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Landscape Conservation for Irish Bats



Bat Conservation Ireland

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Landscape Conservation for Bats in Ireland

Summary Report for County Donegal



Bat Conservation Ireland

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A JOINT PROJECT WITH BAT CONSERVATION IRELAND AND THE CENTRE FOR IRISH BAT RESEARCH

Introduction

This summary document is intended to be read in conjunction with the main report produced for this project (see Lundy *et al.* 2011). The following summarises the pertinent points for County Donegal in relation to areas of greatest bat occurrence and areas where bats may be particularly vulnerable. Analyses were carried out at a 5km resolution using the CORINE landcover, altitudinal, climatic and other datasets. Note that this analysis is based on bat records available from 2000 to 2009 and results may change as further records and more widespread and detailed habitat datasets become available over time. There is only one confirmed record for the Brandt's bat in Ireland (Co. Wicklow) so it is not included in this analysis. Six Irish bat species are widespread across the island. The lesser horseshoe bat, Nathusius' pipistrelle, and whiskered bat, however, are species with the most restricted distributions on the island. Although areas of generally lower bat occurrence may be found along mountain ranges and at altitude this does not mean bats are not found in these locations. Bats may be locally common and may also move across mountain ranges in autumn during migration to swarming sites and in spring, when migrating from hibernacula to summer roosts. Swarming sites or hibernacula may also themselves occur at altitude, in caves or disused mines, but may be hitherto unrecorded.

Results

All species except the rarely recorded Nathusius' pipistrelle, and the Annex II listed species lesser horseshoe bat, are found across County Donegal. The percentage of the county included in a species' core range ranges from 0% for the lesser horseshoe bat to 59% for the soprano pipistrelle. The lesser horseshoe bat has never been confirmed from Donegal and is unlikely to occur there. Other species with relatively high areas of the county included in their core ranges include Leisler's bat (24%), Daubenton's bat (32%) and Natterer's bat (32%). Lower percentages of the county are included in the brown long-eared bat, common pipistrelle and whiskered bats' core ranges (15%, 18% and 7%, respectively).

Table 1: The percentage area of County Donegal included as part of the core area of bat species and percentage of each species' countrywide core area in the county. Values which are above the mean (for 26 counties in ROI) are marked (*), those counties with significantly higher values, greater than the average plus the standard deviation are marked (**).

	Brown long-eared	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Lesser horseshoe bat	Leisler's bat	Daubenton's bat	Whiskered bat	Natterer's bat
% of county	15	18	59	1	0	24	32	7	32
% of all-island core area	1	2	5*	0	0	2	4*	1	3

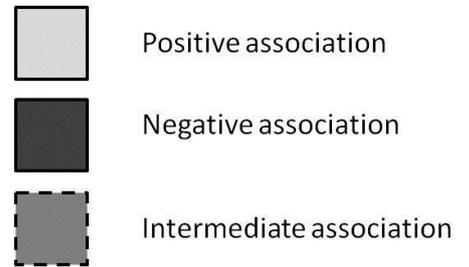
Areas of high occurrence are generally found in the eastern part of the county in the area around Kilmacrenan, Letterkenny and Lifford. Parts of the south are also important particularly around Donegal town. For the brown long-eared bat coastal areas around the

county are important, as well as the area between Ramelton, Kilmacrenan and Letterkenny. There are, however, relatively few records for the species in these areas suggesting that it is under-recorded in the county. Areas most suitable for the common pipistrelle include the east of the county, the northern coast and the south of the county. The soprano pipistrelle may be more common throughout the county than the common pipistrelle but its areas of greatest occurrence are likely to be found in the north. On the whole, the county is not particularly suitable for Nathusius' pipistrelle but some areas of suitability exist along the east of the Inishowen Peninsula, along the River Foyle and in the extreme south at the Sligo border. Prime areas for Leisler's bat are mostly in the east and North east, from Dunfanaghy to Partsalon and south to Castlefinn. In addition, other prime areas are found in the extreme south around Donegal and Bundoran. Best areas for Daubenton's bats are situated around the edges of the county, around low-lying rivers. The Natterer's bat is most abundant in the east and south of the county while the whiskered has limited areas of suitability, and these are mainly in the Kilmacrenan-Letterkenny area.

