The Plight of Grassland Curlews

Curlews have become largely confined to the upland areas of Northern England and are virtually extinct in the South of the country. Consequently, we have come to think of them as moorland birds but within living memory curlews were found throughout the rural landscape.

As they retreated to the uplands, their population declined nationally and indeed since the 1970's has decreased by 50%. As a result of this decline, in 2015, they were Red Listed as a threatened species in the UK.

The survival of adult curlews is good, 82-95% survive per annum (Taylor & Dodd, 2013).

Population decline is the result of poor breeding success (Brown et al, 2015).
To maintain the population each pair must raise to adulthood 0.48-0.62 chicks per annum (Grant et al, 1999).

This surprisingly low rate of reproduction is enabled by the combination of high survival and longevity of adult curlews (11-30 years).

In stark comparison, in grassland landscapes the average chick survival to adulthood is 0.1 per pair per year (Colwell et al, 2020). This rate of reproduction in grassland landscapes will lead to a population decline of 3% per annum and amount to 50% in 13 years (G Hilton in Colwell et al, 2020).

On the Shropshire/Wales Border, an area of livestock producing grassland farms, only 3 eggs hatched successfully from 30 curlew nests in 2 successive years (Curlew Country, 2017). The cause was predation: >50% of eggs were taken by foxes.

Curlews in such landscapes are facing a cliff edge extinction. After a generation of failed breeding attempts they will be gone!

For curlews nesting in grass crops the predominant predators of eggs and chicks are foxes, badgers and carrion crows (Curlew Forum Database,2019)

England has some rural areas with the highest density of foxes and carrion crows in Europe (Roos et al, 2018). The reasons for this abundance of generalist predators remain uncertain.

In an upland area, lethal control of foxes and carrion crows led to a 3-fold increase in curlew breeding success compared with a similar area where no predator control was undertaken and in which only 15% of pairs produced young (Fletcher et al, 2010).

Livestock can also cause problems for breeding curlews:-
At high stocking densities 20-33% of nest failures have been attributed to trampling by cattle (Grant,1977)
A sheep has been filmed driving off a sitting curlew and eating the eggs (Zeilonka et al, 2020). This behaviour has been reported widely elsewhere but its frequency is unknown.

Despite the above adverse effects, stock grazing is necessary because it controls growth of vegetation and provides areas of below average ground cover in which 78% of curlew nests are found (Johnstone et al, 2017).

Modern agriculture is also problematic:-
It encourages early grass growth which maximises grass production and allows early and repeated cutting for silage. The early cuts destroy curlew nests and chicks (Curlew Country, 2021).

Also, the improvement of grassland by use of drainage, artificial fertilisers and reseeding reduces its attractiveness to breeding curlews and the biodiversity and abundance of invertebrates, which are the food source of the curlew chicks (Vickery et al, 2001; Wilson et al, 2005).

Every spring curlews return to the valleys of the Darley Beck catchment in healthy numbers, although they are noticeably less common compared with 2 or 3 decades ago.

If, like the Shropshire curlews they are not managing to produce offspring, they may simply be being replaced by surplus birds produced on the nearby moorlands.
Curlews are not facing a cliff edge extinction here but after a life of breeding failure, they would not have made any contribution to curlew populations in the wider countryside.
These valleys could be acting as a population sink.

Over the past decade the breeding success of curlews in the Darley Beck Project area has appeared on casual observation to be generally poor. In some years only one chick was noticed to survive to adulthood.

The Darley Beck Project area consists of a number of grassland farms involved in the production of sheep and cattle.
Could the factors identified as causing declines in the curlew population of a similar area, such as the Shropshire/Welsh Border (Curlew Country, 2015-2016), also be in play here?

The Darley Beck Curlew project has been established to determine what is happening to the curlews in this valley and to what extent predation and modern agriculture is affecting them.

Only when we understand the problems locally can we devise ways to help improve the breeding success of our curlews.