1   **Supplementary Material 1**

2   Supplementary material includes: Table of observed and expected values for the trait

3   'Regularity of Teeth' for six Red List categories; table of year of collection of herbarium

4   material divided by six Red List categories; stacked bar charts and boxplots of leaf traits for

5   six Red List categories; 95% confidence intervals for the difference in proportions of the sub-

6   categories of 'Regularity of Teeth' for each Red List category pair; stressplot for the nMDS

7   ordination; and images of the 14 taxa photographed at the National Botanic Gardens,

8   Glasnevin.

9

10   Can the extinction risk of Irish vascular plants be predicted using leaf traits?

11   Biodiversity and Conservation

12   Harrison O'Rourke[1*], Eimear Nic Lughadha[2], and Karen L. Bacon[1]

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14   [2] Conservation Science Department, Royal Botanic Gardens, Kew, Richmond, UK

15   * corresponding author (h.orourke2@nuigalway.ie)

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20 Table S1. The number of observed values for the trait 'Regularity of Teeth' (top); and the

21 number of expected values if there was no association between 'Regularity of Teeth' and

22 extinction risk (bottom).

Observed						
	RE	CR	EN	VU	NT	LC
No Teeth	12	11	18	41	75	596
Regularly Spaced Teeth	0	1	2	8	7	121
Irregularly Spaced Teeth	1	7	5	5	8	111
Expected						
No Teeth	9.51	13.90	18.29	39.52	65.86	605.91
Regularly Spaced Teeth	1.76	2.57	3.38	7.29	12.16	111.85
Irregularly Spaced Teeth	1.73	2.53	3.33	7.19	11.98	110.24

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24 Table S2. Mean year in which the herbarium samples were collected, divided by Red List

25 category.

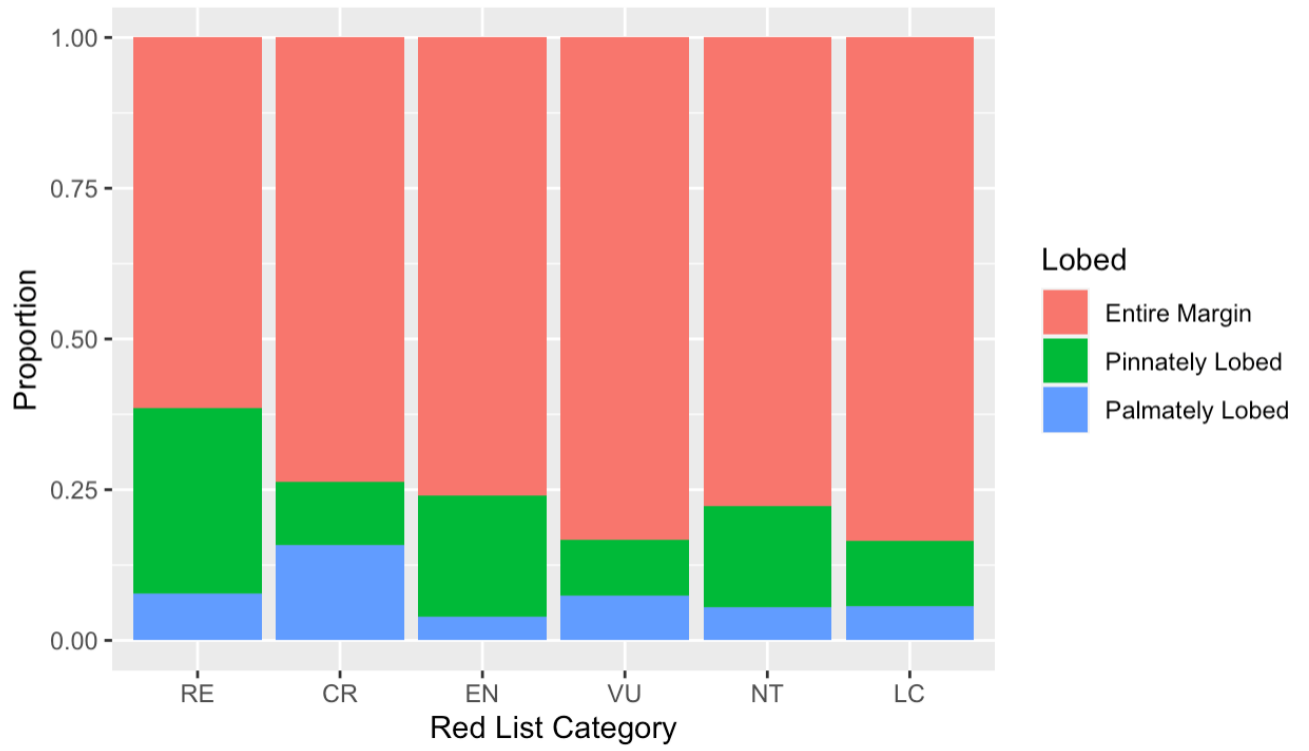| Red List Category	Mean (± SD)
Regionally Extinct	1916 (± 50.25)
Critically Endangered	1923.84 (± 38.84)
Endangered	1917.92 (± 41.58)
Vulnerable	1930.89 (±40.31)
Near Threathened	1929.76 (±49.02)
Least Concern	1943.29 (±45.32)

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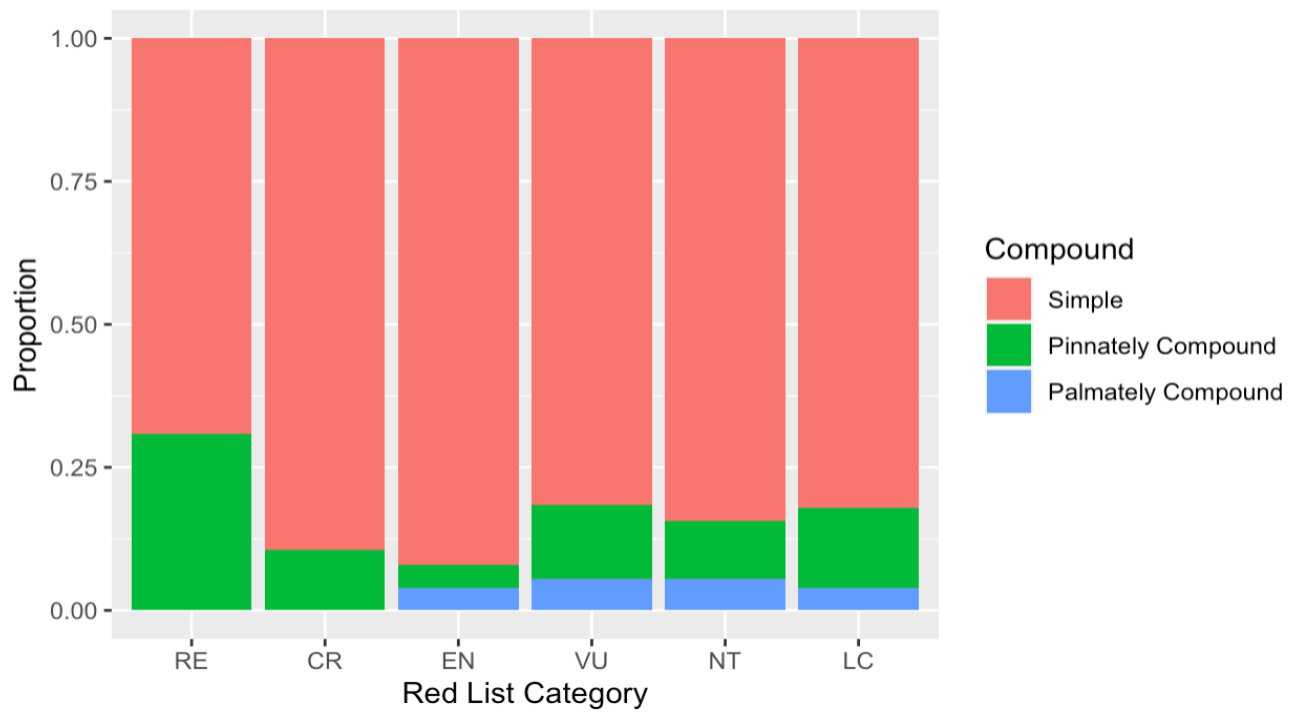
28

