Potentiescan SMP gemeente Hollands Kroon

The analysis has been conducted for each neighborhood to estimate the likelihood of bats, house sparrows, starlings, and swifts inhabiting them, aiming to determine the research efforts needed for each species.

Method

In the designated neighborhoods, we have considered four key characteristics of buildings: the year of construction, energy label, roof type, and the presence of green areas. We have decided to use those characteristics for the following reasons. The year of construction affects the construction methods used, which in turn influences the availability and size of spaces for bats within buildings (Kadaster, 2022a). Additionally, the energy label can indicate whether cavity walls and roofs may be accessible to wildlife (RVO, 2020). The type of roof—whether flat or sloped—also plays a role in its suitability as a nest site as sloped roofs can have tiles that create potential spaces for birds, though this may not be the case for bats. Lastly, green areas are important for house sparrows and bats when they leave their roosts to hunt.

Distinct categories have been established for each type of feature (see Table 1 for detailed explanations). Parameters were assessed for each building and aggregated at the neighborhood level. The measurement of green space was conducted using the normalized difference vegetation index (NDVI) for the months of March and August 2024. This index effectively quantifies both the health and density of vegetation, utilizing sensor data derived from spectrometric measurements taken at two specific wavelengths: red and near-infrared. For this assessment, satellite imagery from the Sentinel-2 mission was employed (see appendix).

Table 1

Brondata	Categorie	Interpretatie
Bouwjaar	≤ 1975	Nagenoeg geen isolatie, tenzij recent na geïsoleerd
	1976 – 2003	Beperkte isolatie in spouwmuren, maar nog geen eis aan maximale grootte kieren en gaten
	≥ 2004	Bouwbesluit (2003), dus geen kieren en gaten groter dan 1 cm
Energielabel	≤ C	Slechte isolatie, betere kansen voor fauna
	≥ B	Goede isolatie, mindere kansen voor fauna
Daktype	Plat dak	Geschikte ruimtes voor vogels beperkt, voor vleermuizen mogelijk wel in spouwmuren en/of achter boeiboorden.
	Schuin dak	Geschikte ruimtes aanwezig voor zowel vogels als vleermuizen in het dak en/of spouwmuren en/of achter boeiboorden.
Groen in omgeving (50 meter)	Veel	51-100 % oppervlakte groen binnen 50 meter van cluster
	Midden	21-50 % oppervlakte groen binnen 50 meter van cluster
	Weinig	0-20 % oppervlakte groen binnen 50 meter van cluster

Finally, for each category, a specific value was assigned to reflect its importance to each species (refer to Table 2).

Table 2

Brondata	Categorieën	Huismus/spreeuw	Gierzwaluw	Vleermuizen
Bouwjaar	≤ 1975	3	3	3
	1976 – 2003	2	2	2
	≥ 2004	1	1	1
Energielabel	≤ C	3	3	3
	Onbekend	2	2	2
	≥ B	1	1	1
Daktype – Schuin dak	≥75 %	3	3	0
	50-75 %	2	2	0
	25-50 %	1	1	0
	≤ 25 %	0	0	0
Groen in omgeving (50 meter)	Veel	3	0	2
	Midden	2	0	2
	Weinig	1	0	1

By summing these values, a total score is generated for each species, categorizing each neighborhood into three specific potential groups: High, Medium, and Low (see Table 3). House sparrows and starlings are considered together due to their similar needs.

Table 3

Potentie	Huismus/spreeuw	Gierzwaluw	Vleermuizen
Hoog	10 - 12	7 - 9	7 - 8
Middel	6 - 9	5 - 6	5 - 6
Laag	3 - 5	2 - 4	3 - 4

The data for the year of construction, energy labels, and the amount of sloped buildings were sourced from public records (see appendix).

Results

The neighborhood characteristics

The results for each environmental category, as well as the potential habitats for swifts, sparrows, starlings, and bats in each neighborhood, are presented in appendix.