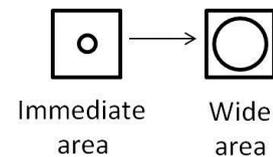
A summary of habitats associations of Irish bats

Below is a summary of the habitats favoured and avoided by bats. Two elements of habitat association are identified; direction of association (positive or negative) and scale of association (fine scale or broad scale).

Direction of association: The colour of the box identifies the direction of association. Three relationships are identified; a positive association, a negative association and an intermediate association. An intermediate association reflects that a species is positively associated with a small area of this habitat but as this area increases this association becomes negative. A non-filled box signifies that this habitat is not an important predictor of that species occurring.



Scale of association: The size of the circle identifies the scale of the habitat that is most important – a small circle identifies that this habitat is important in the immediate area whereas a large circle reflects an association with a that habitat at a wider landscape scale.



	Arable	Bog	Broadleaf forest	Mixed forest	Pasture	Riparian habitats	Scrub	Urban	Freshwater	Altitude
Brown long eared	White	Dark grey, small circle	Light grey, small circle	Light grey, large circle	White	Light grey, small circle	White	Dashed grey, small circle	White	White
Common pipistrelle	White	Dark grey, small circle	Light grey, small circle	Light grey, large circle	White	Light grey, small circle	White	Dashed grey, small circle	White	White
Lesser horseshoe	Dark grey, large circle	White	Light grey, large circle	Light grey, large circle	White	White	White	White	White	White
Liesler's	White	Dark grey, small circle	Light grey, small circle	Light grey, large circle	White	Light grey, small circle	White	Dashed grey, small circle	White	White
Daubenton's	White	Dark grey, small circle	Light grey, small circle	White	White	Light grey, small circle	White	Dashed grey, small circle	White	Dark grey
Nathusius' pipistrelle	White	Dark grey, large circle	Light grey, small circle	White	Dashed grey, small circle	White	White	White	Dashed grey, large circle	White
Natterer's	White	Dark grey, small circle	Light grey, small circle	Light grey, large circle	Dashed grey, small circle	Light grey, small circle	White	White	White	White
Soprano pipistrelle	White	Dark grey, small circle	Light grey, small circle	White	White	Light grey, small circle	White	Dashed grey, small circle	White	Dark grey
Whiskered	White	Dark grey, small circle	Light grey, small circle	Light grey, small circle	Dashed grey, large circle	White	Dashed grey, large circle	Dashed grey, small circle	White	White

Figure 1: Habitat suitability for brown long-eared bat (*Plecotus auritus*) in County Donegal. Darker areas indicate greater suitability.

