

Great Bustard LIFE+ Technical Working Group

No.1 – Nest Protection & Nest Monitoring

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24 attendees



NEST PROTECTION

- **Overview of previous nesting attempts**

Nesting attempts so far have taken place in grass, winter wheat and oilseed rape. For those in grass, there was no intervention. In wheat, staff have sat in the tractor while spraying, and booms were collapsed while passing over the nest. A female has also been found and flushed from wheat while spraying. Birds have nested at the same time each year, usually being on eggs during May. This means annual conflict with spraying of wheat with Flagleaf fungicide in the third week of May.

- **Location of nests, use of satellite transmitters**

It is thought that, to date, most nests have been found and with more resources available for monitoring this should continue. Efforts will be made within LIFE+ to publicise the project, to encourage farmers and tractor drivers to report bustards. If observations identify a pecked head (resulting from copulation) and feeding frenzy, this indicates that the female will soon nest. Females will tend to use the same site each year, whatever is planted, leading to some inappropriate choices but making it easier to find their nests in future years.

Various suggestions were made of ways of using satellite transmitters to locate nesting females: solar-powered PTTs to extend battery life; recatching birds to retag once they reach breeding age, although this has been avoided because of the injury risk; setting transmitters to switch on at a certain age, although the priority at the moment is to use the transmitters to monitor post release survival. New tags, with GPS transmitters using the mobile phone network, are also in development. These are an order of magnitude cheaper and would provide a live update every day. Battery life on these still needs to be extended.

- **Nest protection measures, for other great bustard projects and other ground nesting species**

In Hungary, 10-20ha plots are prepared for nesting bustards, with 20m strips of different potential breeding habitat (alfalfa, annual legumes e.g. autumn pea, winter cereals, fallow, rape for winter, short grass). Farmers are not allowed to cultivate ground until July 15 (through the agri-environment scheme). Females are faithful to the site but can choose different habitat each year depending on growing conditions. There is also a 400ha pen, mostly grass, with 13 breeding females in loose clusters breeding in both grass and cultivated land. Young birds can be released here. Foxes (priority), hooded crows and wild boars are controlled. No fencing is used around nests.

In Austria, birds are attracted to bustard cover crops, with a succession of strips to create a mosaic with lots of edge effect. The strips need to be fairly wide (10-15m minimum) so foxes do not hunt along them. A no tractor zone is established during the breeding season to minimise disturbance. The situation in the UK is that disturbance from spraying can only be avoided if the nest is found in advance.

In Germany, half of nests are inside and half outside fenced enclosures. Outside the enclosures, hatching success is significantly lower, and fledging success is almost zero.

Management of crop to halt growth has happened with stone-curlew, with mixed success, but is very risky with bustards. A female will come off the nest twice per day, morning and evening, for perhaps 30-40 minutes, allowing a short window for any intervention. However, if a female is flushed once, there is a 50/50 chance of desertion, and twice leads to almost inevitable desertion.

For stone-curlew, predation does happen, but is not a serious problem – it is controlled by the location and management of nesting plots. With bustards, there is no critical variable available to draw them to a safe nesting site.

- **Main issues foreseen, proposals to deal with these**

Pre-release predator exposure has been considered, but never used for bustards, as there is little scientific evidence that it is effective. It has been used in the crane project. The plan has been to rely on a growing population nucleus to educate newly released birds, but the critical mass has not yet been reached. It is not thought that any great bustard eggs have been taken by predators. Foxes, crows and magpies are controlled by the farmer around the release site, but chick predation remains a problem.

The only significant problem for nests is if birds are tempted into rape. This can appear suitable when birds are choosing a nest site, but grows very quickly and becomes very difficult to get in or out of by flight, making birds vulnerable to foxes. If a female shows

signs of choosing a rape field, it is important to disturb it regularly to keep her away, even if it means she does not nest at all. The rape variety DK Cabernet, which is slow to start growing in the spring then grows very quickly, is particularly bad for great bustards.

