

# Climate Change and the UK's Birds

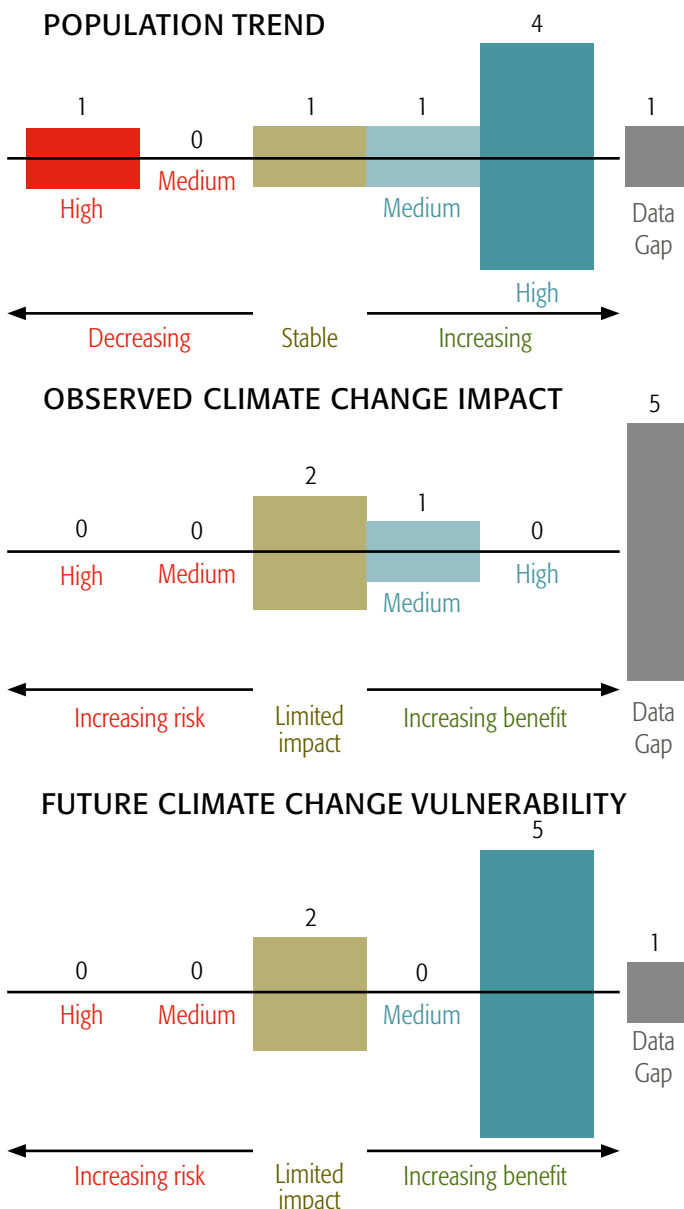
## Supplementary material



# HEATHLAND BIRDS

Five of nine heathland species, which tend to have a southerly distribution, are increasing in abundance, with evidence for one of these, the Dartford Warbler, that climate change may be playing a role through reductions in winter severity ([Bradbury et al. 2011](#)).

Five of these species are regarded as likely to have a high benefit from climate change, which is expected to drive northward range expansions and increases in abundance across the UK.