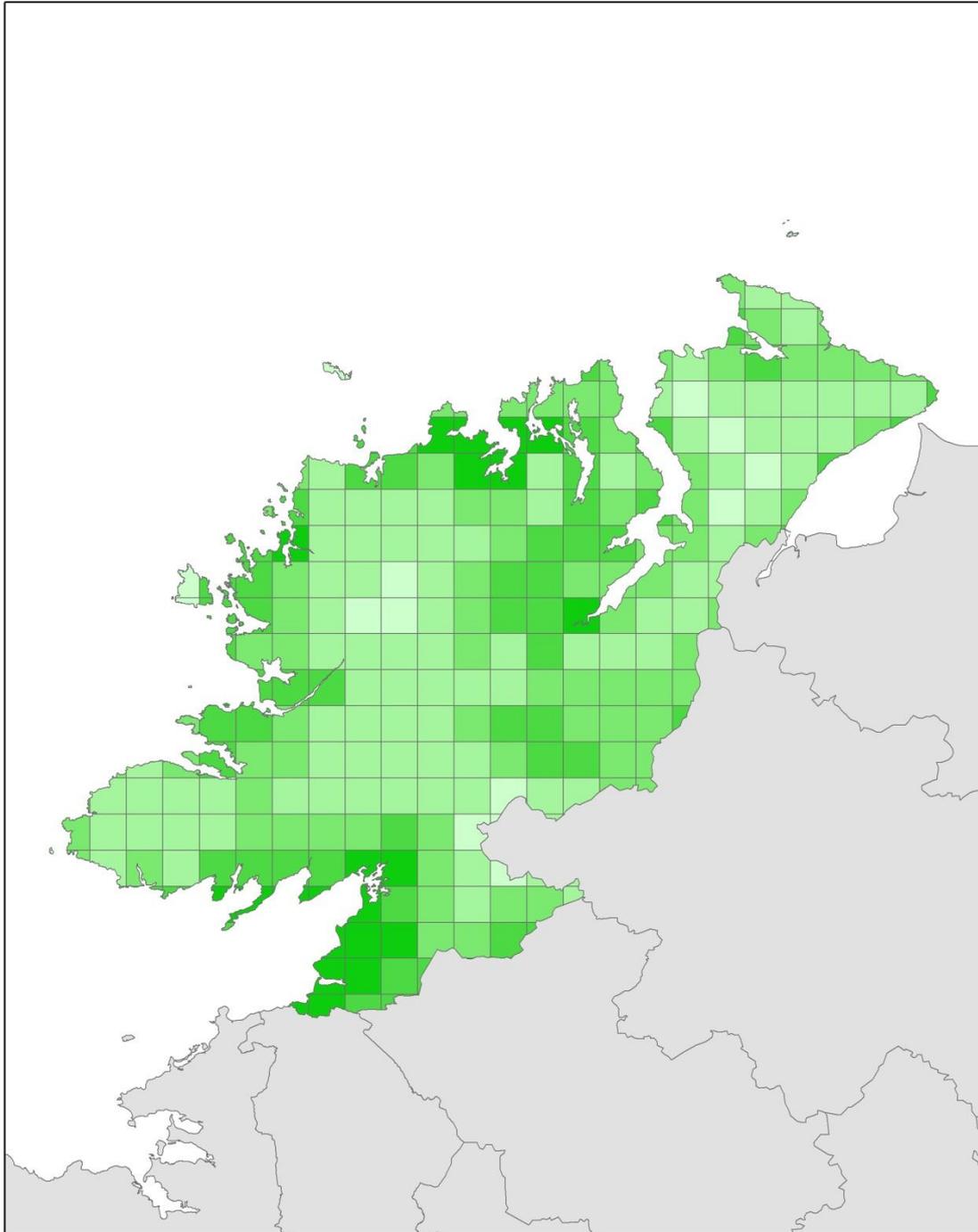


Figure 2: Habitat suitability for common pipistrelle (*Pipistrellus pipistrellus*) in County Donegal. Darker areas indicate greater suitability.