29   **Fig. S1** Stacked bar chart of the proportion of compound leaves for the Irish flora divided
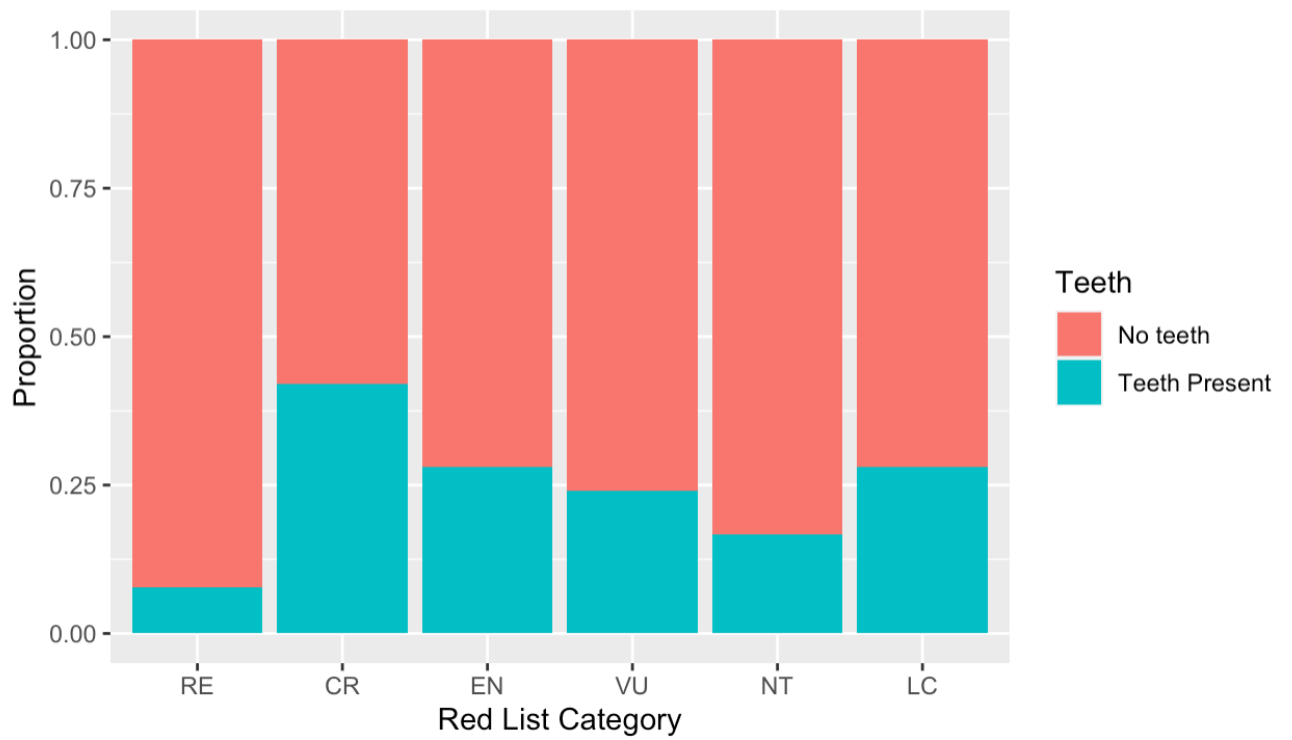
30   into six extinction risk categories

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Fig. S2 Stacked bar chart of the proportion of lobed leaves for the Irish flora divided into six
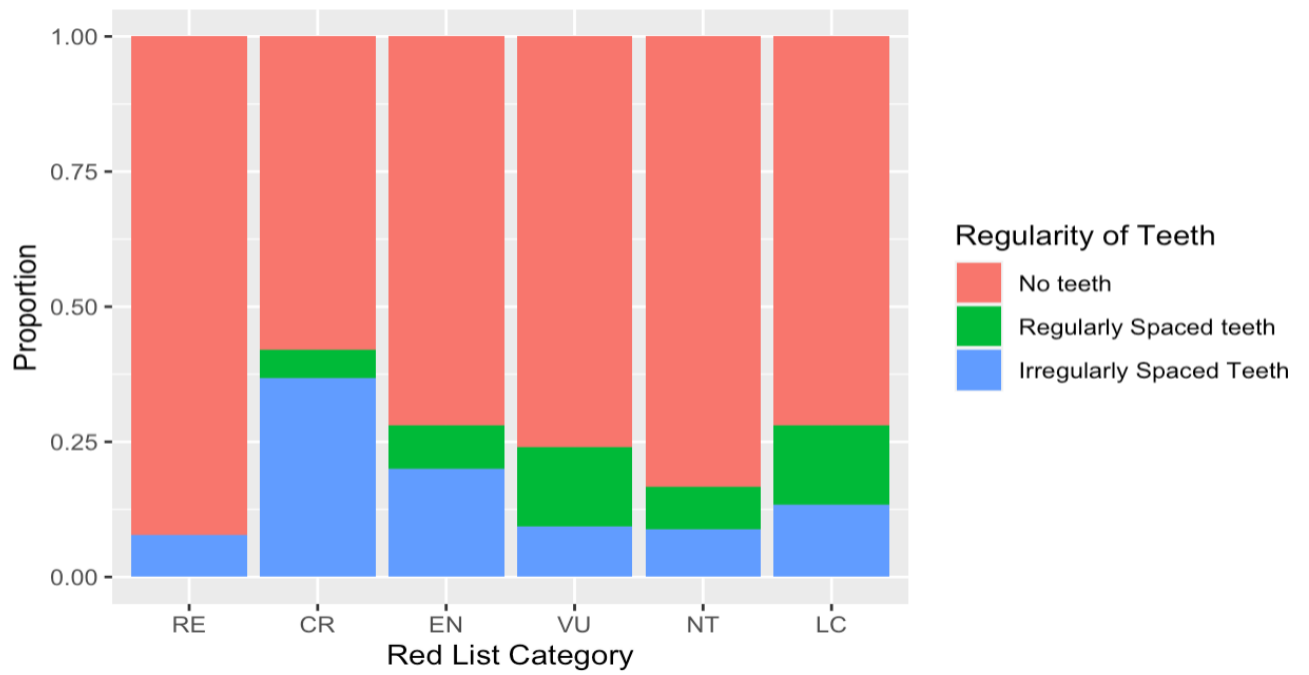
extinction risk categories

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Fig. S3 Stacked bar chart of the proportion of toothed leaves for the Irish flora divided into
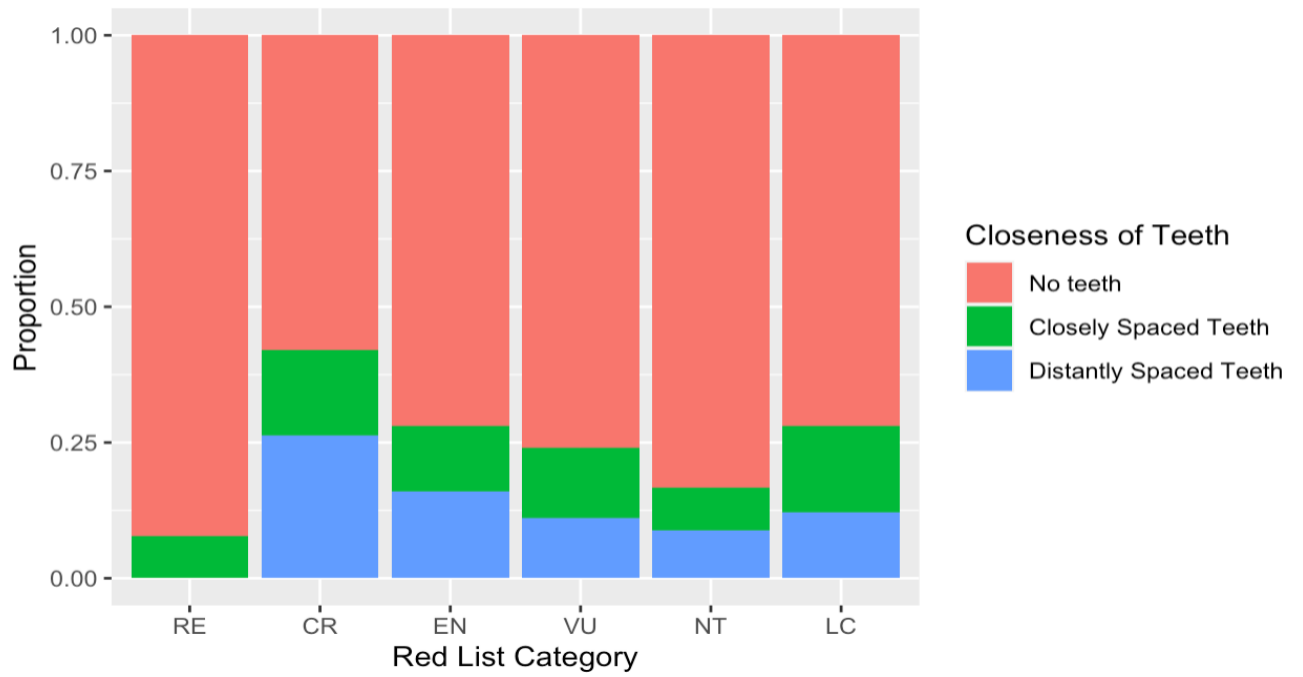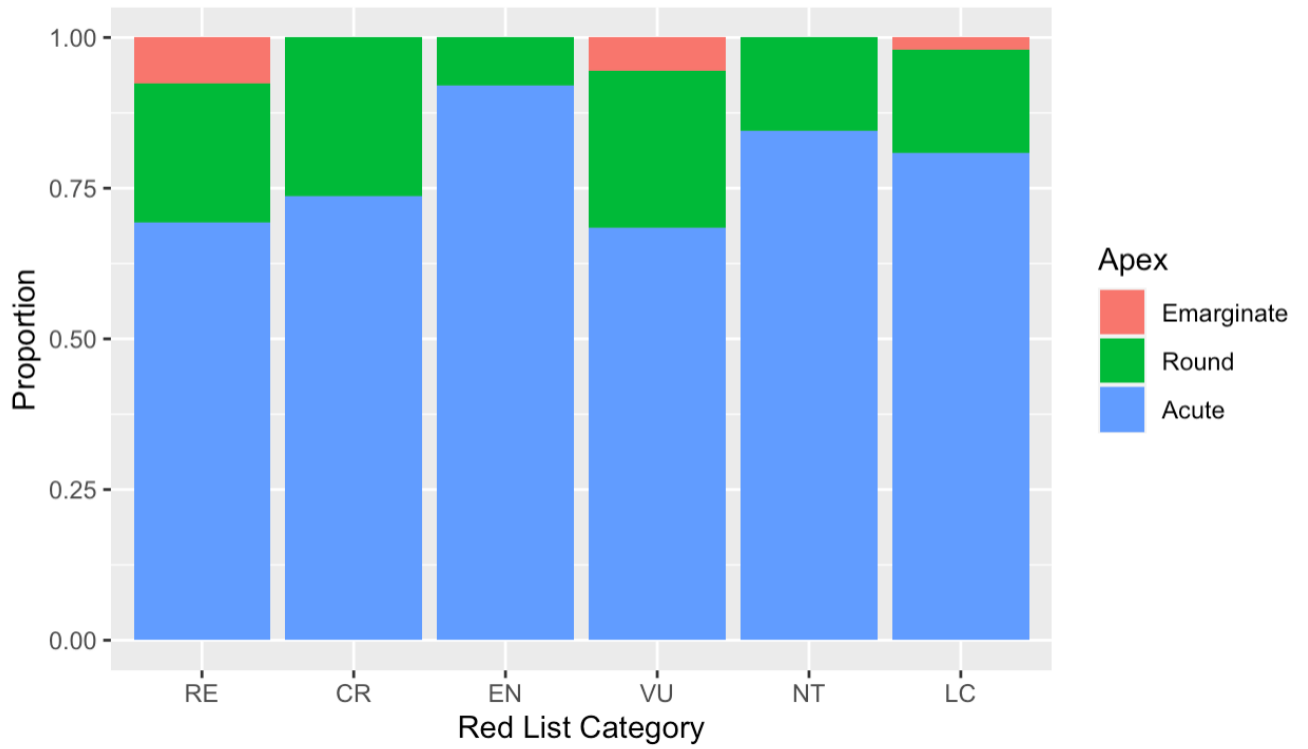
six extinction risk categories