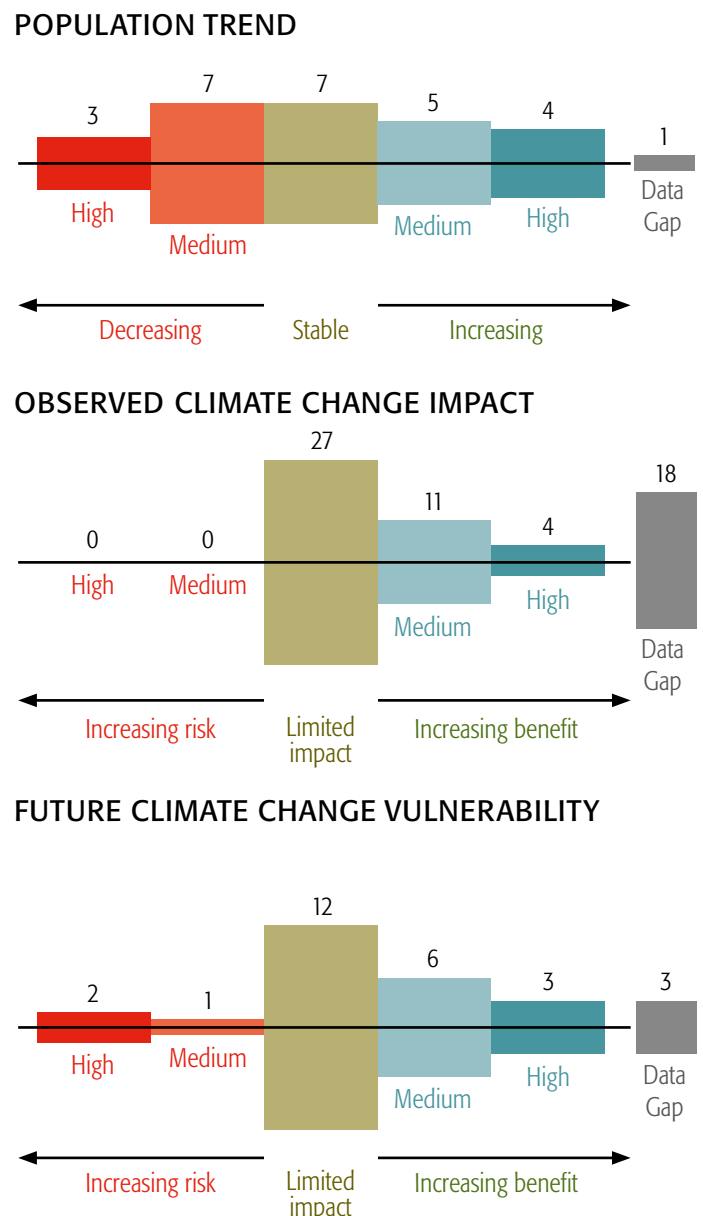


# FARMLAND BIRDS

After the dramatic declines of the 1970s and 80s, farmland birds have shown more mixed population trends over the last 25-years ([Baker et al. 2012](#)). Climate change has had little impact on long-term farmland bird populations ([Eglington & Pearce-Higgins 2012](#)) despite declines in farmland specialists being most apparent in south-east England ([Massimino et al. 2015](#)).

Given that many farmland birds tend to have a southerly or continental distribution across Europe, there is evidence that a quarter of species, such as Grey Partridge and Corn Bunting, may have benefited from warming in the UK, whilst none have been negatively affected (see [Eglington & Pearce-Higgins 2012](#), [Pearce-Higgins & Crick 2019](#)).

Looking to the future, a third of species may increase in response to future climate change, particularly those with southerly distributions such as Cirl Bunting and Barn Owl.

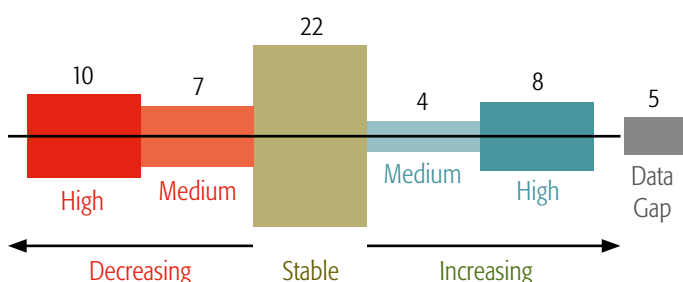


# WOODLAND BIRDS

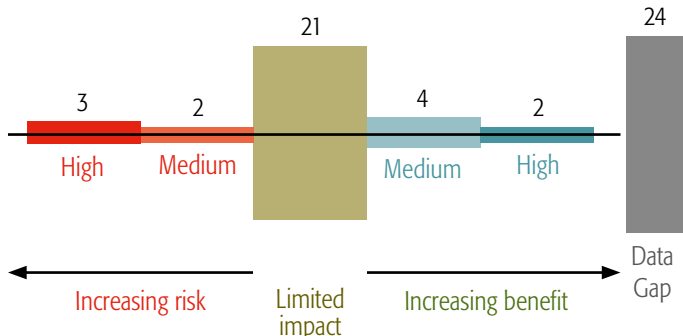
The effects of climate change on woodland birds appear relatively mixed. Slightly more woodland birds are vulnerable to climate change than may benefit, with those that tend to breed in northern Britain, such as Capercaillie and Redstart, seemingly the most vulnerable. Slightly more woodland bird species are sensitive to mitigation measures than likely to benefit, though the value of woodland planting used to capture carbon will be influenced by the management approaches adopted.