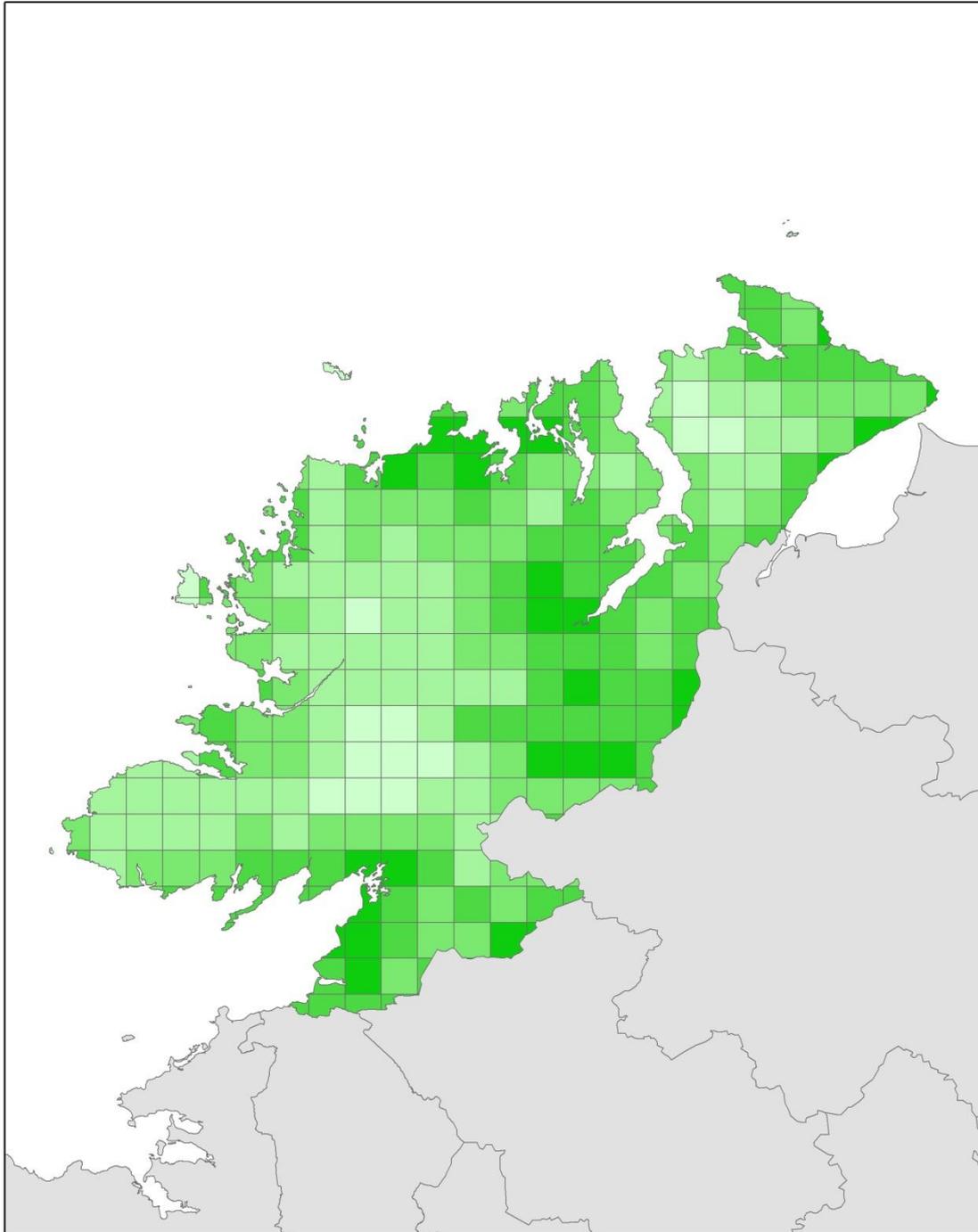


Figure 3: Habitat suitability for soprano pipistrelle (*Pipistrellus pygmaeus*) in County Donegal. Darker areas indicate greater suitability.