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40 **Fig. S4** Stacked bar chart of the proportion of regularly spaced leaf teeth for the Irish flora
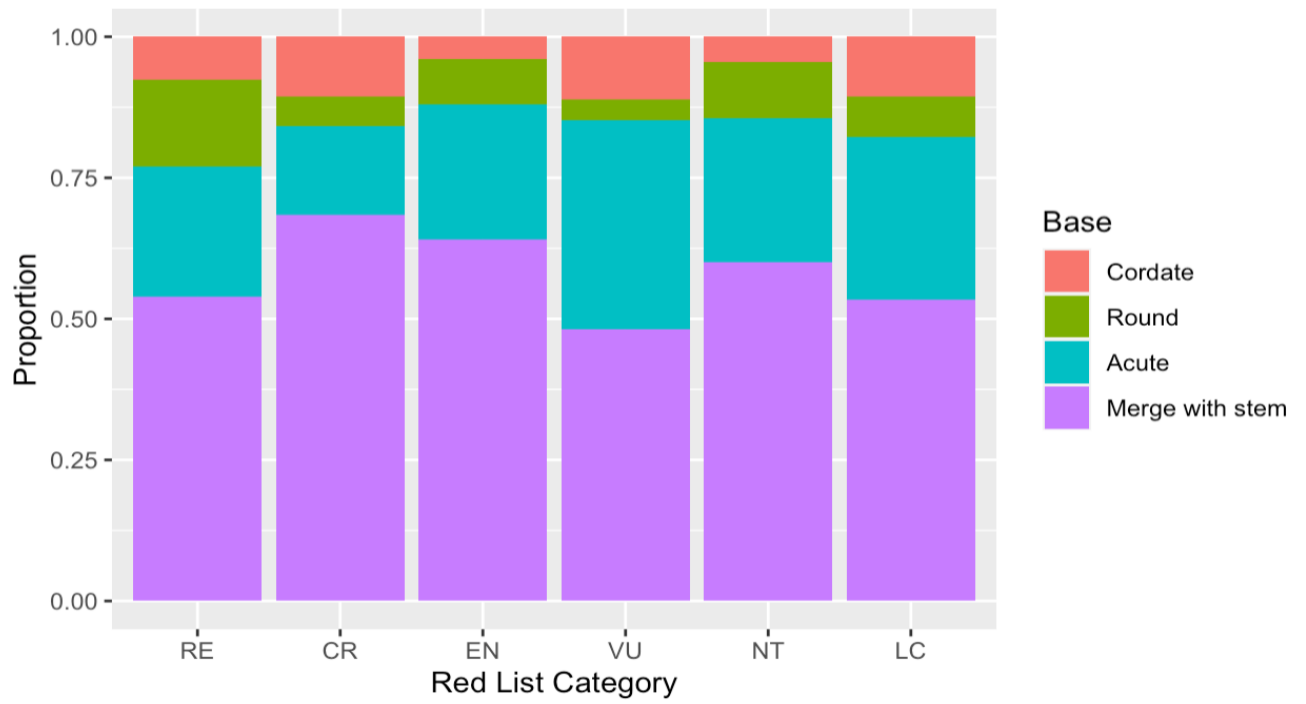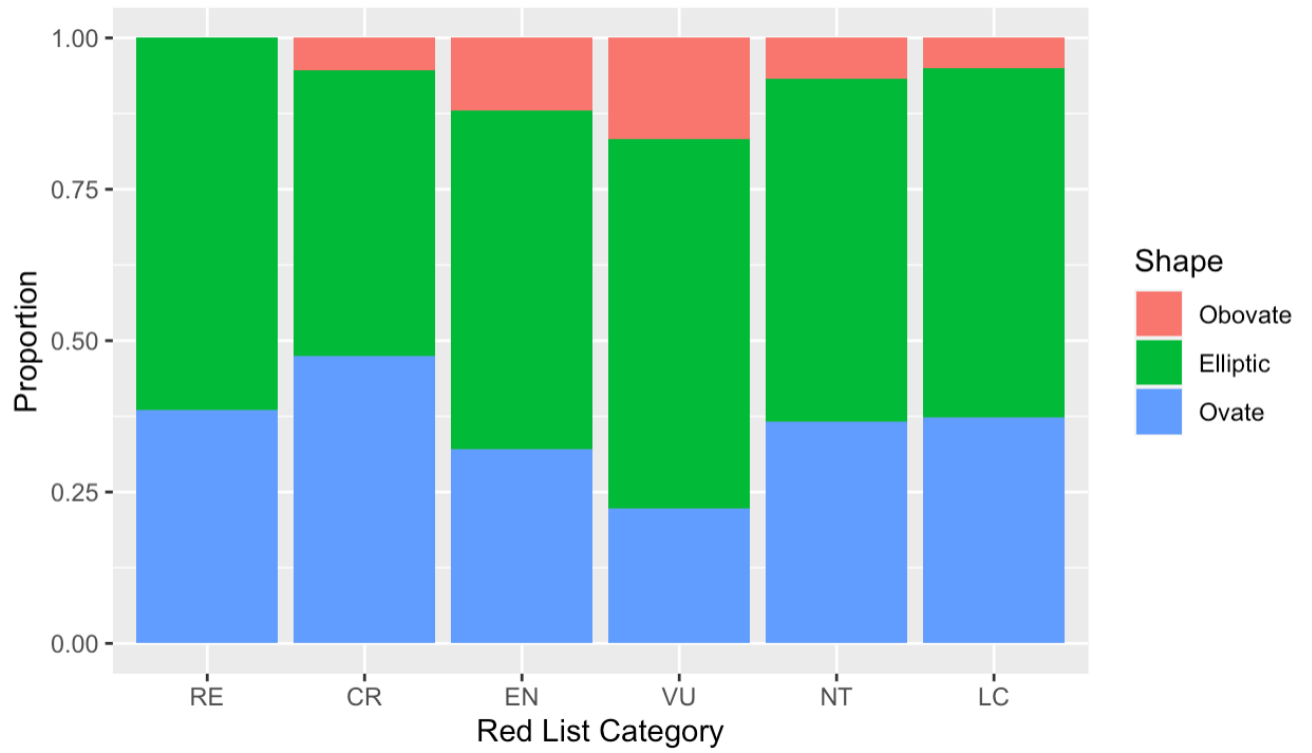
41 divided into six extinction risk categories

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Fig. S5 Stacked bar chart of the proportion of closely spaced leaf teeth for the Irish flora

46   divided into six extinction risk categories

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Fig. S6 Stacked bar chart of the proportion of leaf apex for the Irish flora divided into six

