Development of a nature value index for pastoral farmland – a rapid farm-level assessment.

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Overview

- Nature Value Index –HNV farmland
- Method
- Results
- Conclusion

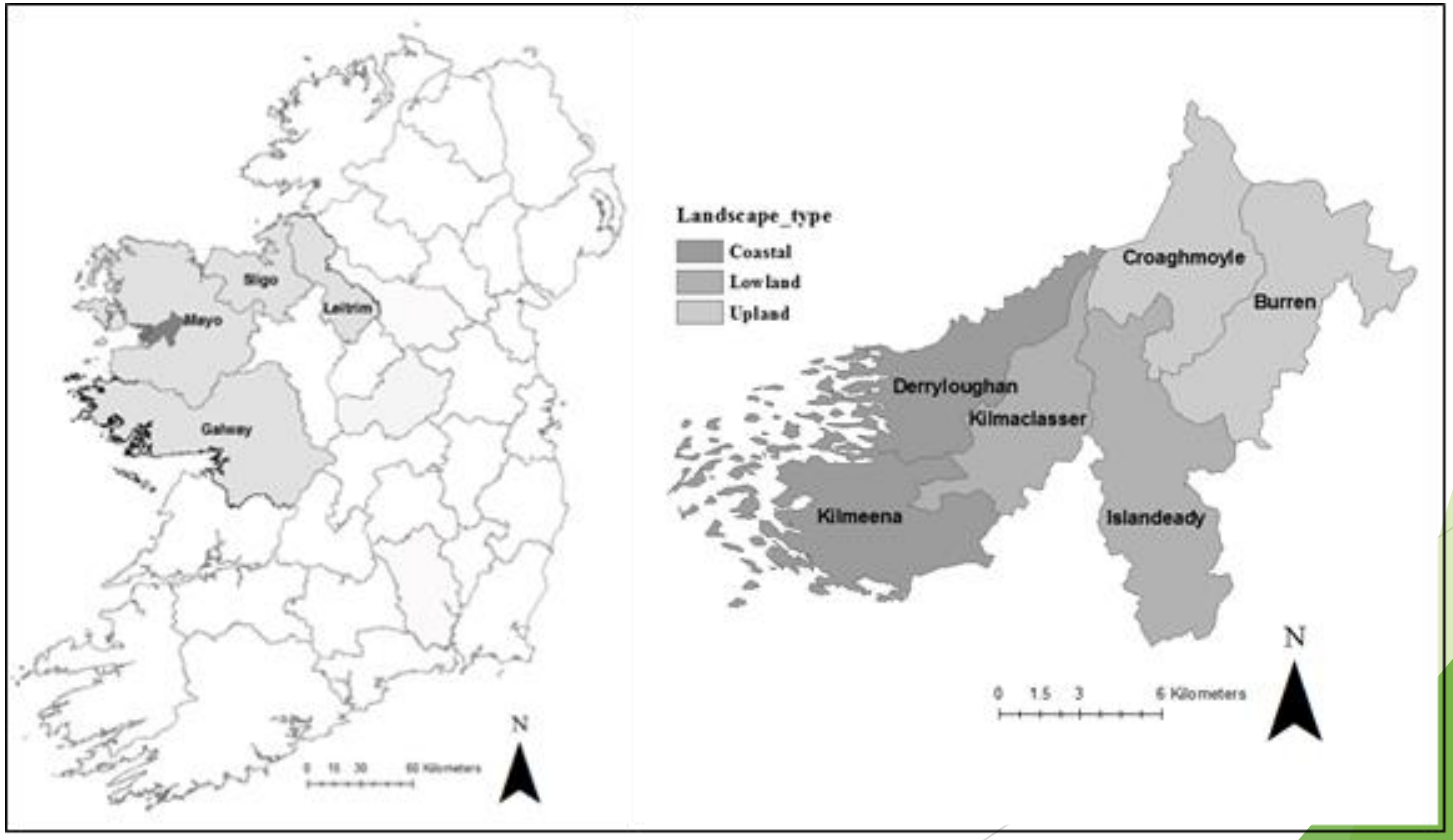
High Nature Value farmland in NW Ireland

How quantify the Nature Value of a farm?