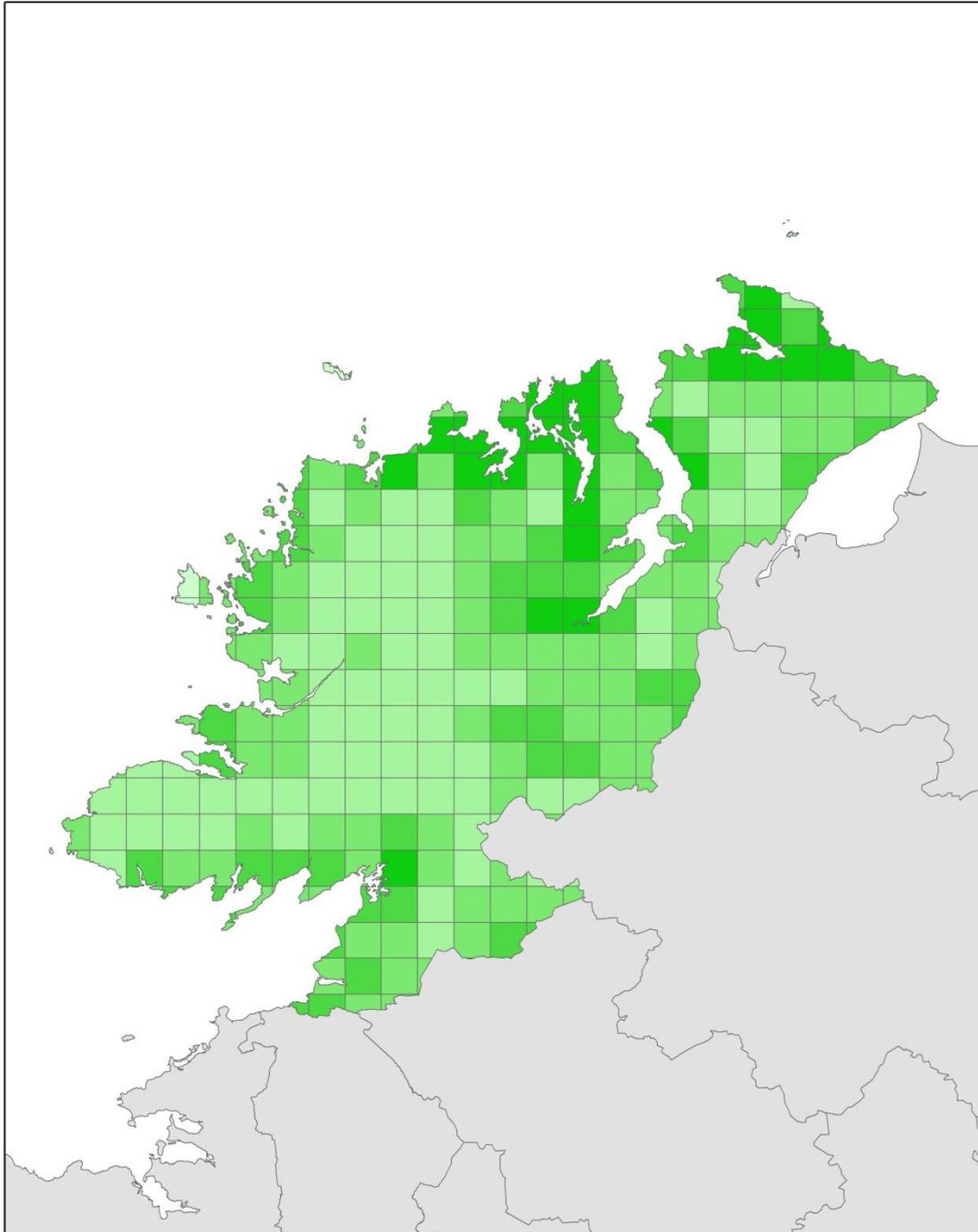


Figure 4: Habitat suitability for *Nathusius' pipistrelle* (*P. nathusii*) in County Donegal. Darker areas indicate greater suitability.