extinction risk categories

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Fig. S7 Stacked bar chart of the proportion of leaf base for the Irish flora divided into six
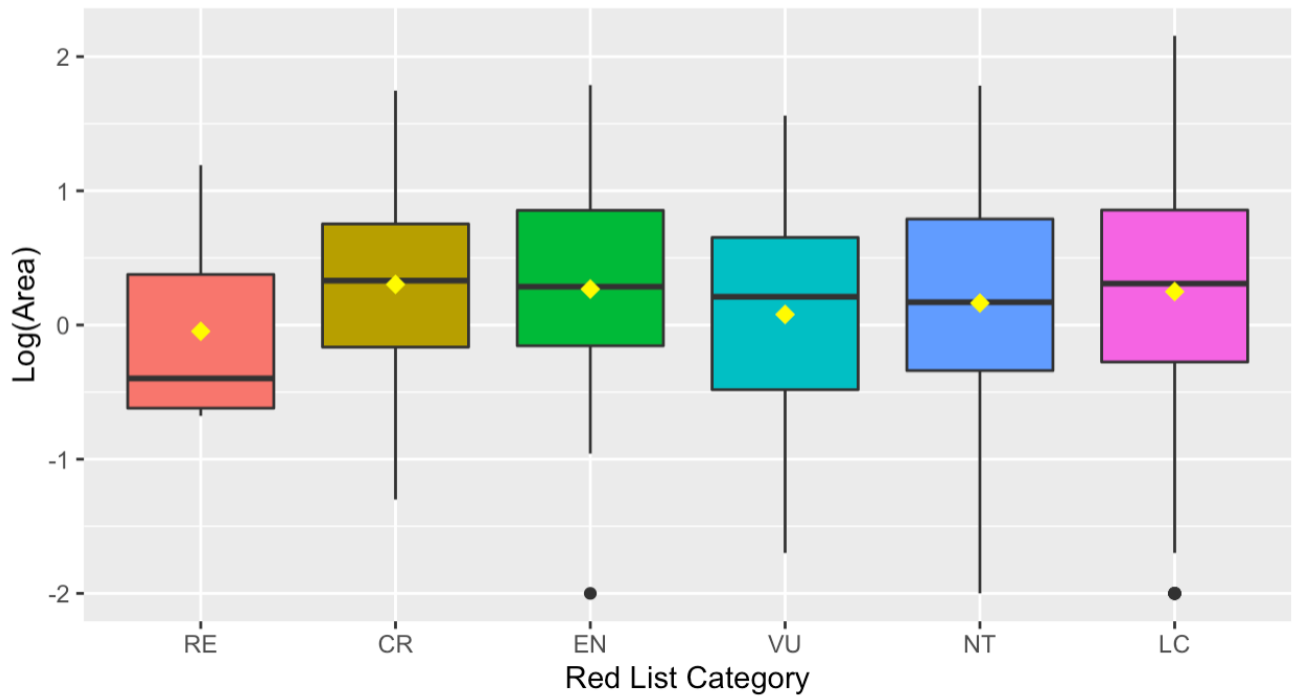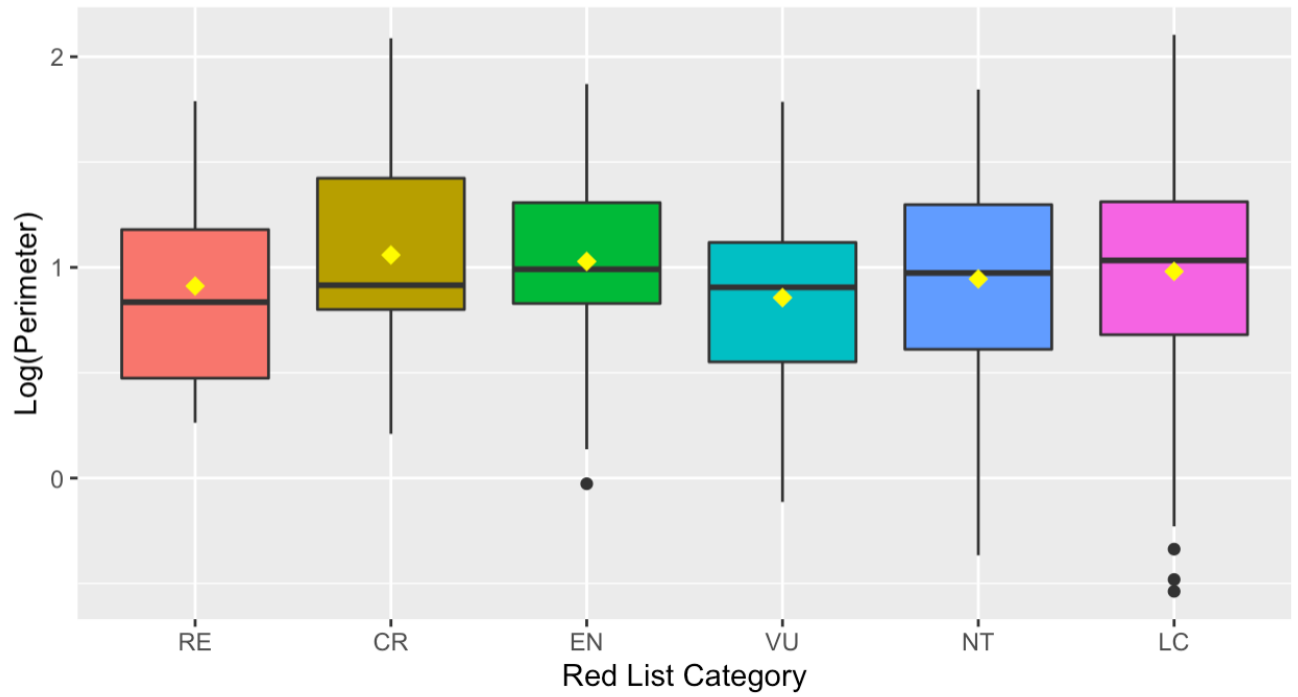
extinction risk categories

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Fig. S8 Stacked bar chart of the proportion of leaf shape for the Irish flora divided into six

extinction risk categories

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Fig. S9 Boxplot of the log leaf area for the Irish flora divided into six extinction risk
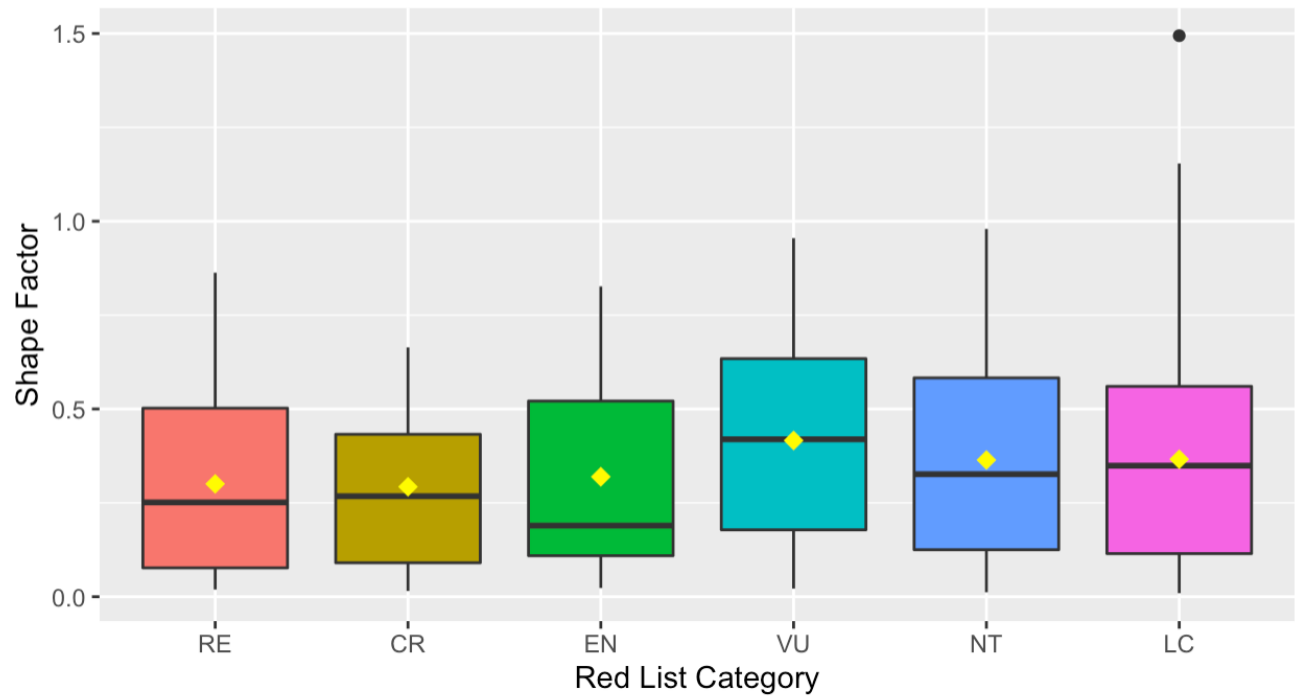
categories (mean symbol superimposed, yellow diamond)

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Fig. S10 Boxplot of the log leaf perimeter for the Irish flora divided into six extinction risk
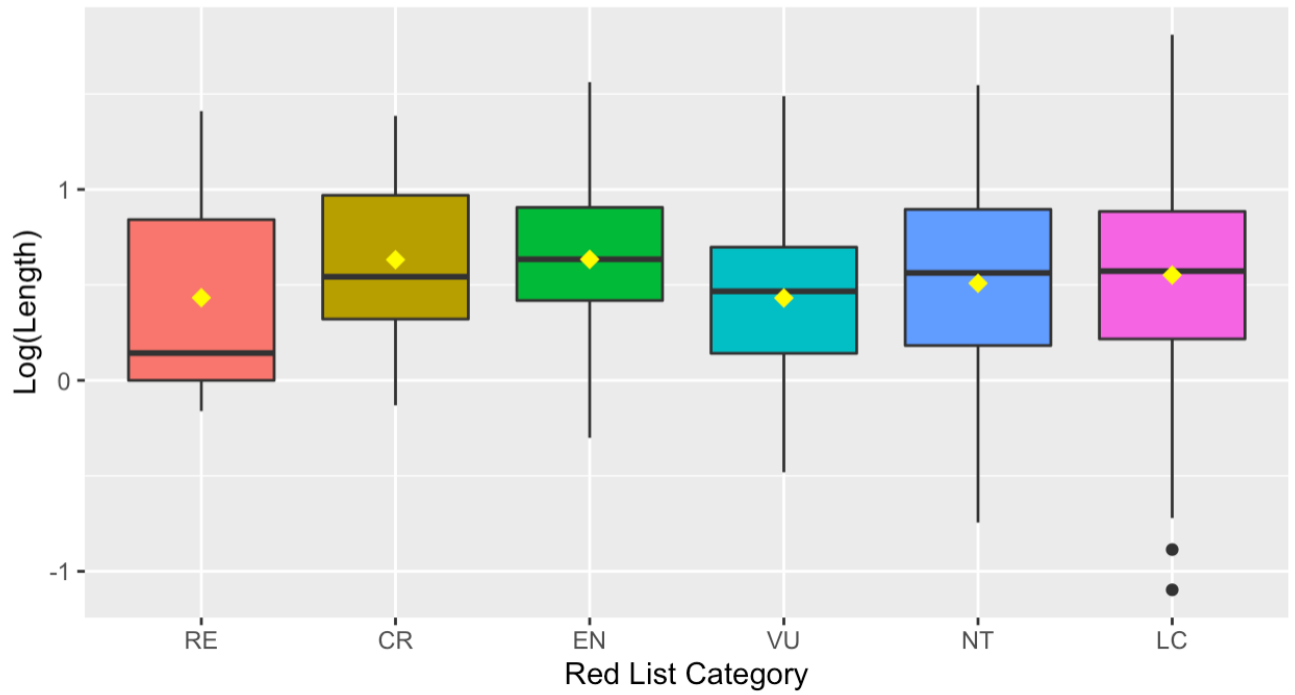
categories (mean symbol superimposed, yellow diamond)