Nature Value Index

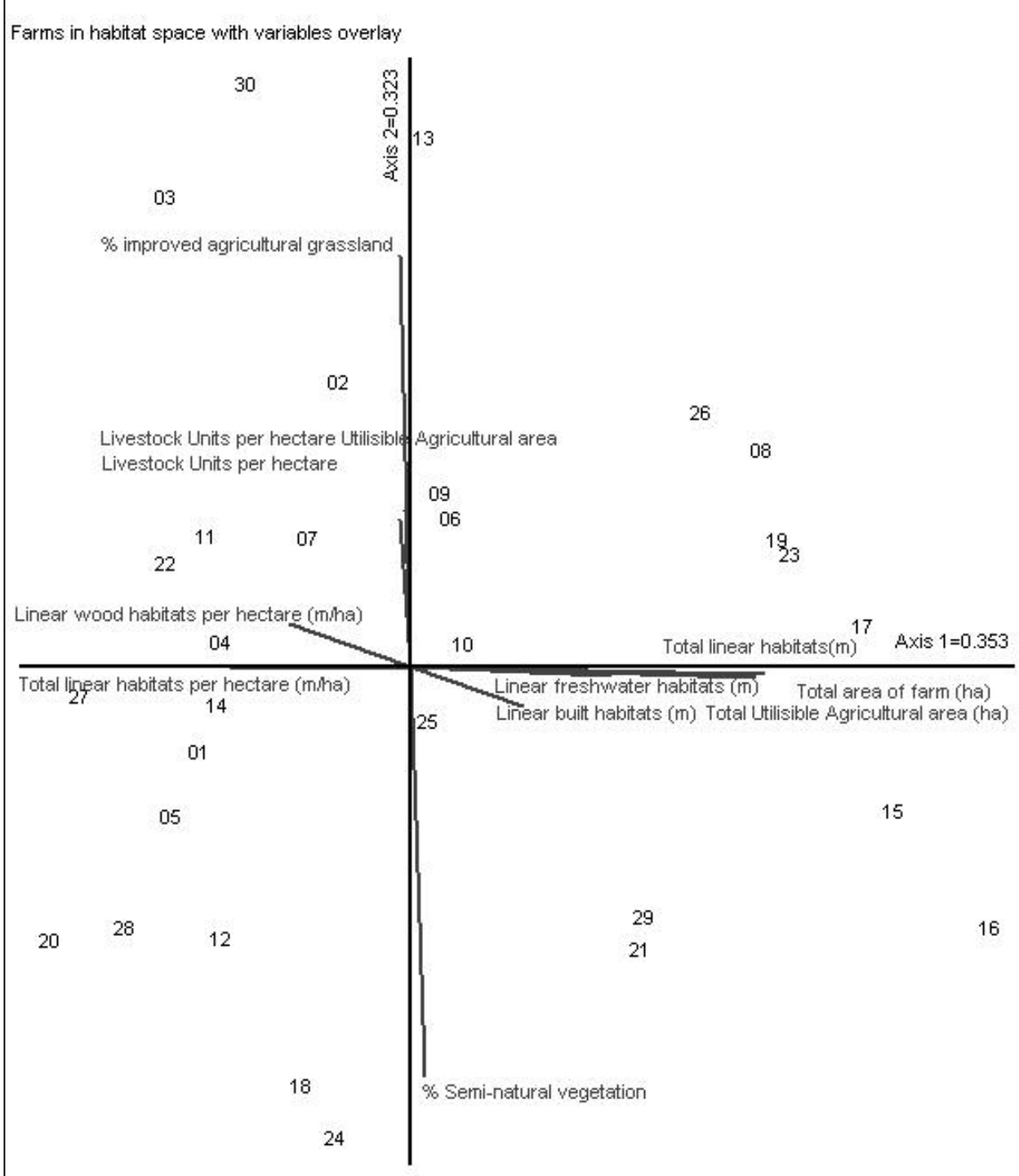
Method

- 30 *active* farms
- Questionnaire
- Field survey
- Detailed 5 step analysis



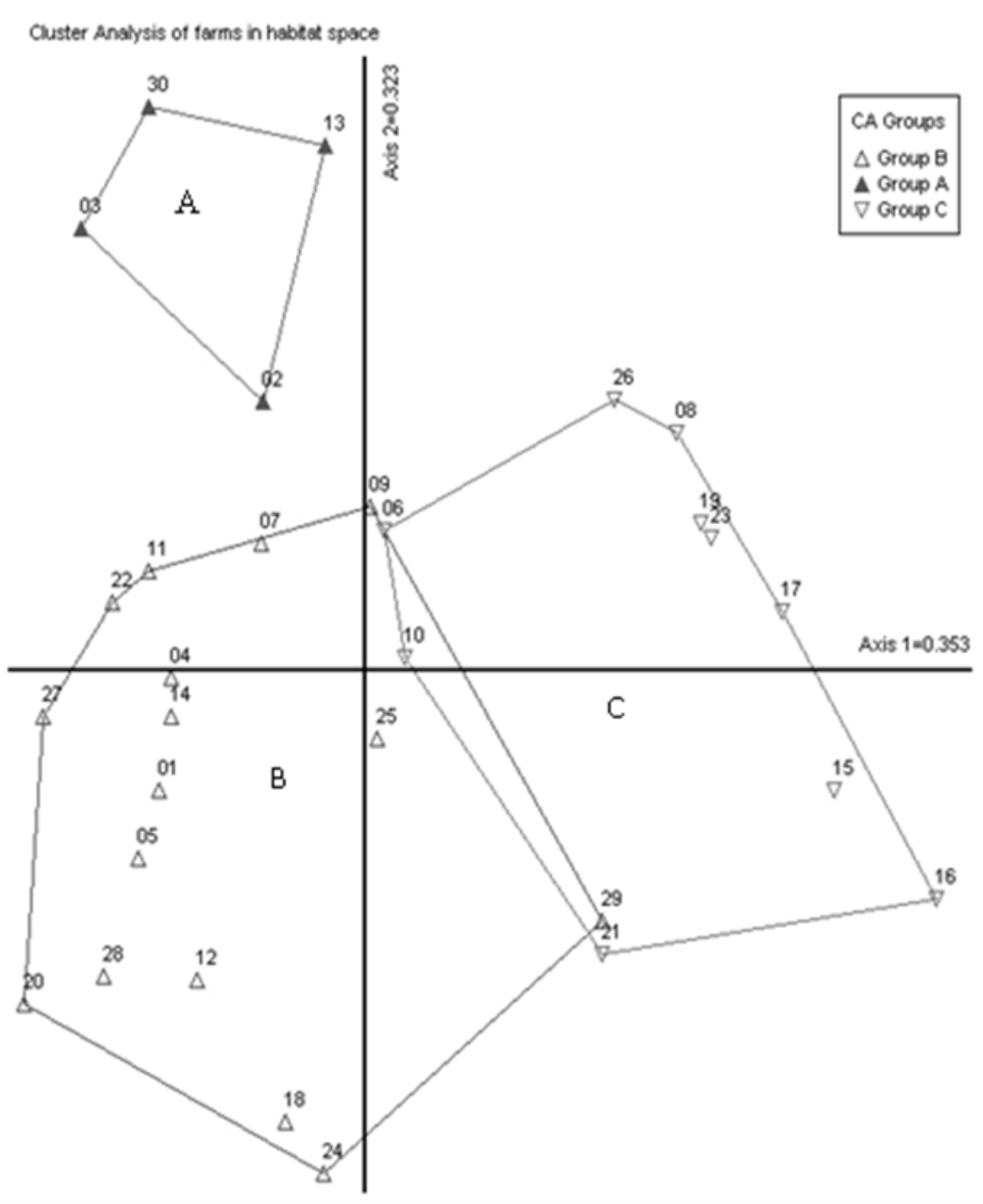
NMS

- 3-d solution
- Axis 1
  - Farm size
  - Density of linear features
- Axis 2
  - Proportion semi-natural vegetation/improved agricultural grassland
  - Stocking Density



Cluster Analysis

- 3 discreet groups
- High intensity to low intensity farm management



PCR

- 2 Principal Components
  - Landcover & Landuse
  - Landscape heterogeneity

	PC1	PC2
Variable	r	r
Percentage improved agricultural grassland on farm	-0.8487	0.3781
Percentage semi-natural habitat on farm	0.8486	-0.3766
Livestock Units per hectare	-0.8037	0.4642
Livestock Units per hectare of utilisable agricultural area (ha)	-0.8132	0.4399
Total area (ha)	0.6689	0.7172
Total area of utilisable agricultural area (ha)	0.6455	0.7326
Total length of linear habitats per hectare (m/ha)	-0.3939	-0.6165
Variance explained	*50.9*	*27.962*

PCR

- PC1 - Landcover & Landuse
- PC2 - Landscape heterogeneity

	Variable	R^2	F-value	p-value	SC
Habitat diversity					
Step 1	PC2	0.301	12.075	0.002	0.549
Habitat number					
Step 1	PC1	0.134	4.319	0.047	0.366
Plant diversity					
Step 1	PC1	0.159	5.277	0.029	0.398

