately after application, as sticky gels would be illegal.

Habitat modification

1) Sward height: at airfields, long grass (15-20cm) is less attractive to most birds than short grass (5-10cm). It can, however, shelter small mammals and attract raptors. Reducing fertiliser use discourages geese from feeding.

2) Food removal is essential wherever possible to deter birds. In urban situations, people should be advised not to feed birds, and food waste cleared away regularly. Farms should use bird-proof livestock feeders, feed livestock indoors, or change to liquid or large-pellet feeds to reduce losses to birds.

3) Shrub planting near the water's edge can deter predation by herons, as they choose open sites to fish where they can easily scan for the presence of predators.

4) Water spray devices can be useful on small fishing lakes, as the spray prevents birds from seeing fish in the water.

5) Fish refuges and vegetation cover are extremely useful for protecting fish from predation. Refuges can be a simple stock-fencing cage containing brushwood, old Christmas trees etc, shaded to attract fish. Floating refuges or 'eco-islands' with emergent plants are valuable as their roots provide a safer area for fish. Water weeds, tree roots and marginal vegetation all provide good cover for fish.

Lethal control

1) Lethal shooting can only be undertaken if covered by a general licence (for the correct species and purpose) or by an individual licence. In general, shooting has little impact on the population, as the numbers shot rarely exceed those replaced by immigration and breeding. However, shooting can be effective as an aid to scaring, but only when used as part of a wider bird scaring programme.

There is little objective evidence to demonstrate that lethal shooting has a greater scaring effect than non-lethal shooting e.g. by firing blanks, although it is widely reported to be the case by practitioners.

2) Egg destruction can be carried out under licence for certain species and purposes. The most successful technique is replacement of eggs with dummy eggs, and the treatment of removed eggs by chilling (after which they can be replaced in the nest). Replacing the eggs encourages the parent birds to continue sitting on the eggs rather than laying a new clutch. Pricking eggs is not recommended as chicks can still develop, but often with abnormalities. Oiling is also not entirely effective, as the oil rubs off on the parents' feathers and has to be repeated three times during incubation in order to be reliable. There is also some doubt over the legality of using mineral oil as a 'biocide'.

Further information on bird licences can be found on the NRW website under applying for a permit – protected species licensing – UK protected species licensing.

Further reading

Review of international research literature regarding the effectiveness of auditory bird scaring techniques and potential alternatives. Bishop, J., McKay, H., Parrott, D. and Allan, J. Defra December 2003.

Protecting fisheries from cormorants – the use of fish refuges. Centre for Environment, Fisheries and Aquaculture Science (CEFAS).

Reducing the impact of fish-eating birds – the use of nets and wires. CEFAS.

Fisheries and the presence of cormorants, goosanders and herons. CEFAS.

Birds and their control in non-agricultural environments. Natural England, Welsh Government (WG) and NRW.

Crows. WG and NRW.

Birds: problems on livestock units. DEFRA and WG.