Our analysis (see Table 4) indicates that most neighborhoods in the municipality of Hollands Kroon consist of buildings constructed before 1975 (31 neighborhoods), with many featuring a medium to high concentration of structures with inclined roofs (40 neighborhoods). Additionally, several neighborhoods (35) lack significant vegetation areas during the timeframe considered, and slightly more than half of the neighborhoods (27) have a majority of buildings with energy labels higher than B.

Table 4

Functie	Categorie	Totaal aantal buurten
Bouwjaar	**≤ 1975**	31
	1976 – 2003	13
	≥ 2004	3
Daktype – Schuin dak	**< 25%**	1
	25-50 %	6
	50-75 %	40
Energielabel	**≥ B**	27
	≤ C	20
Groen in omgeving	**Weinig**	35
	Midden	12

The possible classes

Figure 1 shows the percentage and amount of the neighborhood for the three different potential categories for the species considered.

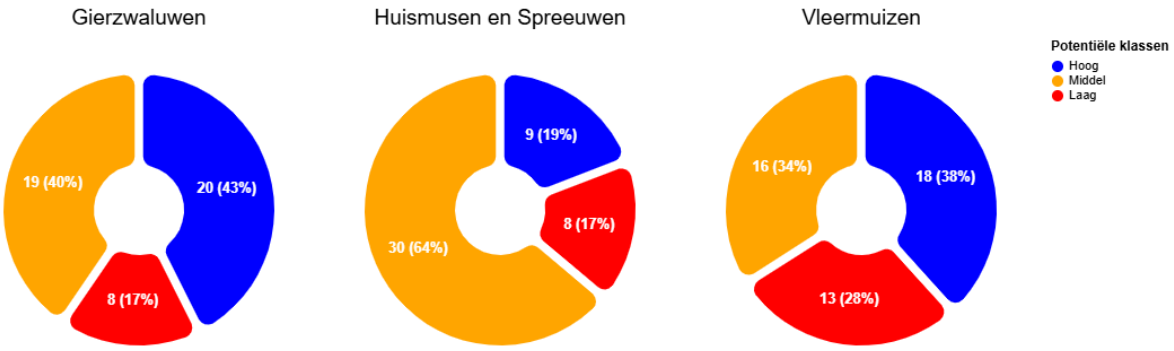


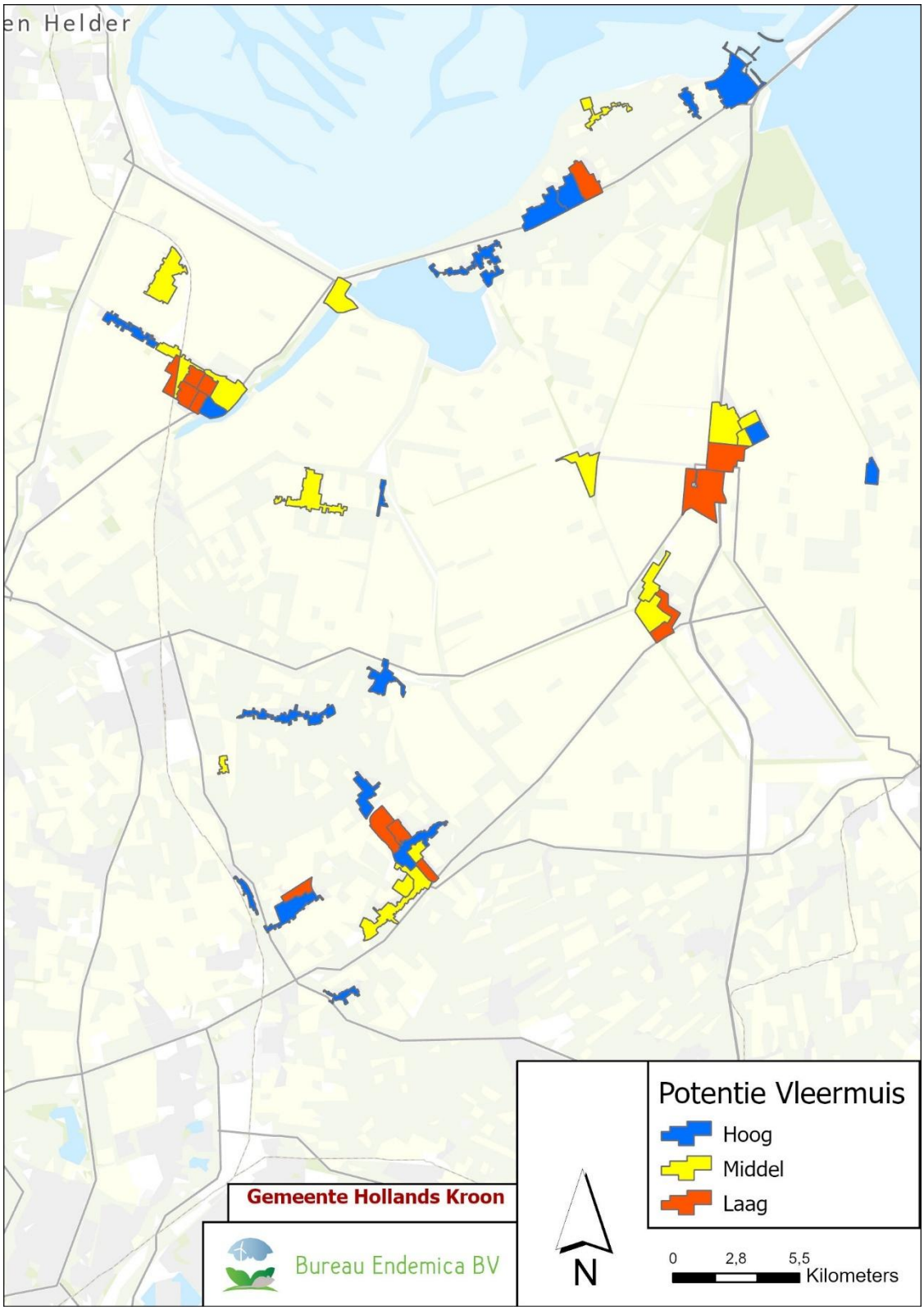
Figure 1

It appears that Hollands Kroon has neighborhoods with a higher potential for hosting swift nests. Specifically, 20 neighborhoods (43%) fall into the high potential category, while 19 neighborhoods (40%) are classified as medium potential. Only 8 neighborhoods (17%) are categorized as having low potential for supporting swift nests.

