

Common Gull *Larus canus*

Summary

Common Gull is projected to decline slightly in population size in the INTERREG VA area from 1998-2002 to 2050 under climate change, with some increases in northern and eastern areas. Overall, Common Gull is projected (with poor confidence) to have high vulnerability under climate change in the INTERREG VA area.

Table 1. Current (observed) and future (projected) Common Gull population size (breeding pairs) in GB & Ireland, INTERREG VA area and MarPAMM management areas.

Area	1998-2002	Projection for 2050
UK & Ireland	49728	50591 ↑+2%
INTERREG VA area	6161	5242 ↓-15%
Argyll	2480	2053 ↓-17%
Co. Down – Co. Louth	276	208 ↓-25%
N Coast Ireland – N Channel	264	209 ↓-21%
Outer Hebrides	1705	1482 ↓-13%

Under climate change, Common Gull **population size** is projected to **decline** slightly in the INTERREG VA area between 1998-2002 and 2050, while Britain and Ireland population size is projected to increase slightly (Table 1, Fig. 2a).

Common Gull is generally projected to decline in abundance across the INTERREG VA area, with some increases in some northern and eastern areas (Fig. 2a). Some new sites may become more suitable for Common Gull under climate change (Fig. 2b); therefore this projected decline in abundance may be partially compensated for by colonisation.

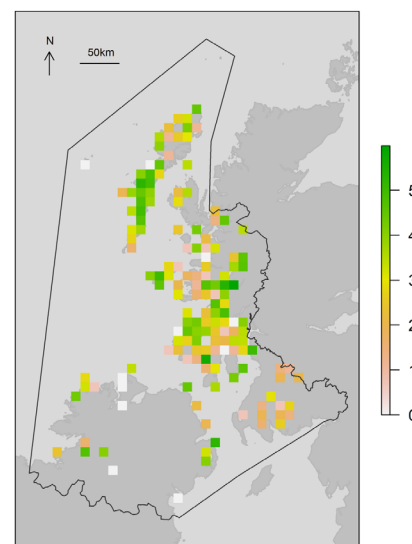


Figure 1. Observed Common Gull abundance (log breeding pairs), 1998-2002. Black polygon = INTERREG VA area.