Index development

% improved Grassland	Score	Livestock Units per ha UAA	Score	Total length of linear habitat (m/ha)	Score	Final Score
91 - 100	0.5	> 2.26	0.3	< 100	0.2	1
81-90	1	2.01 - 2.25	0.6	101 - 125	0.4	2
71 - 80	1.5	1.76 - 2.00	0.9	126 - 150	0.6	3
61 - 70	2	1.51 - 1.75	1.2	151 - 175	0.8	4
51 - 60	2.5	1.26 - 1.50	1.5	176 - 200	1	5
41 - 50	3	1.01 - 1.25	1.8	201 - 225	1.2	6
31 - 40	3.5	0.76-1.00	2.1	226 - 250	1.4	7
21 - 30	4	0.51 - 0.75	2.4	251 - 275	1.6	8
11 - 20	4.5	0.26 - 0.5	2.7	276 - 300	1.8	9
0 - 10	5	0.15- 0.25	3	> 300	2	10

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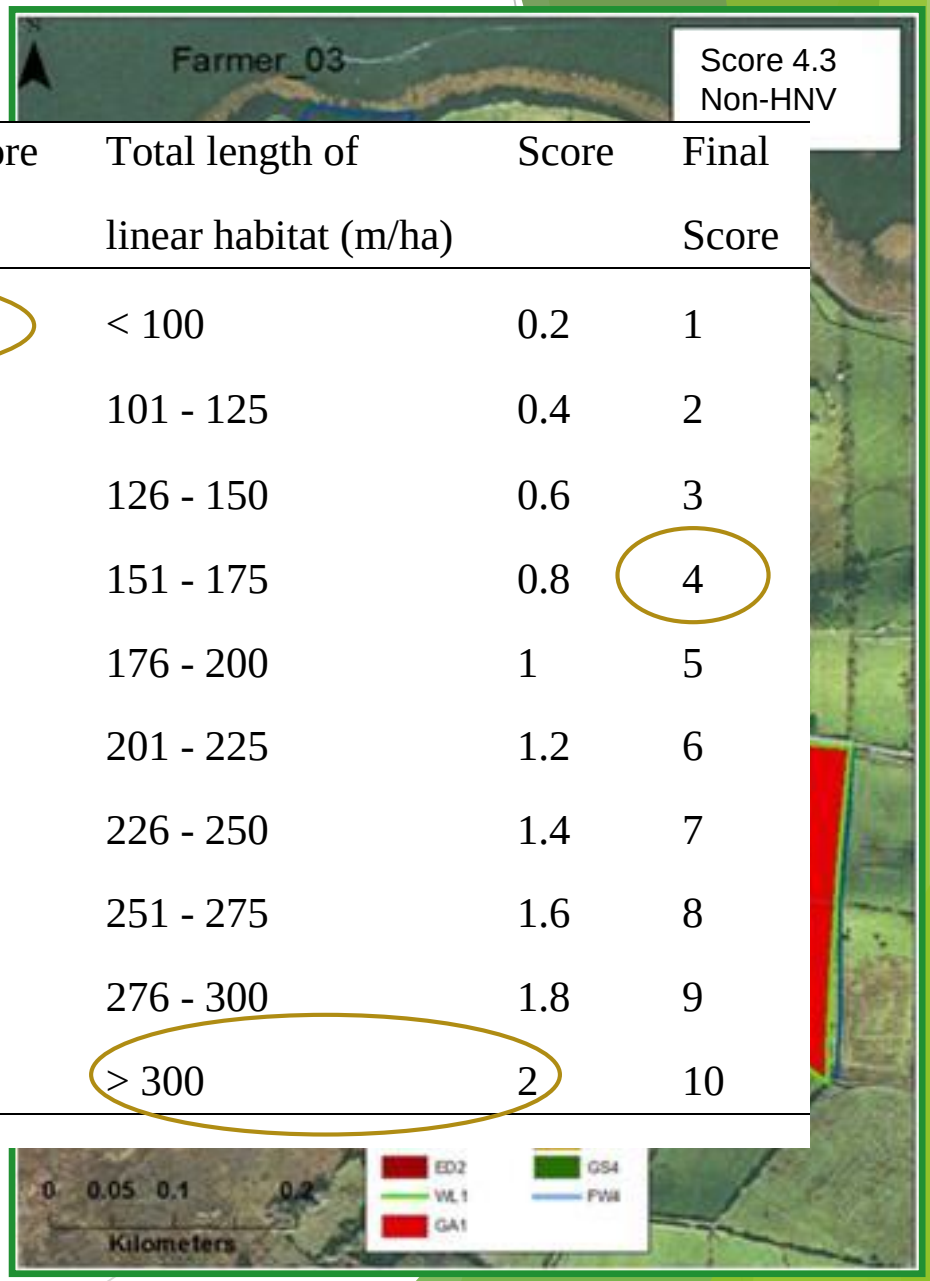
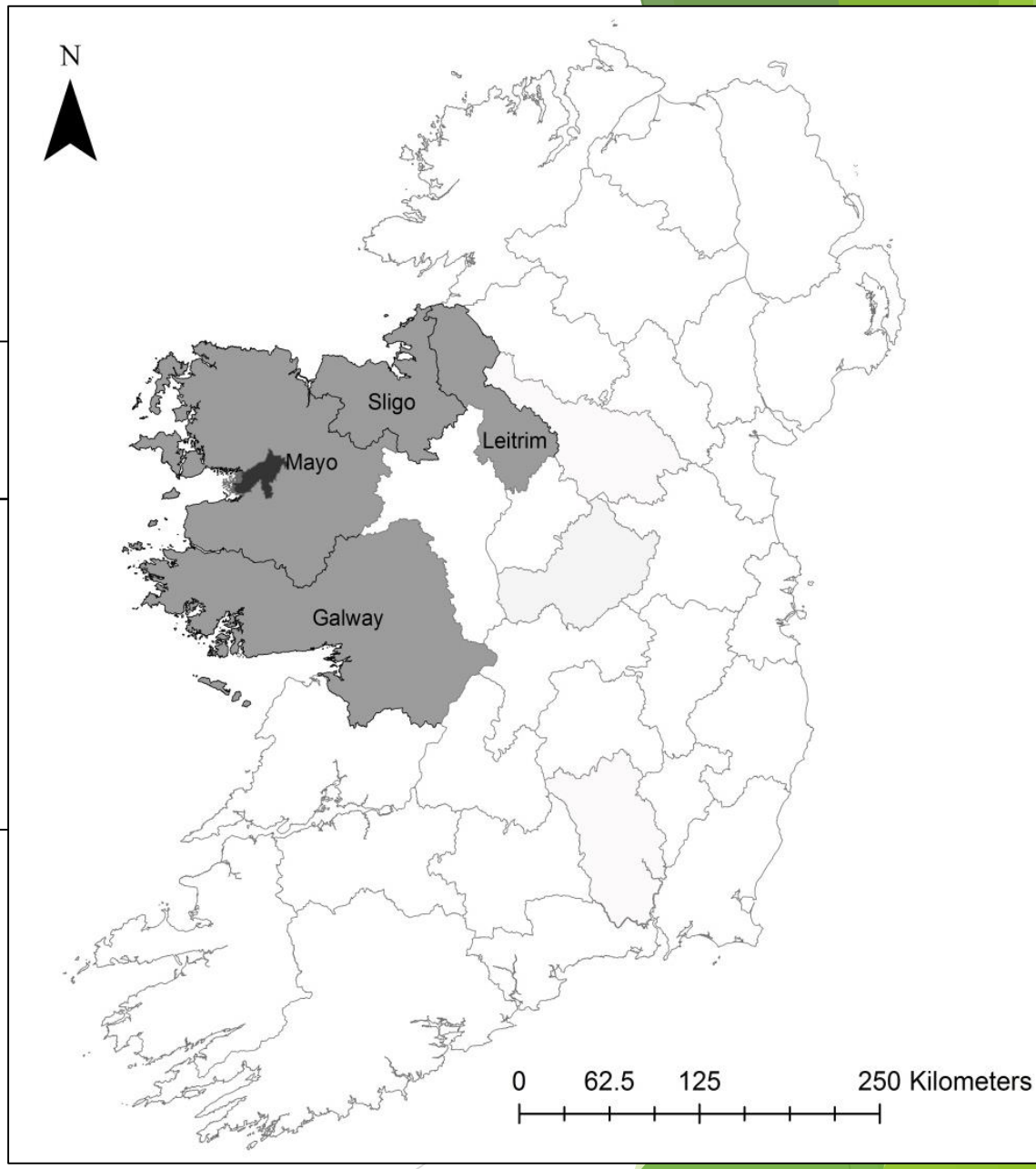


Validation

- Applied to additional 60 farms, 3 counties

	Index score
Plant species richness	0.465**
Habitat diversity	0.392**
Plant diversity	0.591**



Conclusion

- Index based on easily measureable variables
- **Simple** assessment/communication tool of nature value of farmland
- Simply constructed, can be applied to data from other pastoral regions
- Used to determine farm eligibility for future agri-supports
- Incorporated into “Green” farming marketing initiatives e.g. *Origin Green*
- Complements regional/national HNV potential maps (C. Sullivan)

Thank you

Paper published in Ecological Indicators

Boyle, Hayes et al 2015. *Development of a nature value index for pastoral farmland –A rapid farm-level assessment*. Ecological Indicators 56 p.31-40