The patterns for sparrows and starlings follow a similar trend. For these birds, only 8 neighborhoods (17%) are classified as having low potential. However, unlike the swifts, the distribution between the number of neighborhoods in the high and medium categories is skewed towards the medium category, with 30 neighborhoods (64%) classified as medium and only 9 neighborhoods (19%) classified as high potential.

Regarding bats, there is a larger number of neighborhoods with a low likelihood of hosting roosts, with 13 neighborhoods (28%) categorized as low potential. In contrast, bats have a relatively high number of neighborhoods classified as high potential, with 18 neighborhoods (38%) falling into this category.

Finally, Notable neighborhoods include Barsingerhorn (woonkern), De Haukes, Kolhorn (woonkern), De Strook, Nieuwesluis, Oosterland, Oude Niedorp (woonkern), Westerland (woonkern), Winkel Dorpsstraat en Omgeving, and Zijdewind (woonkern), all of which rank highly for swifts, bats, sparrows, and starlings. In contrast, neighborhoods such as 't Veld Noord, Bedrijventerrein Kruiswijk, Bedrijventerrein Robbenplaat, Bedrijventerrein Winkelerzand, Edelesteen, Schildersbuurt, Elshof Zuid, Winkel Bomenbuurt, Winkelmadepark, and Winkel Trambaan show very low potential for all three groups (See table in appendix).