Projected change in breeding pairs

Projected change in presence probability

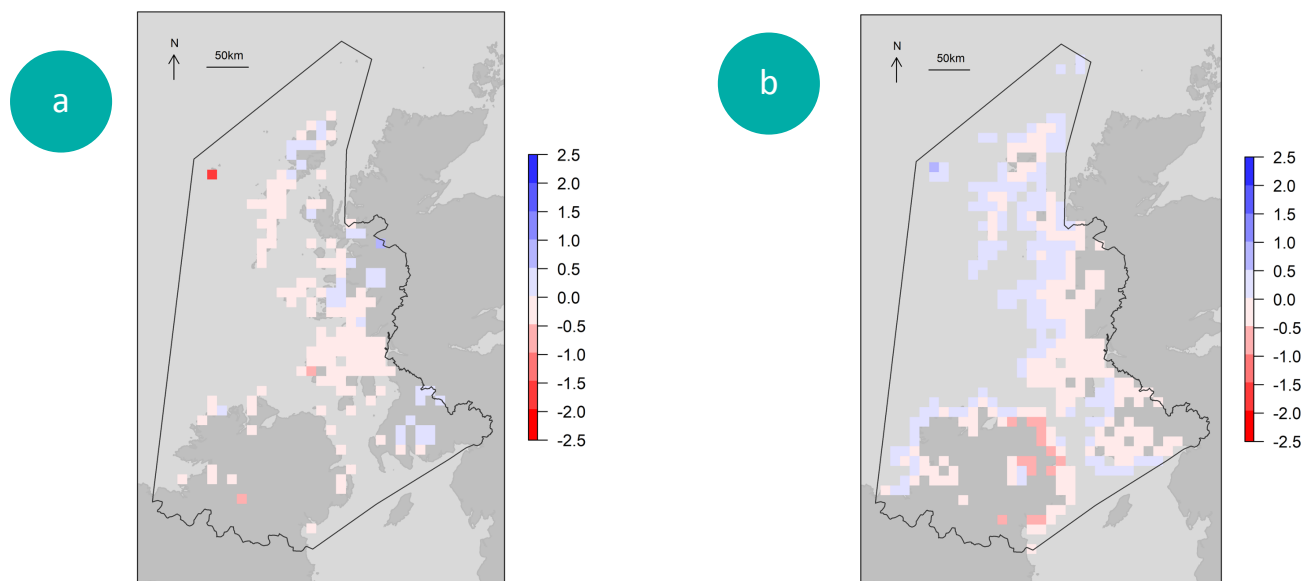


Figure 2. Projected change (1998-2002 to 2050; log proportional change) in: a) Common Gull breeding pairs, for all cells where Common Gull was present in 1998-2002; (b) Common Gull presence probability for all squares where any seabird was censused in 1985-1988 or 1998-2002. White/blue = increase, red = decrease. Black polygon = INTERREG VA area.

Model predictive power was good for both the presence/absence component and the abundance component of the model *. Common Gull presence/absence and abundance had significant relationships with terrestrial climate and nuisance variables (Table 2).



Table 2. Effect on presence and abundance for significant variables in model*. Variables included in table if significant in at least one model component; field left blank if variable not significant in that model component. Variables shown in parentheses represent quadratic terms. Projections made using full model (i.e. not just significant variables).

Variable	Presence	Abundance
Breeding season precipitation		-
Bathymetry	-	
Coast length		+
Distance inside coast	+	
Small islands area	+	

Table 3. Projected change for Common Gull at the ten sites with the most breeding pairs in 1998-2002. Sites are as defined in Seabird 2000 census. Superscript denotes MarPAMM management region, where applicable: ^A, Argyll; ^B, Co. Down - Co. Louth; ^C, North Coast Ireland - North Channel; ^D, Outer Hebrides.

Site	Breeding pairs, 1998-2002 (count)	Projected breeding pairs, 2050 (median & 95% CI*)	Projected % change in breeding pairs (median & 95% CI*)
North Uist ^D	528	446 (103, 1727)	-15.6 (-80.5, +227.2)
South Uist ^D	402	344 (118, 962)	-14.5 (-70.7, +139.2)
Loch Etive ^A	357	354 (111, 1042)	-0.9 (-68.8, +191.8)
Tiree ^A	324	249 (26, 1420)	-23 (-92.1, +338.4)
Gigha ^A	306	212 (25, 945)	-30.6 (-91.7, +209)
Jura (West) ^A	209	152 (28, 635)	-27.4 (-86.6, +203.7)
Copeland Island, Light House Island and Mew Islands ^B	193	146 (16, 730)	-24.3 (-91.8, +278)
Lower Lough Erne	169	153 (29, 594)	-9.4 (-83, +251.2)
Loch Linnhe and Fort William	147	157 (50, 458)	+6.8 (-65.8, +211.8)
Great Cumbrae Island	144	93 (12, 466)	-35.3 (-91.4, +223.5)

* See main report for details of modelling, variables, categories of model predictive power and derivation of confidence intervals for projections.

Climate Change Mechanisms

The review of climate change mechanisms affecting seabirds (Johnston et al. 2021) identified that gulls as a group are typically influenced indirectly by climatic variation, mediated through food supply. Low-lying gull nests are susceptible to flooding, and so sea level rise or increased storminess under climate change may reduce population size or productivity. In the north-east Atlantic, Common Gull breeding phenology is influenced by climate, with warmer years being related to earlier, more variable laying dates; this in turn leads to higher recruitment to the following year.

Overall, climate change is projected (with **poor confidence**) to present Common Gull with **high risk** and **low opportunity** in the INTERREG VA area.

Citation: Common Gull species factsheet. From Davies, J.G., Humphreys, E.M. & Pearce-Higgins, J.W. 2021. Projected future vulnerability of seabirds within the INTERREG VA area to climate change. Report to Agri-Food and Biosciences Institute and Marine Scotland Science as part of the MarPAMM Project. BTO, Thetford



For more information on the MarPAMM project please visit the project website:

www.mpa-management.eu