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Barnacle Goose Greenland population	Wings	Methodology	16032022

In order to account for the greater vulnerability of juveniles to shooting mortality widely observed in geese (Calvert and Gauthier, 2005; Clausen et al., 2017; Madsen, 2010; Menu et al. 2002), we used wing returns from harvest bags from Scotland and Iceland to estimate differential vulnerability.

In Iceland, age ratios for harvest bags were obtained from wing returns sampled from hunters (1995 to present). When using autumn age ratios from Scotland, differential vulnerability in Iceland appeared to be greater than that observed in Scotland. However, due to the small annual sample size for Icelandic wing data, and a lack of productivity counts from Iceland, we chose to use records from pink-footed geese in Norway to set a prior distribution for higher differential vulnerability of juveniles in the first stage of their autumn migration (Clausen et al., 2017; Madsen, 2010). As both species are Arctic-nesting migrants exposed to shooting at their first stopover sites in their migration, we feel that this was a suitable substitute in the absence of Iceland specific data for GBG (Johnson et al., 2019).

In the UK, prior to 2000, GBG were protected from any shooting under the 1981 Wildlife Countryside Act. Since 2000, they have been subject to licensed derogation shooting exclusively on Islay, controlled by Nature Scot (formally Scottish Natural Heritage, SNH) (McKenzie and Shaw, 2017). Henceforth, “Scottish harvest” refers to derogation shooting on Islay. Derogation shooting takes place from 1st November and ends 1st April, prior to geese departing on their spring migration.

Wing data for goose harvest on Islay has been recorded by Nature Scot since 2012 and provides annual totals for the number of adults and juveniles in the Scottish harvest bag. Age ratios from wing data were used to specify a prior distribution for differential vulnerability of juveniles in the Scottish harvest bag.