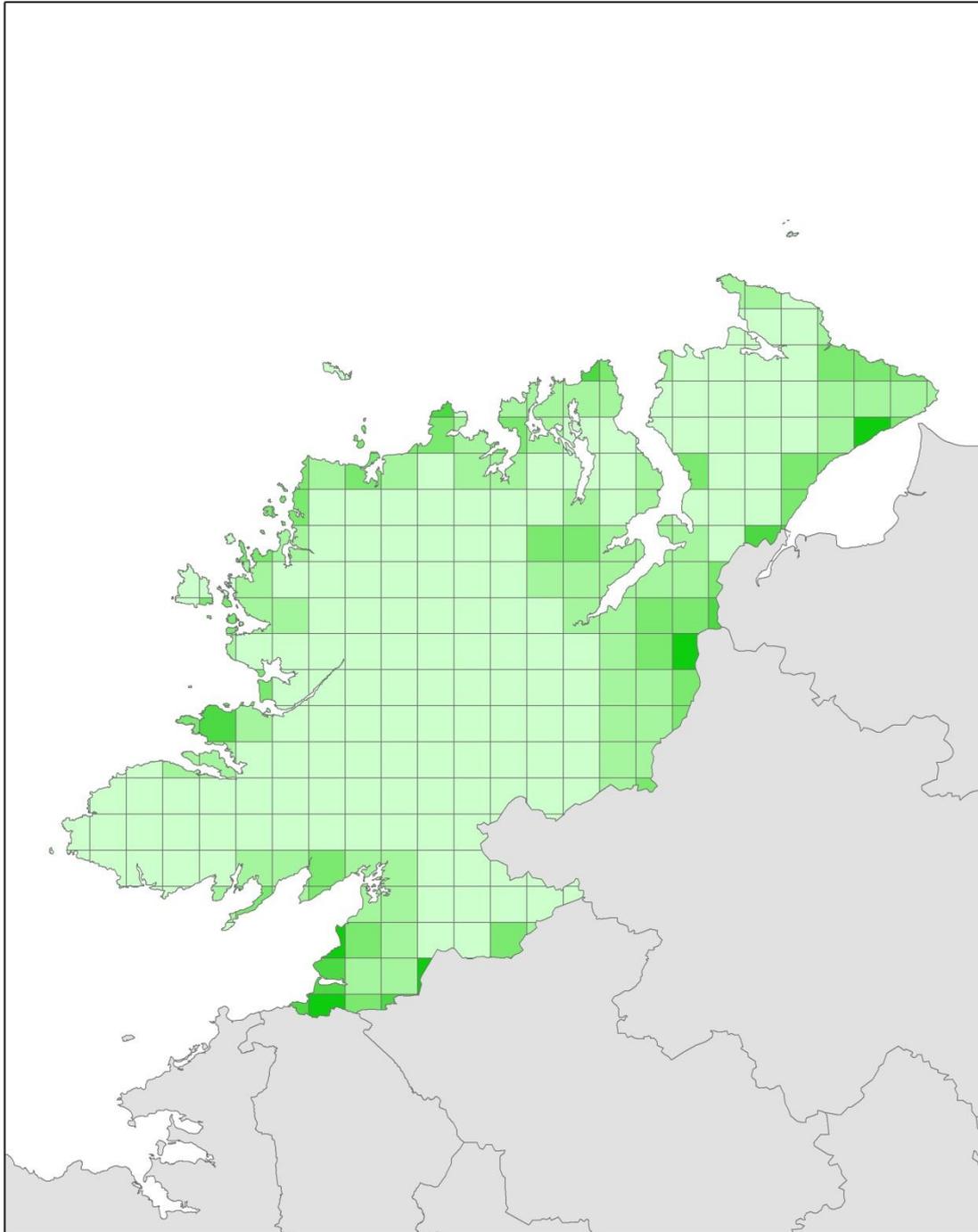


Figure 5: Habitat suitability for Leisler's bat (*Nyctalus leisleri*) in County Donegal. Darker areas indicate greater suitability.

