**Use of ‘drones’ to survey birds and their nests**

Drones (also referred to as unmanned aerial vehicles (UAVs), unmanned aerial systems (UASs), small unmanned aerial surveillance aircraft, or remotely piloted aircraft systems (RPAS)) are being increasingly used for both recreational use and for environmental research, monitoring and survey. They are proving to be a valuable means of surveying sites that are otherwise inaccessible or very costly to survey, and there are now examples of their successful use to monitor areas such as remote breeding seabird colonies (Sarda-Palomera *et al*, 2012, Hodgson *et al,* 2016).

However, if used inappropriately or unwisely, there is a risk of disturbance to birds. Such disturbance at seabird colonies can result in mass breeding failure as alarmed birds flying off their nests can dislodge eggs and young from the nesting ledges. Similarly, repeated disturbance of wintering waterbirds while roosting or feeding puts additional energetic demands on them when they may already be stressed.

As such, while recognising that drones are anticipated to play an increasingly frequent and varied role in wildlife monitoring and ecological science, it is important that careful consideration is given to the likelihood of disturbance and potential impacts before deploying them.

The use of drones in any situation and for any purpose is governed by CAA rules (see <http://www.caa.co.uk/default.aspx?CATID=1995)>; additionally, when using a drone to survey any bird species, the user must ensure that they are acting lawfully with regard to the Wildlife & Countryside Act. If the drone is to be used within a Special Protection Area (SPA) a Habitat Regulations Assessment (HRA) may be required to test whether the operation of the UAV will have a likely significant effect on a given qualifying feature of that SPA.

Drawing on the basic principles of use of drones set out by Aspinall (2015), NRW recommends the following:

1. All relevant legislation regarding the safe and proper operation and use of drones must be followed (see the CAA website).
2. Ensure that the landowner’s permission is given before flying a drone.
3. The welfare of birds and other wildlife, and the value of the habitats in which that wildlife is found, are more important than the drone and its use.
4. Birds and other wildlife should not be harassed or disturbed by drone flights.
5. Drones should not be flown over nesting areas, colonies, roosts and important feeding areas, unless a scientific or conservation need can be demonstrated, and as long as fulfilling that need is not outweighed by potential impacts on the target population.
6. If it is considered that the use of a drone is likely to inhibit normal bird behavior, or may solicit an adverse reaction by the birds to the drone, then the flight should not be made.
7. Where the use of a drone is likely to cause disturbance to any bird species that is listed on Schedule 1 of the Wildlife & Countryside Act (1981), alternatives must be sought. If potential impacts cannot be avoided, a licence must be sought from NRW, setting out the purpose for which the drone is to be used.
8. Where the drone is to be used on an SPA, it may be necessary to conduct an HRA assessment and NRW advice should be sought.

**References**

Aspinall, R. 2015 Drones, and the need for a code of conduct. *British Birds*, May 2015

Hodgson, J.C.*et al*. 2016. Precision monitoring using unmanned aerial vehicles. *Sci. Rep*. **6**, 22574.

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