Given the seasonality of woodland environments, at least some of the negative impacts of climate change appear associated with potential impacts of phenological mismatch (affecting Capercaillie ([Moss et al. 2001](#)), Lesser Spotted Woodpecker ([Smith et al. 2020](#)) and Pied Flycatcher ([Samplonius et al. 2021](#)), although in none of these is mismatch thought to be the primary cause of decline. Declines in Willow Warblers may be linked to reductions in breeding success in southern Britain which could be climate-related.

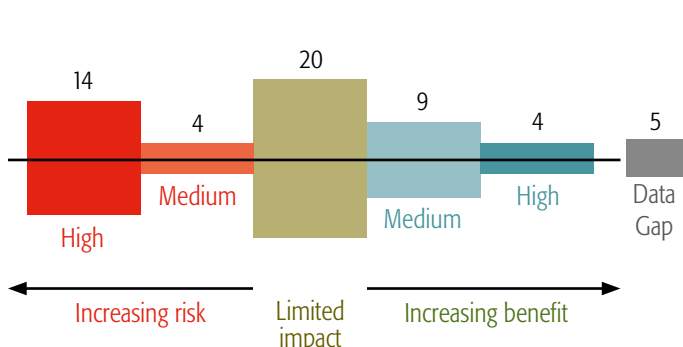
## POPULATION TREND



## OBSERVED CLIMATE CHANGE IMPACT



## FUTURE CLIMATE CHANGE VULNERABILITY

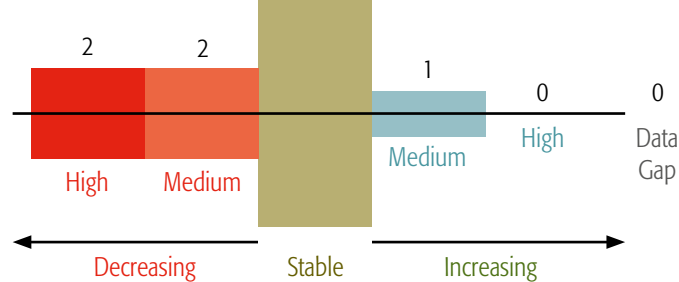


# URBAN BIRDS

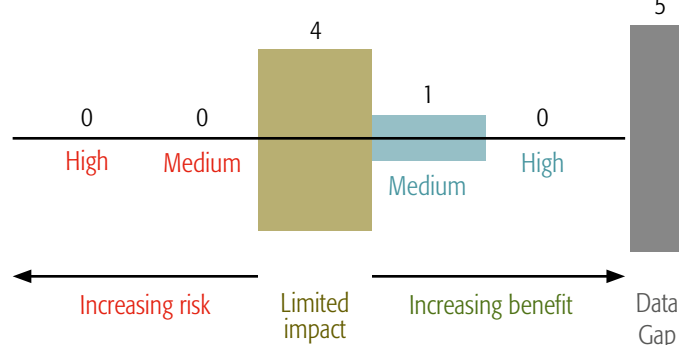
Of the 10 species associated with urban habitats, four are in decline and one is increasing, although such trends appear unrelated to climate change.

Five of these species are regarded as likely to benefit from future warming, though the relative benefits are likely to be limited or medium in their scale.

