Emergency Action for Dartmoor's Ring Ouzels (*Turdus torquatus*)

Productivity & Habitat Assessment Dartmoor 2011

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Summary

Background

Ring ouzels have been well known as a breeding bird in Devon with historic strongholds being found on both Dartmoor and Exmoor. However, there is evidence that the Devon population has declined since the late 1960s (Moore 1969) reflecting the species' decline throughout the UK (Status: Red list, UK and Dartmoor BAP species). The small Dartmoor population now represents the only breeding population in the south west and the most southerly breeding in the UK; the final breeding record on Exmoor was in 2002.

Previous surveys of the Dartmoor ring ouzel (Jones, 1997, 1998, 2003 and 2005; Stanbury et al. 2006, Baker 2010) suggest that the population on Dartmoor has declined by approximately 50% since 1979. A significant contraction in its breeding range across the moor has also been observed, although the population within the north-west sector of the moor has remained relatively stable. In recognition of the need to review the status of ring ouzel on Dartmoor and the existing land management regimes within its breeding habitat, a workshop was held in 2010 resulting in the first species specific study of ring ouzel for five years (Baker 2010). Prior to this no detailed survey of ring ouzel nest success had ever been implemented on Dartmoor. The 2011 study represents a continuation of this work and is part of a two year study funded by the SITA Trust. The study is being carried out by the RSPB with assistance and additional funding from the Dartmoor National Park Authority (DNPA), support from Natural England (NE), Ministry of Defence (MoD), Duchy of Cornwall (DoC), the Dartmoor Study Group (DSG) and the British Trust for Ornithology (BTO).

Key aims and objectives of the 2010 and 2011 surveys.

- To gain knowledge of the nest productivity of the Dartmoor population of ring ouzel by locating all breeding ring ouzel pairs within three areas of north-west Dartmoor, and further, to monitor the progress of the each nesting throughout the breeding season.
- To identify the bird's specific habitat requirements, looking at suitable nest locations, the quality, size, topographic and spatial relationship of the foraging areas to the nest site and to neighbouring conspecifics, by recording the position and basic habitat parameters of all the nest sites.
- To attempt to identify causal effects for the observed decline of the Dartmoor population by recording behaviours relevant to their nesting/breeding ecology such as interspecific interactions (e.g. with blackbird *Turdus merula*), the presence and impact of predators and incidence of human disturbance.

- To make recommendations for actions to support the conservation of Dartmoor's ring ouzels.

Additional aims and objectives of the 2011 Survey

- To build on information collected during the 2010 survey on home range and principal forage areas and through detailed botanical survey of these grassland habitats, consider how the quality of foraging habitat might impact Dartmoor ring ouzel productivity.
- To provide supplementary feeding for selected pairs of adult birds as an 'emergency measure' in an attempt to boost productivity.

Method

Two full-time surveyors (or equivalent) were employed throughout the survey period. A combination of systematic searches within valley bottoms, tor formations and suitable breeding habitat, combined with extensive periods of quiet stationary observation was found to be the best approach for finding birds. Site visits were carried out whenever weather and live firing by the MOD permitted. Nest locations were recorded with GPS, photographs and sketch maps to aid relocation and repeat visits made to monitor active nests every few days (maximum interval a week). Considerable care was taken to minimise disturbance to the nesting birds and to avoid drawing the attention of predators to the nest sites. Where sites initially appeared unoccupied further visits were made throughout the season to locate overlooked birds or those that had moved locality. Additional information routinely recorded during each visit included prey items taken by the ring ouzel, the presence and number of predators in the vicinity of the nest site, human presence and impacts, interactions between ring ouzel pairs and between ring ouzel and potential competitor species. In order to more accurately identify nest predators an infrared motion detection camera was employed whenever the nest situation allowed. Observations were made to identify the areas used for foraging by individual pairs, these areas were mapped and botanical assessment was made of the vegetation composition using a system of randomly selected quadrats, the aim being to generate a detailed description of desirable forage habitat in relation to the National Vegetation Classification (NVC). Plans to engage in supplementary feeding with live mealworms were abandoned as no situations deemed suitable were identified.