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Fig. S11 Boxplot of the leaf shape factor for the Irish flora divided into six extinction risk
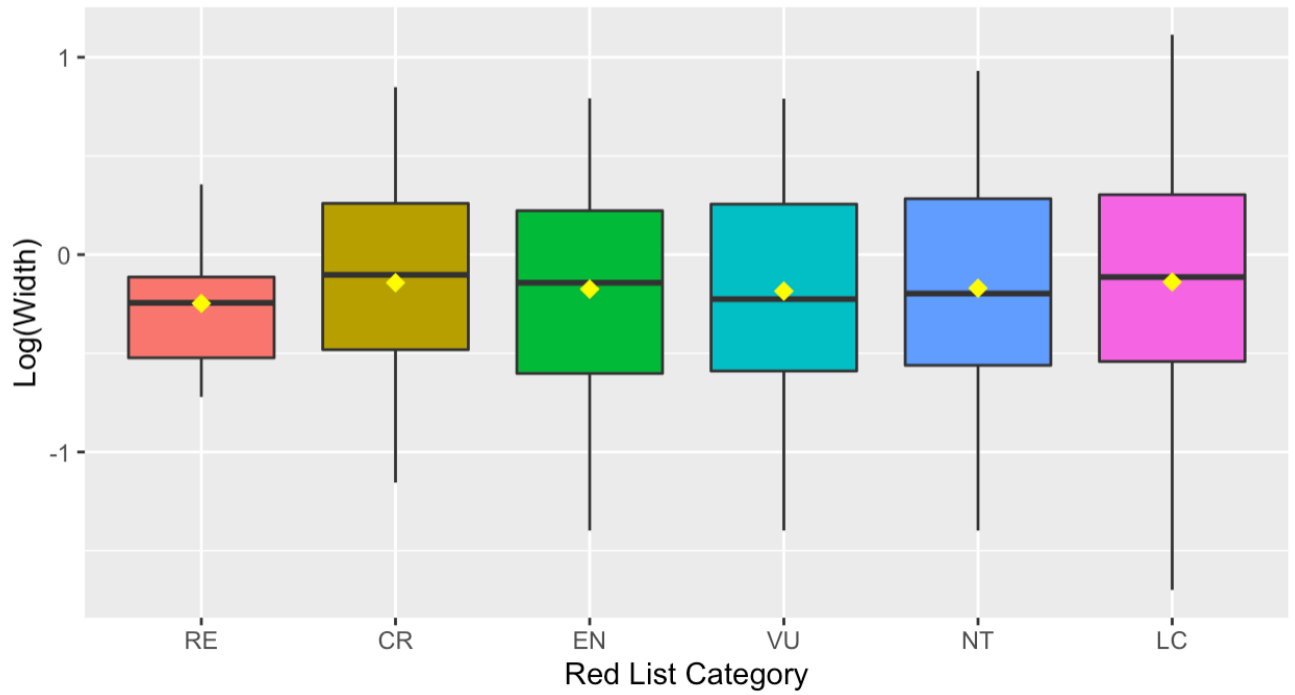
categories (mean symbol superimposed, yellow diamond)

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Fig. S12 Boxplot of the log leaf length for the Irish flora divided into six extinction risk
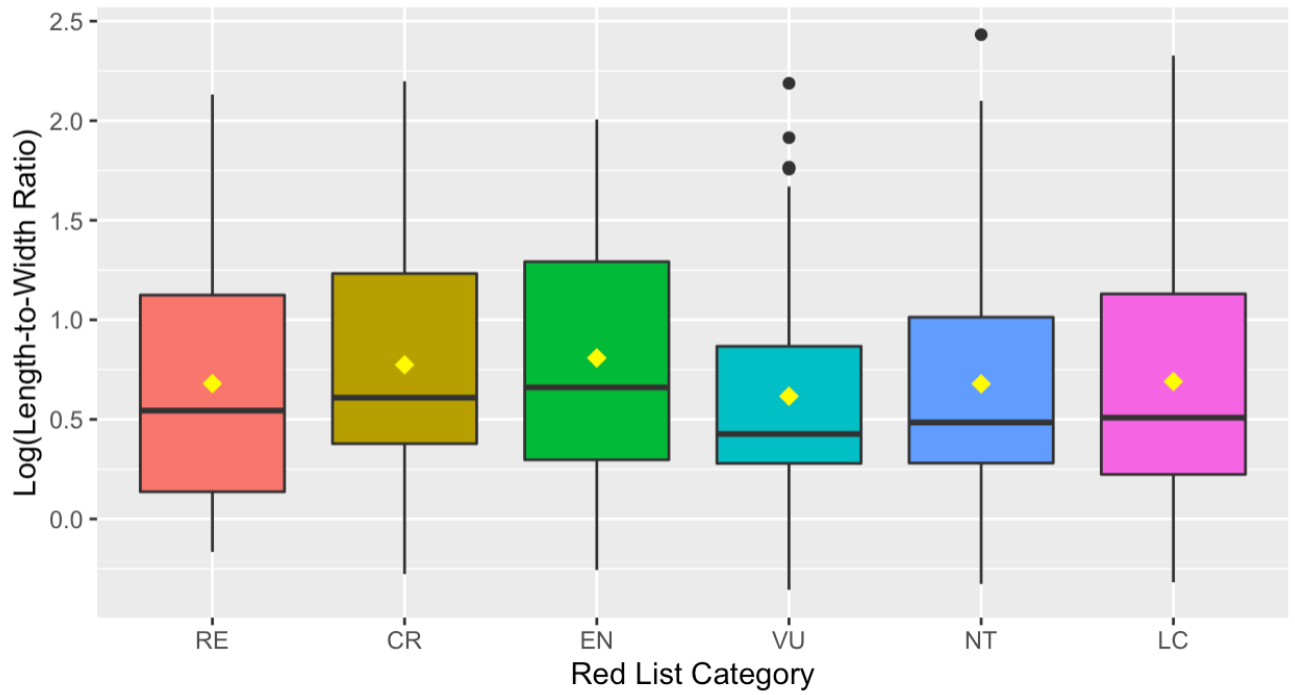
categories (mean symbol superimposed, yellow diamond)

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Fig. S13 Boxplot of the log leaf width for the Irish flora divided into six extinction risk
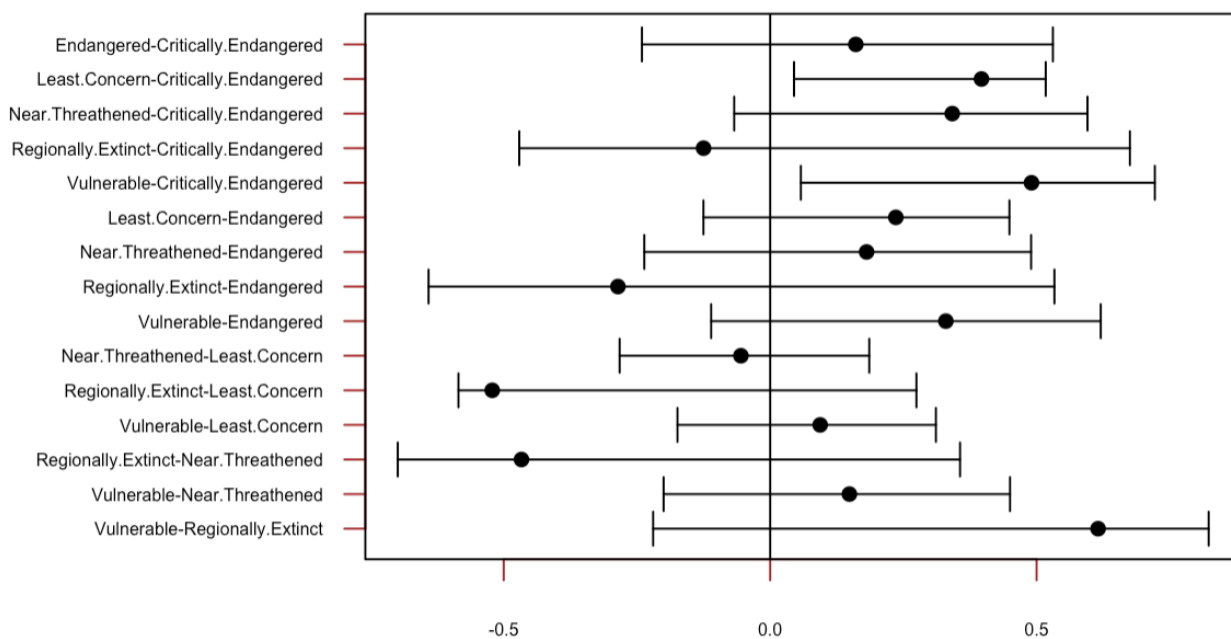
categories (mean symbol superimposed, yellow diamond)