en Helder
Potentie Vleermuis
Hoog
Middel
Laag
N
0
2,8
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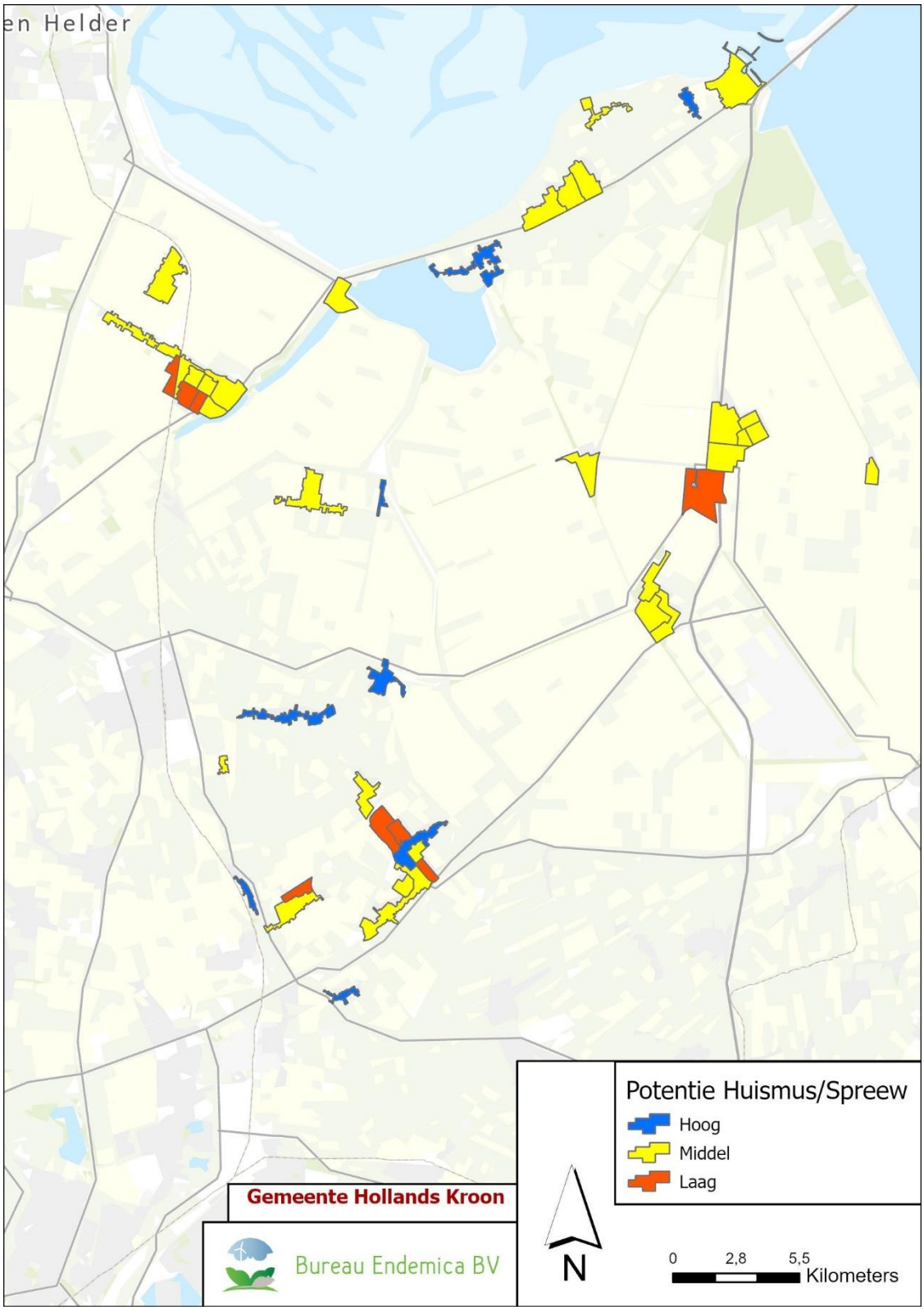
Kilometers
Gemeente Hollands Kroon
Bureau Endemica BV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Potentie Huismus/Spreew
Hoog
Middel
Laag