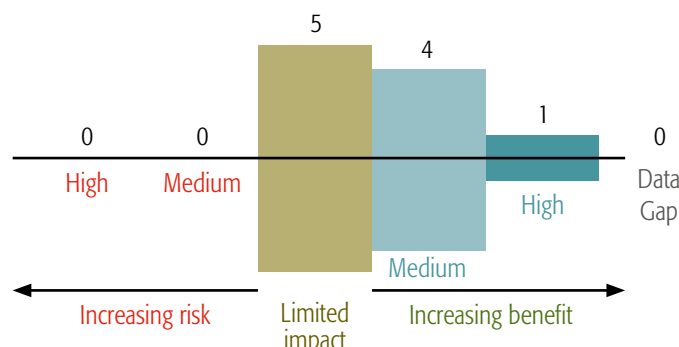
## POPULATION TREND



## OBSERVED CLIMATE CHANGE IMPACT



## FUTURE CLIMATE CHANGE VULNERABILITY

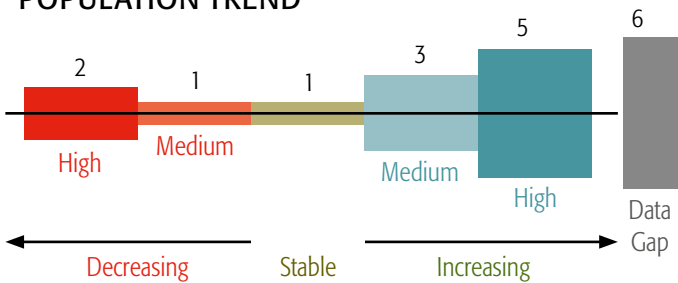


# NON NATIVES

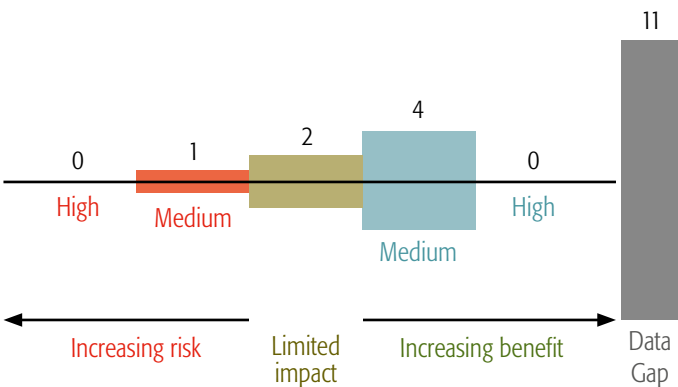
Almost half of the 18 non-native species breeding populations assessed are increasing in abundance, with four showing evidence of some positive impacts of climate change. Of the nine non-native wintering waterbird populations, three are declining and six increasing. Although the future impacts of climate change has not been assessed for two-thirds of non-native birds, the results for those that have appear relatively mixed.

Climate change appears to be contributing to increasing non-native populations, whether waterbirds such as Canada Goose and Greylag Goose (Martay *et al.* 2017) or gamebirds such as Pheasant and Red-legged Partridge (Pearce-Higgins & Crick 2019), although it is important to note that gamebird populations are also heavily subsidised by annual releases (Pringle *et al.* 2019).

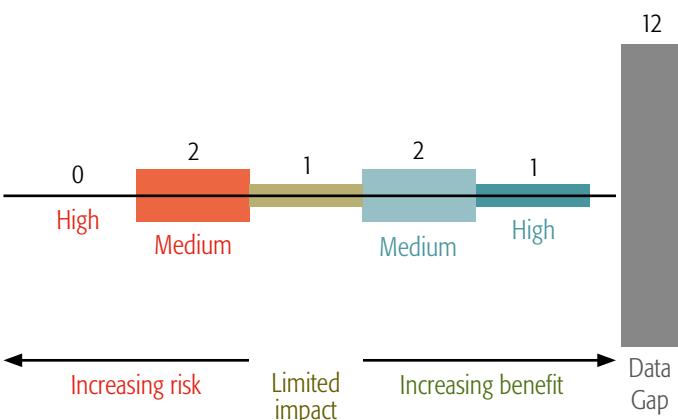
## POPULATION TREND



## OBSERVED CLIMATE CHANGE IMPACT



## FUTURE CLIMATE CHANGE VULNERABILITY



# REFERENCES

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