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Fig. S14 Boxplot of the log leaf length-to-width ratio for the Irish flora divided into six

extinction risk categories (mean symbol superimposed, yellow diamond)

Regularly spaced-irregularly spaced teeth

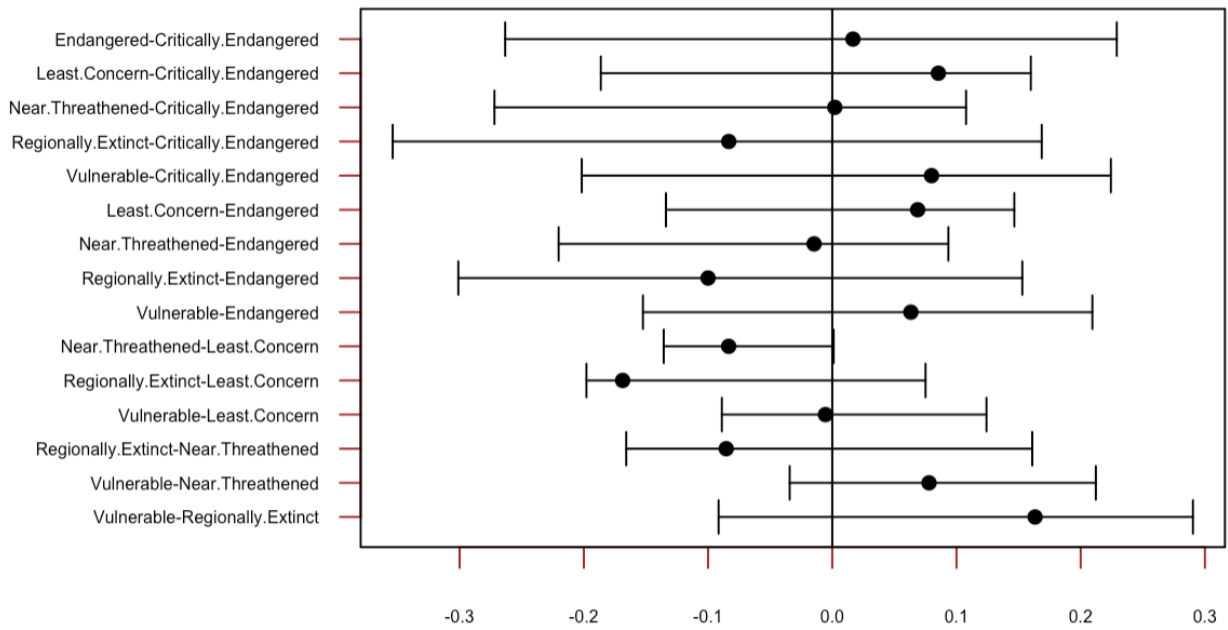95% confidence intervals for differences in proportions

Fig. S15 95% confidence intervals for the difference in proportions of regularly and irregularly spaced leaf teeth for each Red List category pair

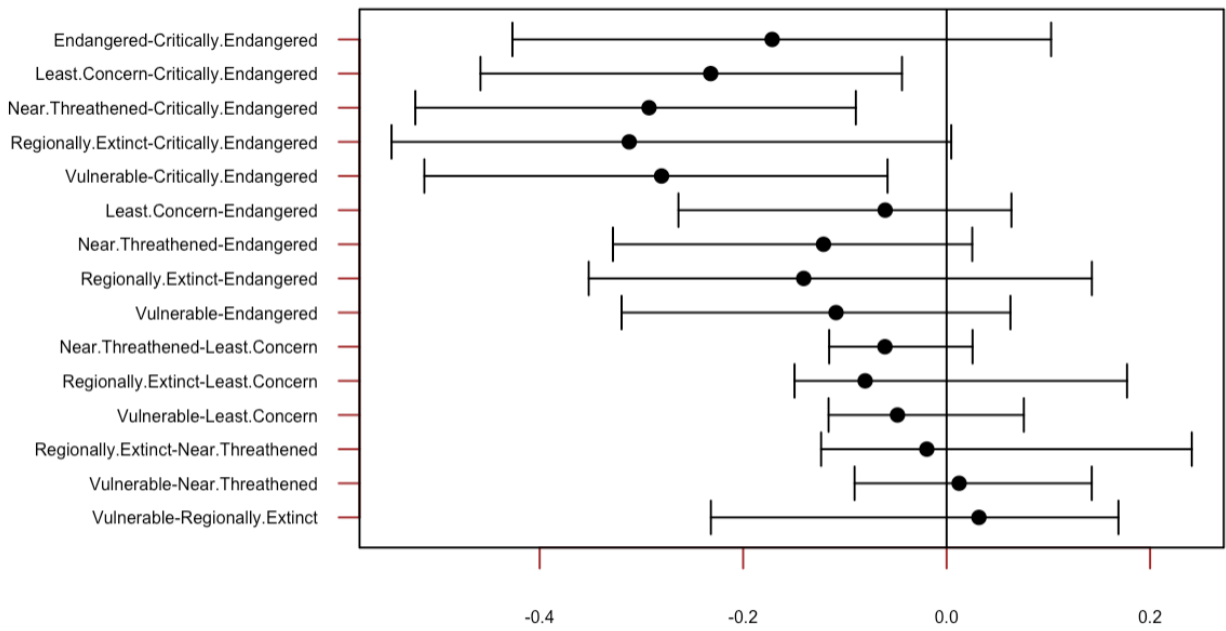**Regularly spaced-no teeth**

95% confidence intervals for differences in proportions

91

92   **Fig. S16** 95% confidence intervals for the difference in proportions of regularly spaced and

93   no leaf teeth for each Red List category pair
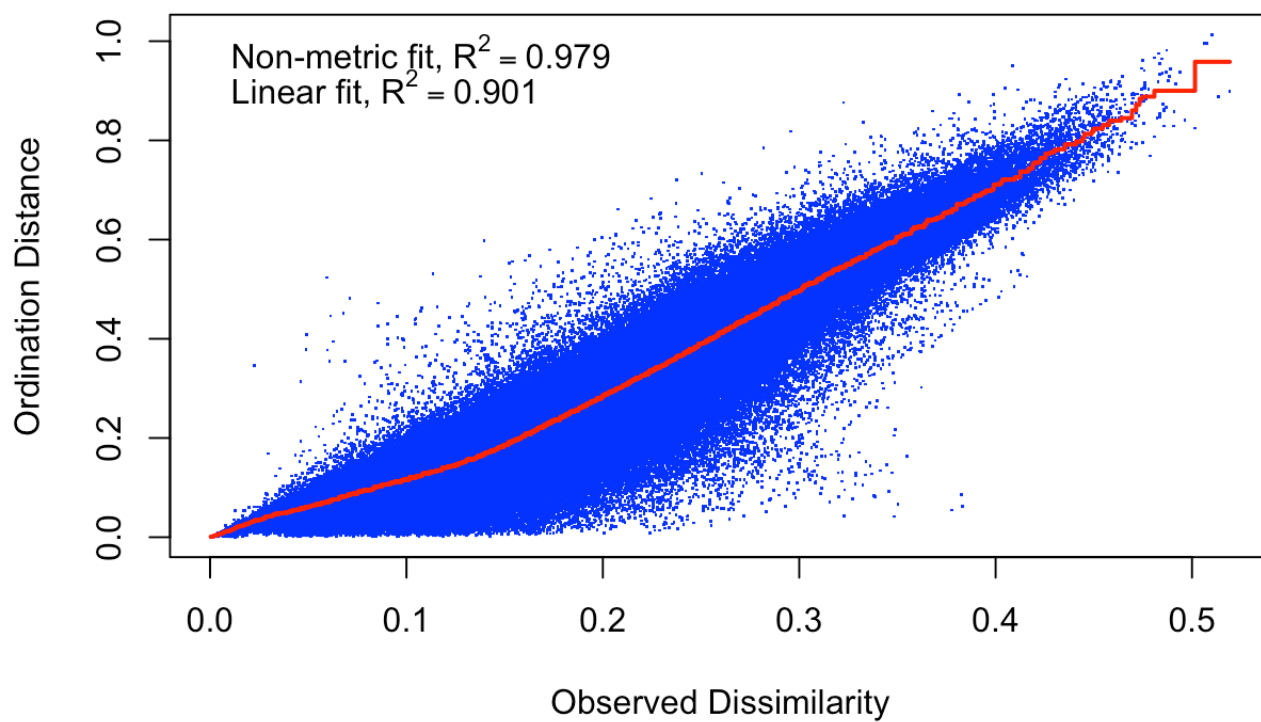
Irregularly spaced-no teeth

95% confidence intervals for differences in proportions

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95   **Fig. S17** 95% confidence intervals for the difference in proportions of irregularly spaced and

96   no leaf teeth for each Red List category pair

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The plot shows "Non-metric fit, R^2 = 0.979" and "Linear fit, R^2 = 0.901", with x-axis "Observed Dissimilarity" and y-axis "Ordination Distance".