Gemeente Hollands Kroon
Bureau Endemica BV
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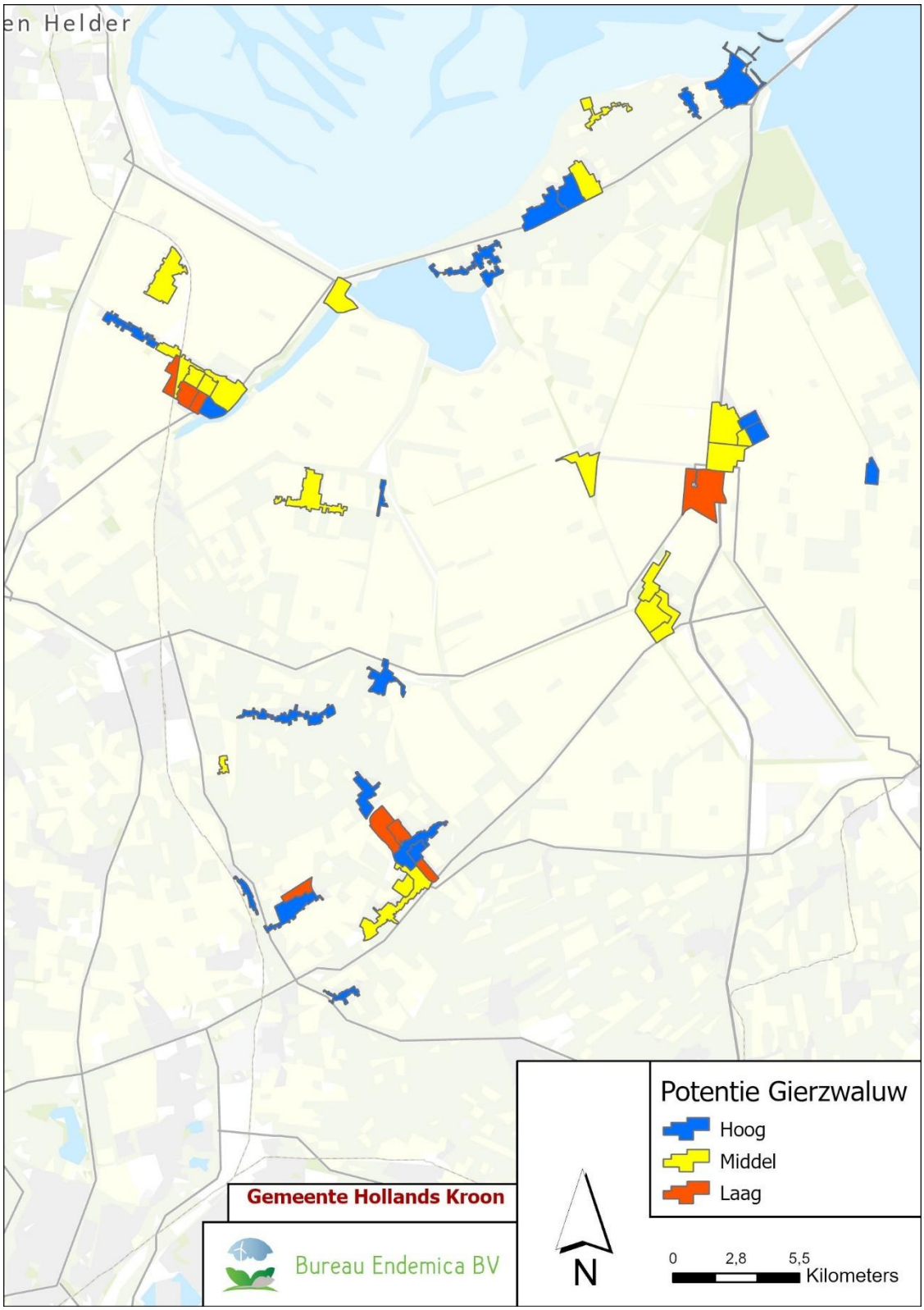
Kilometers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Potentie Gierzwaluw
Hoog
Middel
Laag
Gemeente Hollands Kroon
Bureau Endemica BV
N
0
2,8
5,5
Kilometers