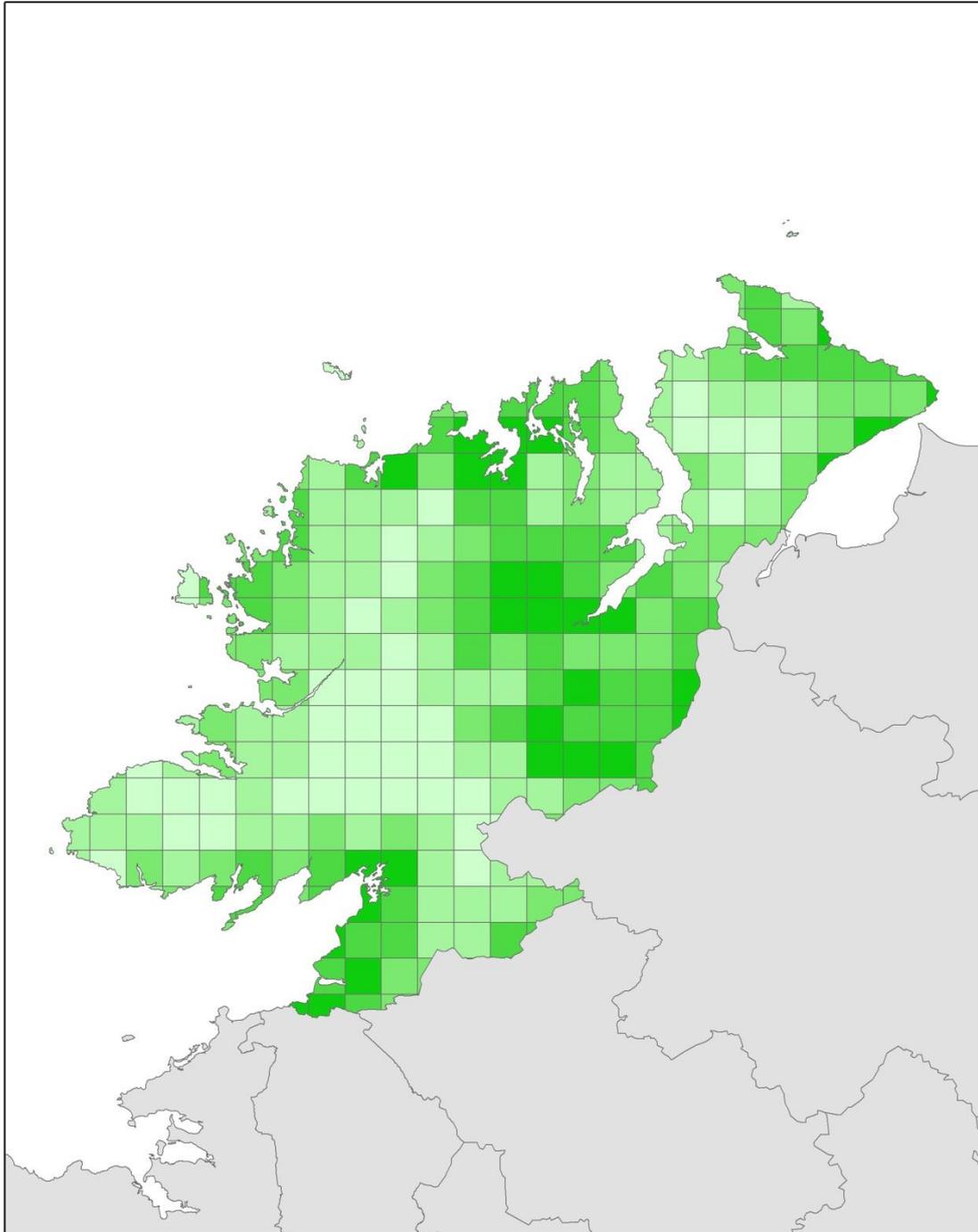


Figure 6: Habitat suitability for Daubenton's bat (*Myotis daubentonii*) in County Donegal. Darker areas indicate greater suitability.

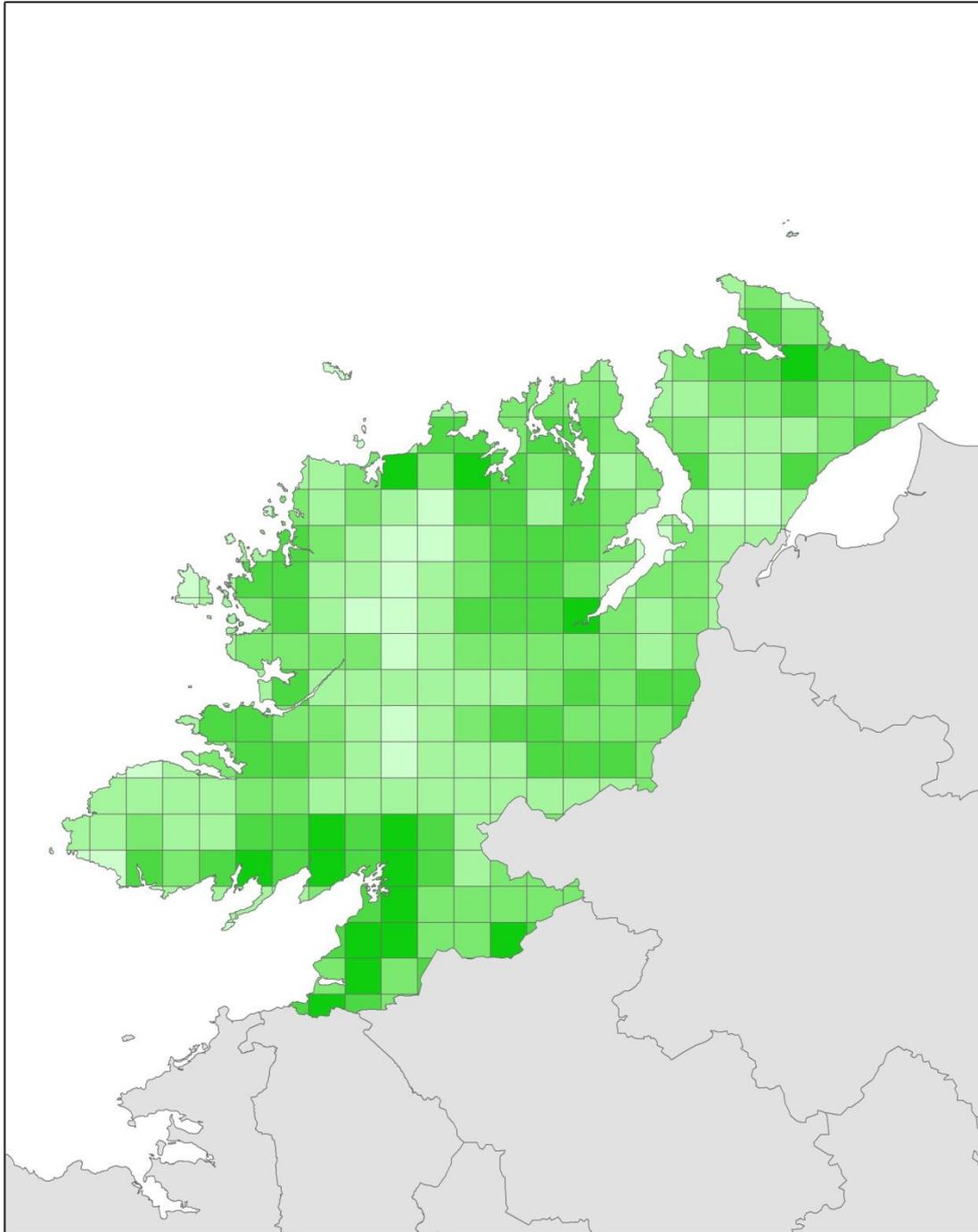


Figure 7: Habitat suitability for Natterer's bat (*Myotis nattereri*) in County Donegal. Darker areas indicate greater suitability.