98

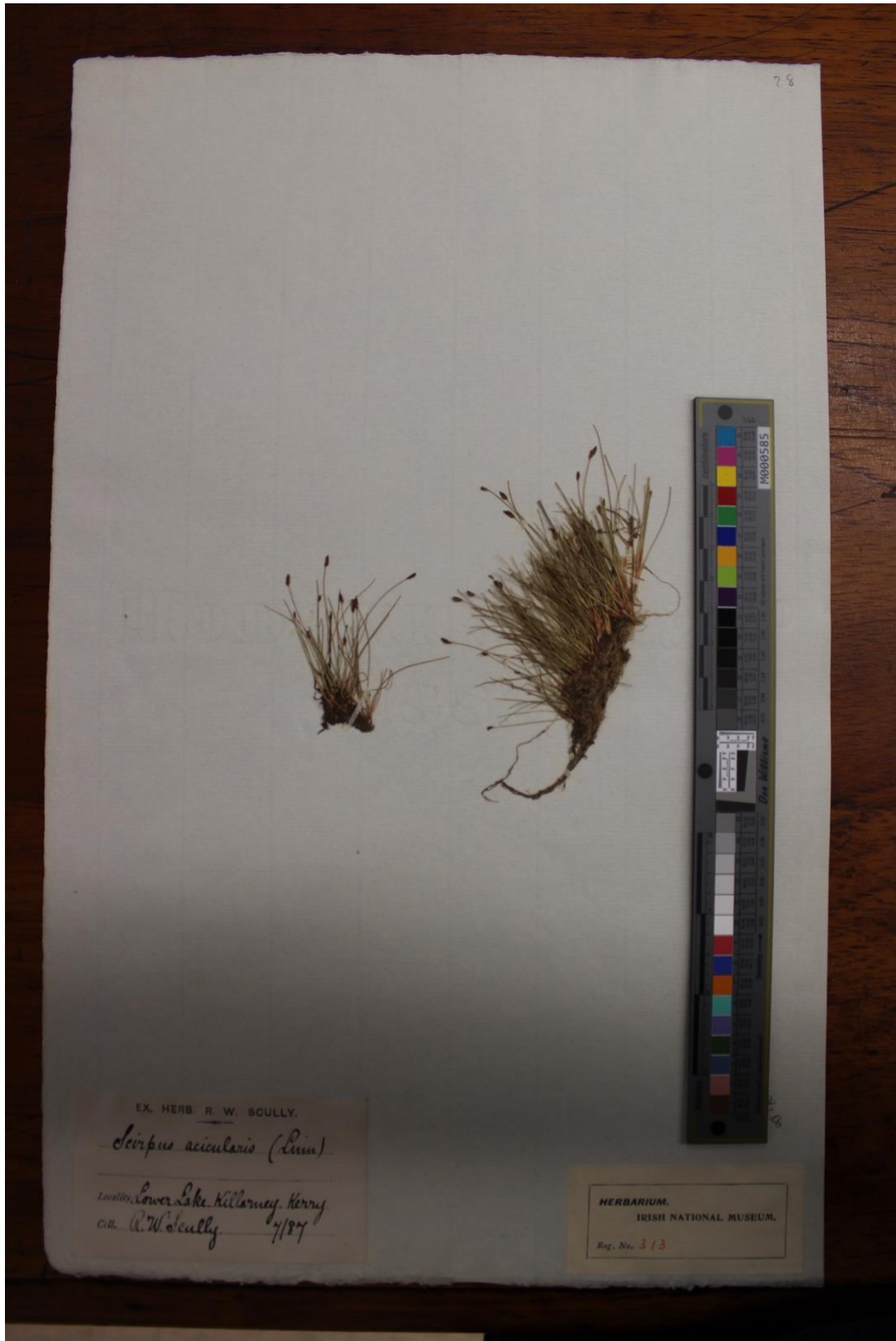99   **Fig. S18** Stressplot for the nMDS ordination of the Irish flora

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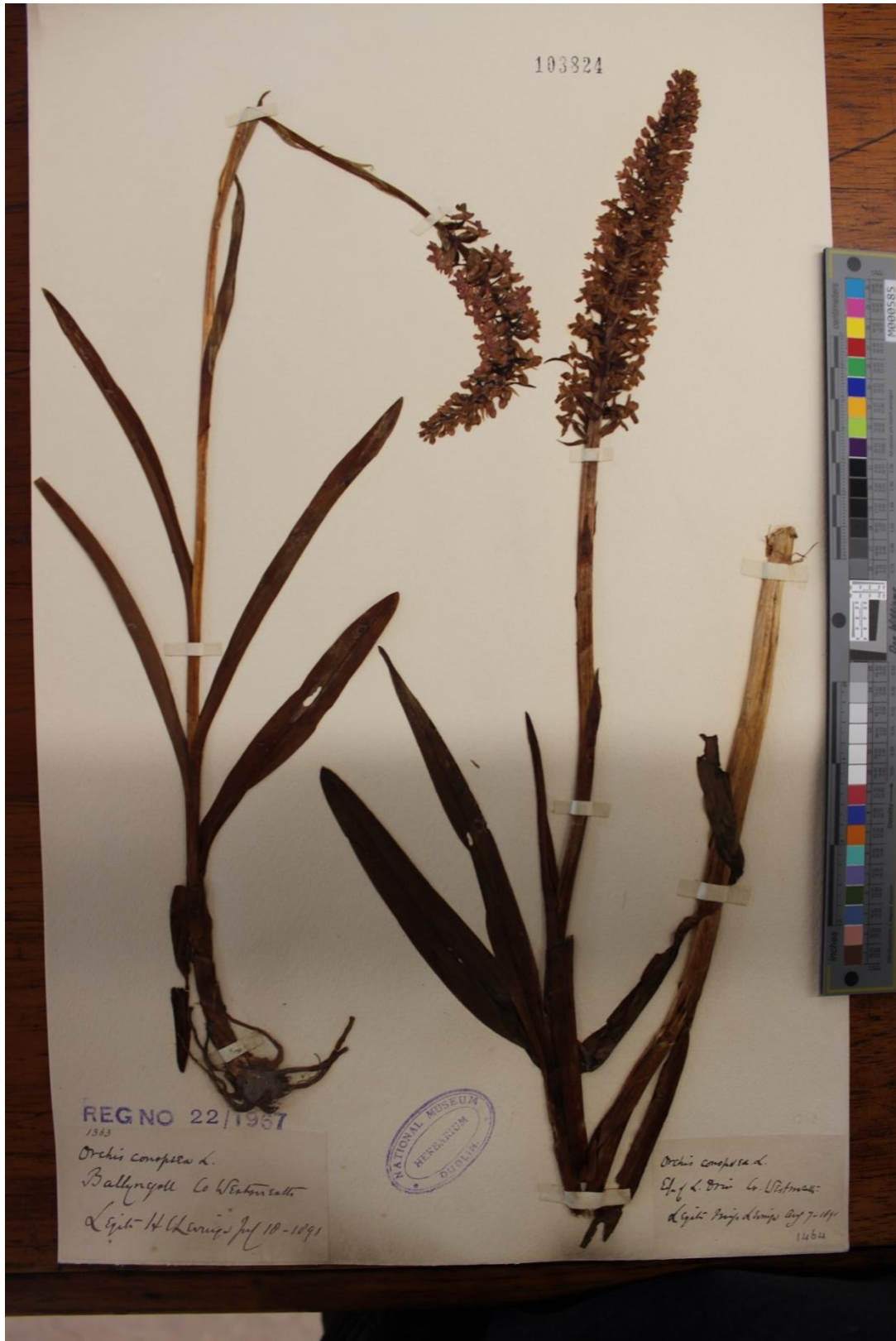102 **Fig. S19** *Carex lepidocarpa* subsp. *lepidocarpa* from the National Botanic Gardens, Glasnevin

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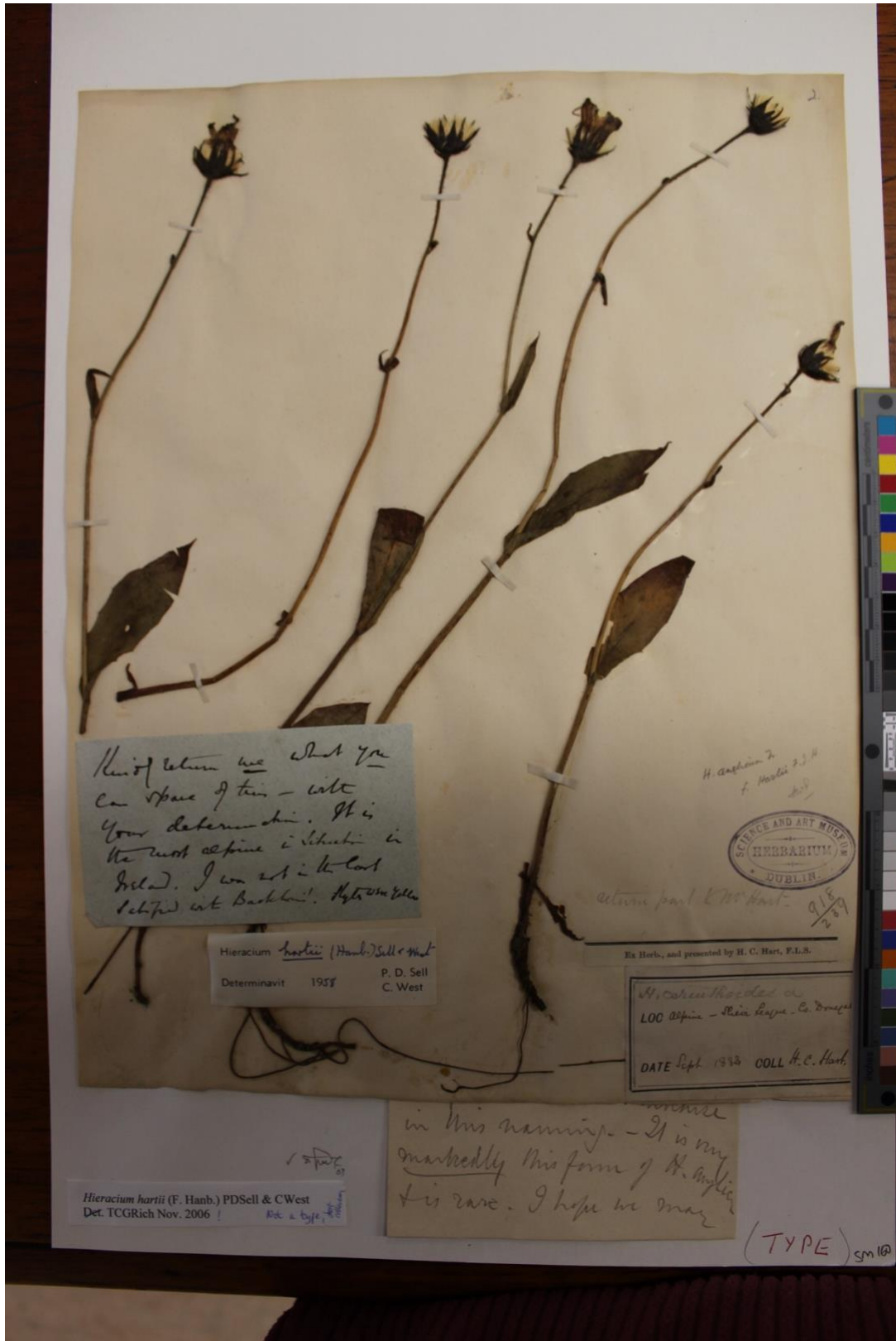**Fig. S20** *Eleocharis acicularis* from the National Botanic Gardens, Glasnevin