Appendix

Buurt	Daktype – Schuin dak	Bouwjaar	Energielabel	Groen in omgeving	Huismus/spreeuw	Gierzwaluw	Vleermuizen
't Veld (woonkern)	50-75 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
't Veld Noord	50-75 %	≥ 2004	≥ B	Weinig	Laag	Laag	Laag
Agro Sanatio	50-75 %	1976 – 2003	≥ B	Weinig	Middel	Middel	Laag
Barsingerhorn (woonkern)	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog
Bedrijventerrein Kruiswijk	25-50 %	1976 – 2003	≥ B	Weinig	Laag	Laag	Laag
Bedrijventerrein Middenmeer	25-50 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Bedrijventerrein Robbenplaat	< 25%	1976 – 2003	≥ B	Weinig	Laag	Laag	Laag
Bedrijventerrein Winkelerzand	25-50 %	1976 – 2003	≥ B	Weinig	Laag	Laag	Laag
Breezand (woonkern)	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
De Haukes	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog
De Veert	50-75 %	1976 – 2003	≥ B	Midden	Middel	Middel	Middel
Den Oever (woonkern)	50-75 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
Edelesteen en Schildersbuurt	25-50 %	1976 – 2003	≥ B	Weinig	Laag	Laag	Laag
Elshof Noord	50-75 %	1976 – 2003	≥ B	Weinig	Middel	Middel	Laag
Elshof Zuid	50-75 %	≥ 2004	≥ B	Weinig	Laag	Laag	Laag
Gelderse Buurt	50-75 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
Haringhuizen (woonkern)	50-75 %	≤ 1975	≥ B	Midden	Middel	Middel	Middel
Hippolytushoef Centrum (woonkern)	50-75 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
Hippolytushoef Oost (woonkern)	50-75 %	1976 – 2003	≥ B	Weinig	Middel	Middel	Laag
Hippolytushoef West (woonkern)	50-75 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
Kleine Sluis	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Kolhorn (woonkern) en De Strook	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog
Kreileroord	50-75 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
Lutjewinkel (woonkern)	50-75 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
Middenmeer Centrum	50-75 %	≤ 1975	≥ B	Midden	Middel	Middel	Middel
Middenmeer Kroonwaard, Schelpenwijk e.o.	50-75 %	1976 – 2003	≥ B	Weinig	Middel	Middel	Laag
Nieuwe Niedorp Dorpsstraat e.o.	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel

Nieuwesluis	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog
Oosterland	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog
Oosterterp en Zuiderpark	50-75 %	1976 – 2003	≥ B	Weinig	Middel	Middel	Laag
Oude Niedorp (woonkern)	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog
Planetenwijk	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Schepenwijk	50-75 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
Slootdorp (woonkern)	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Spoorbuurt	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Stroe	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Van Ewijcksluis	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Vogelbuurt	25-50 %	≤ 1975	≤ C	Weinig	Middel	Hoog	Hoog
Waddenwijk	50-75 %	1976 – 2003	≤ C	Weinig	Middel	Hoog	Middel
Westerland (woonkern)	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog
Wieringerwaard (woonkern)	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Wieringerwerf Centrum	50-75 %	≤ 1975	≥ B	Weinig	Middel	Middel	Middel
Winkel Bomenbuurt en Winkelmadepark	25-50 %	1976 – 2003	≥ B	Weinig	Laag	Laag	Laag
Winkel Dorpsstraat en omgeving	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog
Winkel Trambaan	50-75 %	≥ 2004	≥ B	Weinig	Laag	Laag	Laag
Winkel ten zuidoosten van de Dorpsstraat	50-75 %	1976 – 2003	≤ C	Weinig	Middel	Hoog	Middel
Zijdewind (woonkern)	50-75 %	≤ 1975	≤ C	Midden	Hoog	Hoog	Hoog