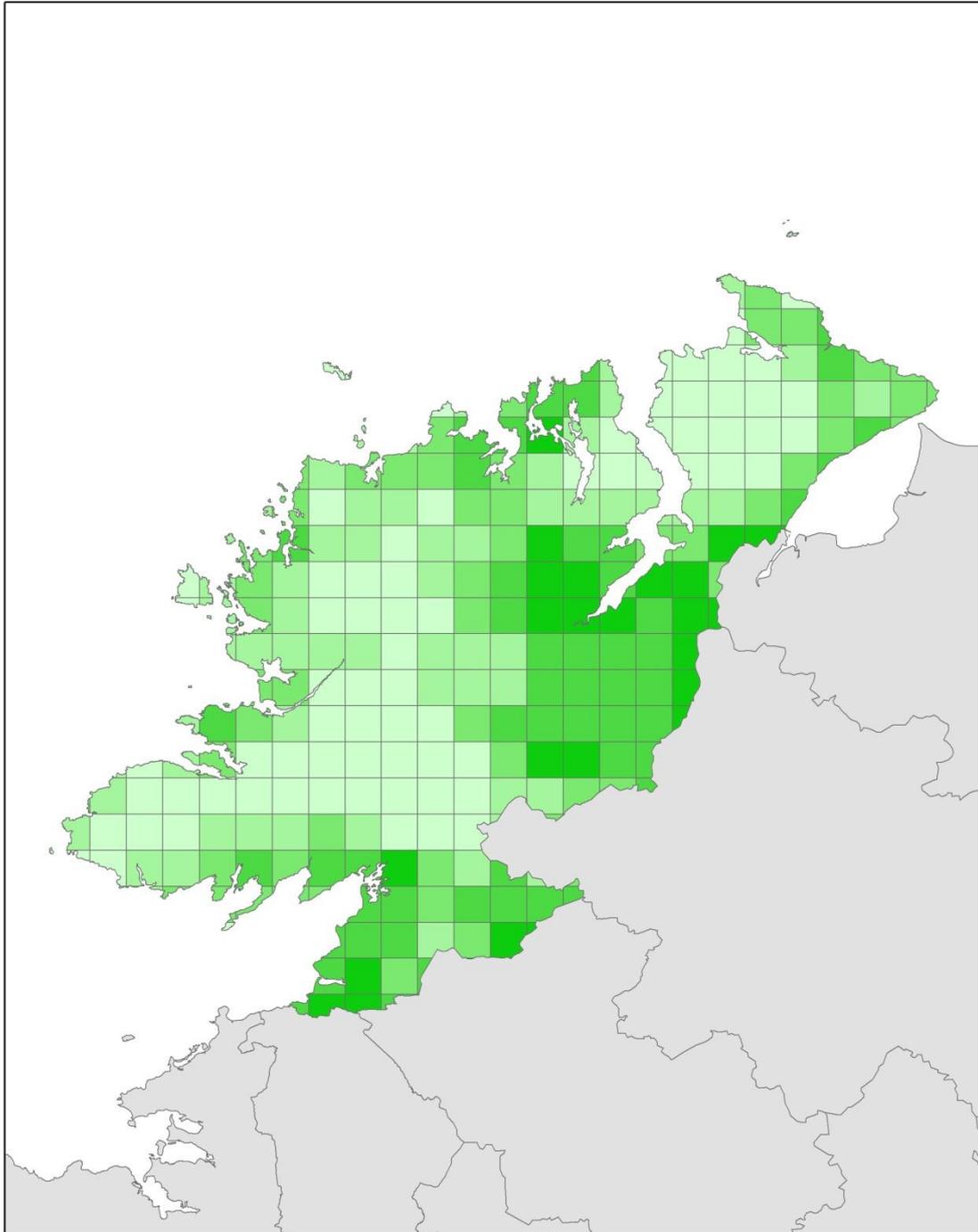


Figure 8: Habitat suitability for whiskered bat (*Myotis mystacinus*) in County Donegal. Darker areas indicate greater suitability.