Results and Discussion

A total of 19 nest sites were located, with two further nesting attempts recorded but without detailed nest history. These 21 nesting attempts were the product of 10 pairs (although occasional loss of continuity of observation may mean the total could be as high as 12 pairs). Of these known nests, 10 failed (predation) while the remaining broods produced 39 fledglings. Predation appears to be a suppressing factor for Dartmoor ring ouzels with a loss of 48% of nests and a wide range of avian and mammalian predators present. The predation factor may be exacerbated by human disturbance. Where human disturbance to the nest is frequent and the sitting female regularly flushed this may increase the likelihood of nest discovery by predators. Positive identification of a nest predation by fox (clutch and incubating female) was recorded by infrared motion camera.

Within the limitations of the survey the disappearance of several pairs after failing and the small sample size, the productivity of the Dartmoor population of ring ouzel in 2011 was twice that recorded in 2010 (1.5). In 2011 a minimum of 3.2 (maximum of 3.9) fledglings per pair was recorded. Fifty-two percent of broods successfully fledging, 29% of pairs were double brooded with around 10% attempting a third nest after experiencing at least one nest predation. Given the small dataset, caution should be used when interpreting the results and deriving conclusions. The figures suggest that in 2011 ring ouzels fared better than in 2010 with 19 nesting attempts producing 39 fledglings compared to 8 to 9 nesting attempts producing 12 fledglings in 2010. This may reflect the increased monitoring coverage (two surveyors versus one in 2010) although this increase in monitoring could be slightly offset by the inclement weather conditions in 2011 which hindered observation. Additionally, the 'new' Lake Down site and Tavy Cleave both had relatively high productivity, 8 and (likely) 14 fledglings respectively, skewing the 2011 results and accounting for approximately 50% of the 2011 productivity figure. Little monitoring coverage of Tavy Cleave was possible during 2010.

While meteorological conditions were worse from the observational point of view, despite a very hot and dry start, the following wetter weather and damper soils may well have had a positive bearing on food provision by adult birds and therefore promoted higher productivity.

Nest locations were variable (e.g. in holes under rock, in western gorse, within crevices on tor formations and in trees) and associated with steep sided river valleys, tracts of broken ground with boulders, bracken, gorse and bilberry. Foraging activity was concentrated on areas of short sward within 600-700m of the nest with forage journeys in Tavy Cleave and Lake Down significantly shorter. Foraging habitat mainly comprised of **NVC U4a** (*Agrostis capillaris – Festuca Ovina* typical sub-community) and **NVC U4e (***Agrostis capillaris – Festuca ovina Vaccinium myrtillus – Deschampsia flexuosa* sub community)**.** Later in the season, particularly at Tavy Cleave, feeding on bilberry was observed with adults feeding new fledglings on the berries.

Mature stands of western gorse *Ulex gallii* and ling *Calluna vulgaris* were frequently used for nesting and also provided cover for the new fledglings, enabling them to disperse into the wider environment away from the nest in relative safety. Maintenance of some mature stands of western heath in potential nesting areas and dispersal routes was identified as important and to this end some suggested 'no burn' zones were identified.

Summary of recommendations:

- Maintain the valuable DNPA voluntary ranger engagement with the project to help minimise disturbance at nest sites in locations popular with visitors.
- Wherever possible, minimise disturbance as a result of military training and Ten Tors activities, and where possible, other recreational activities by promoting and following the Rare Bird Sensitive Areas map.
- Maintain the areas of U4a and U4e grassland present in the vicinity of the known ring ouzel nest sites.

- Attempt to create more favourable vegetation in foraging areas if it is not present in recent historical nesting habitats for this bird.
- Create gorse, heather and bilberry no-burn areas where this method of management could be potentially detrimental to ring ouzel breeding sites.
- Assess the extent and condition of bilberry stands across the moor (perhaps from NE existing information).
- Review the benefits of colour ringing the Dartmoor ring ouzel population to help assess population size and survival.
- Consider using pre-fledging weighing of juveniles to assess body condition for comparison with Scottish research sites.

Photo: Nick Baker

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