It was recommended that as the second chick in a great bustard brood tends to die anyway (there is good published evidence for this from Spain), it makes sense to take the other in the first few days after hatching and rear it. The critical time is the first five days, when the female will tend to feed only the stronger begging chick. At this time the stronger chick could be fitted with a tiny radio transmitter for monitoring. The 'rescued' chick could be reared for 5-10 days and either returned to its mother (or even to another, better mother), or added to the Saratov chicks for release with them. This should happen as a policy, rather than only when it is clear a second chick is struggling. In addition, if a nest containing fertile eggs is abandoned, it makes sense to retrieve and incubate the eggs, because of the huge value of each egg. This has been discussed and Hawk Conservancy staff are ready to assist.

However, bustards are protected through the Game Acts, which include a summer close season, and there is no provision to license catching during the summer. Removal of eggs/chicks would be a technical offence under the Wildlife & Countryside Act, but it is very difficult to change the law and something that will need to be resolved. Concerns included: is this appropriate given that we want to prove viability in circumstances as natural as possible; do we have sufficient confidence that the second chick will always die in the wild; although this is a proven technique in other reintroduction programmes there are no examples in the UK.

- **Egg crime**

Wiltshire Police have an egg protection plan which applies to bustards. A problem of equal significance is disturbance caused by birdwatchers and photographers – if a nest site becomes known, a reaction might be necessary.

NEST MONITORING

- **Nest monitoring to date**

The requirements of the LIFE project are to (a) protect bustards and their nests from direct threats, including the development of an effective protection strategy, (b) determine causes of mortality for adults, eggs and chicks and (c) determine the most suitable habitats for nesting bustards. Thorough surveys will take place during the

breeding season to gather information on nest site selection, age at first breeding, breeding productivity and factors affecting breeding success.

No formal diary of the movement of birds has been kept, as it has not been possible to watch for long enough, and observation effort cannot be quantified. This needs to be improved, but lots of resource required.

Why do we need to monitor nests? Early in the season, we would like to know which male is getting the copulations, then where females go to nest. After nesting, as a minimum, we need a daily check that the female is still sitting. Monitoring tells us what the female likes, on many levels – how she behaves on the nest, when she leaves, how long she is away, where she goes – and crucially it tells us about hatching and fledging success. It could also tell us how nests fail. If the female has to go too far to feed while off the nest, or has to take chicks too far, this will increase the risk factor. There is some research on how far birds nest from hedges or disturbance, which could help analyse potential breeding areas.

To reduce human effort, it could be possible to use a camera which takes a photo every second, then watch the resultant film later. This has a range of 100m, or more with a telescope attached, and Bath have two available for use. But people are able to collect additional information, and it is important to be flexible at this stage because we do not know enough to write a strict protocol. Cameras might be useful to identify which of the males is responsible for copulation.

Once nests located, we will define what information should be collected: where they are nesting, what they do on the nest, where the females are going, how often they leave the nest, where and how far do they take their chicks, success/outcomes, from a statistically valid sample of continuous watching. We know that incubation is 23-28 days, and we need to identify the nest position to identify threats, regularly observe behaviour to identify prolonged absence of the female, and follow females and chicks to determine how far she takes them and to which habitats.

In addition to catching chicks within a few days of hatching to fit a radio transmitter, it may also be appropriate to catch, wing tag and satellite tag nearly-fledged young. We do need to know more about young birds, but the birds are only big enough to tag when they are able to fly weakly. Chicks are caught in this way in Spain, but difficult to get information about risk of injury.

It was suggested to draft a flow chart of action required, along the following lines: inform farmer of nest; identify dates of field management; take immediate action if

female abandons nest; otherwise monitor incubation; if more than one chick then hand-rear the smallest one for 5-10 days or until oldest chick is semi-independent, then reintroduce chick to mother.

- **Nest monitoring techniques, for other bustard projects, other ground nesting species**

In Hungary, population of Hortobágy NP monitored closely, currently around 150 birds, increasing recently after a steep decline. Nests located by observation by a team of five experienced people, covering 30000ha, working intensively for 2 ½ months and driving 3000km per person per month. Only 15-20 nests found, thought to be half the total. Individual variability in behaviour – female may arrange nest during and after sitting, approach and sit quickly, crouch and slowly walk towards the nest. Once found, precise site triangulated. Reliance on farmers, tractor drivers and hunters to find many nests. Once a nest is found, the number of subsequent checks depends on the threat level – if there is no threat, it will not be revisited until hatching.