**Curlew, released gamebirds and foxes**

**Comment on SOS Save our Curlews Campaign Report 2022**

**GWCT Research November 2022**

The recent (2022) SOS Save our Curlew Campaign Report provides some very useful and alarming information on curlew breeding success in Shropshire over the last five years. Predation has been the main cause of low productivity, with the fox highlighted as the main culprit (although see footnote below). In Section 3 the potential effect of gamebird releasing on foxes and other predators is discussed and the report concludes that gamebird release is the main cause of curlew decline in Shropshire. At the end of the report the question is asked ‘is there any other plausible explanation for the populations of predators and scavangers in the landscape being much higher than their naturally sustainable levels, apart from gamebird release?’.

Well, the current research base indicates that known or potential drivers of high meso-predator abundance such as foxes, which are common throughout much of the Northern hemisphere, include forestry and agricultural influences on landscape fragmentation and configuration, aspects of livestock farming, high abundance of deer, lagomorphs and other food resources (including gamebirds), the extirpation of most apex predators and suppression of those that remain, and urbanisation as a key source of anthropogenic food. As an example, ongoing research work on fox diet in the New Forest, where curlew productivity is also perilously low, suggests that anthropogenic food waste is an important resource there.

GWCT research has investigated and published on negative ecological consequences of releasing gamebirds for shooting for over 20 years (Sage et al. 2020). It is reasonable and healthy to question the scale and other aspects of this activity and the GWCT is open to the idea that releasing for shooting might have an influence on the density of avian or mammalian predators in some situations, and that this could have an effect on other wildlife. However, it is too simplistic to suggest that this happens wherever gamebirds are released. The problem is compounded when the evidence around an issue like this is not reported in a straightforward, complete, and balanced way. Section 3. of the 2022 SOS report does this to an extent and, consequently, it arrives at some unsupported conclusions.

The central point in Section 3. of the report is that releasing has been shown to drive or ‘fuel’ our fox population. But the main source of information on this shows that released gamebird and fox trends in recent decades do not correlate. Gamebird (pheasant and partridge) releasing in the UK overall has shown the steepest rate of increase over the 3 decades prior to covid restrictions in 2020 (National Gamebag Census data). Over the same period, foxes, according to the BTO BBS mammal monitoring data, have declined substantially and up-to-date NGC fox culling data show a relatively minimal increase. As indicated in a letter from the GWCT in the November 2022 British Wildlife magazine, the complete lack of a temporal association between national gamebird releasing and BBS fox data is not the whole story, but it at least needs proper consideration. These overall trends do not rule out local or regional effects, but they suggest the relationships we are interested in here will be more complex and variable than is currently being assumed.

 The Harris (2021) report on gamebird releasing and foxes referenced in the SOS report makes the same mistakes summarised above and does not provide any reliable empirical evidence for a link between the two (a critique of this report is available on the GWCT website). The SOS report also claims that ‘Reliance on gamekeepers to reduce the impact of fox and avian predation on curlews is therefore doomed to failure’. This cannot be reasonably concluded from the available evidence. Pringle et al.’s (2019) peer-reviewed paper is cited as the main source of evidence for spatial associations between gamebirds and avian predators in the SOS report. However, what is clearly reported in that paper are some very weak spatial associations, some of which make sense, while others, for example more jays with more red-legged partridges, do not. By their nature, associations can be caused by other correlating factors so for example we know that some gamebirds and predators share habitats and that species from both groups respond to gamebird-motivated habitat management. Pringle et al. attempt to account for this but we do not know if some of the weak associations reported are residual effects of habitat and management. The paper usefully flags up the need for proper investigation of the associations found.

The ideas and solutions that are being put forward by the 2022 SOS Campaign report are not supported by good evidence. We do not have good evidence either way presently, but there is some useful information available and a significant programme of relevant work is underway which will report in the next two years. Early indications from this work in the context of long-term national trends suggest that there will be no simple solution related to gamebirds. Yes, curlew are running out of time in the lowlands so if we are to protect them in the short term, we need to focus on what we know is likely to be effective. The GWCT advocates a package of measures that includes provision of high-quality habitat, use of legal lethal and non-lethal predation management techniques and addressing losses to agricultural operations. If we focus solely on one issue and a management approach without good evidence, ie substantially reducing gamebird releasing (and associated management activities) we risk overlooking potentially more important causes of the decline. Pushing just one or the wrong solution now will do curlew and other red-listed species a disservice.

**References**

Harris S 2021. A review of the animal welfare, public health, and environmental, ecological and conservation implications of rearing, releasing and shooting non-native gamebirds in Britain. Report to the Labour Animal Welfare Society.

Pringle H et al. 2019. Associations between gamebird releases and generalist predators. Journal of Applied Ecology. 56: 2102–2113.

Sage RB et al. 2020. Summary review and synthesis: effects on habitats and wildlife of the release and management of pheasants and red-legged partridges on UK lowland shoots. *Wildlife Biology* 2020. wlb.00766.

**Footnote: Radiotracking ground nesting birds**

GWCT has considerable experience over several decades of radio tracking a wide variety of ground nesting birds. We know that if a tag signal is lost it is possible it has been taken underground (although tags can still be picked up at short range in fox earths or badger setts). However it is just as likely that a lost tag has been taken out of range (so in this case perhaps by an avian predator) or has stopped working. Scientist normally categorise lost tags as fate unknown rather than attributing them to a possible or probable fate option. Similarly we also know it is often very difficult to interpret the evidence left at a tag recovery site and again ‘predator or scavenger unknown’ will frequently be the appropriate fate option. There is a good literature on these issues and GWCT are happy to advise on techniques for monitoring breeding waders.