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107

Fig. S21 *Gymnadenia borealis* from the National Botanic Gardens, Glasnevin
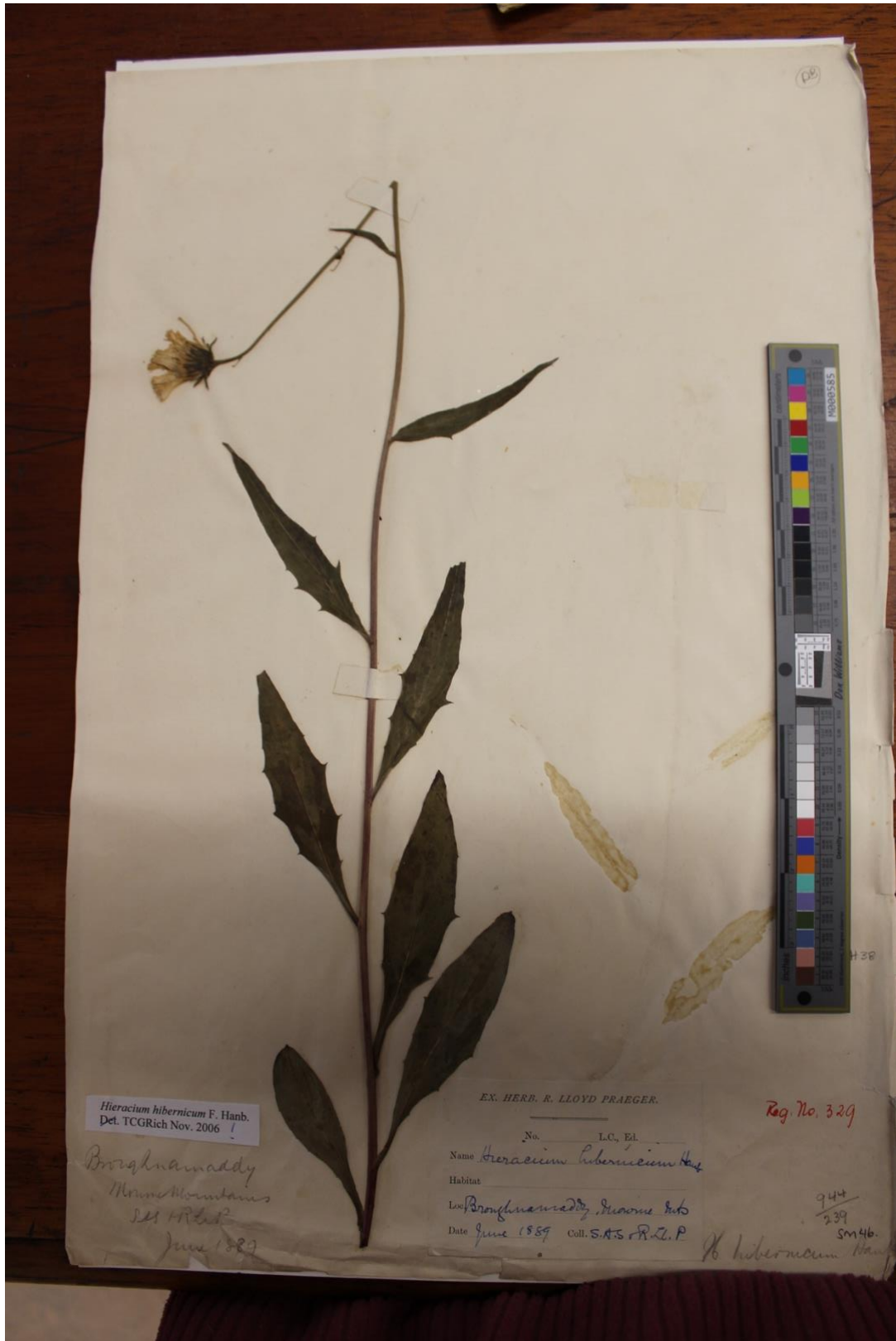
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110

Fig. S22 *Hieracium hartii* from the National Botanic Gardens, Glasnevin

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114 **Fig. S23** *Hieracium hibernicum* from the National Botanic Gardens, Glasnevin
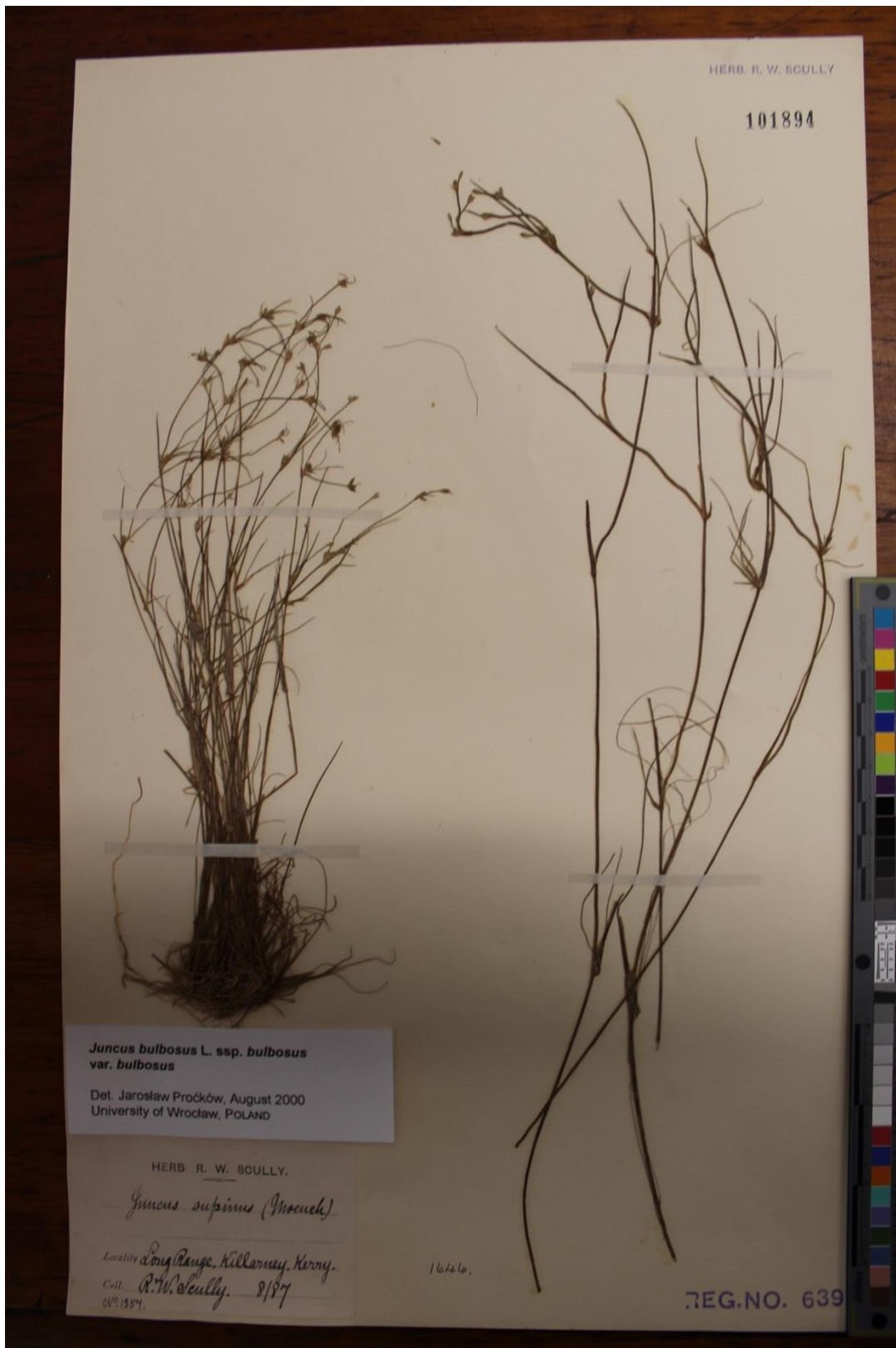
115

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Fig. S24 *Hieracium sparsifrons* from the National Botanic Gardens, Glasnevin

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120   **Fig. S25** *Juncus bulbosus* subsp. *bulbosus* from the National Botanic Gardens, Glasnevin

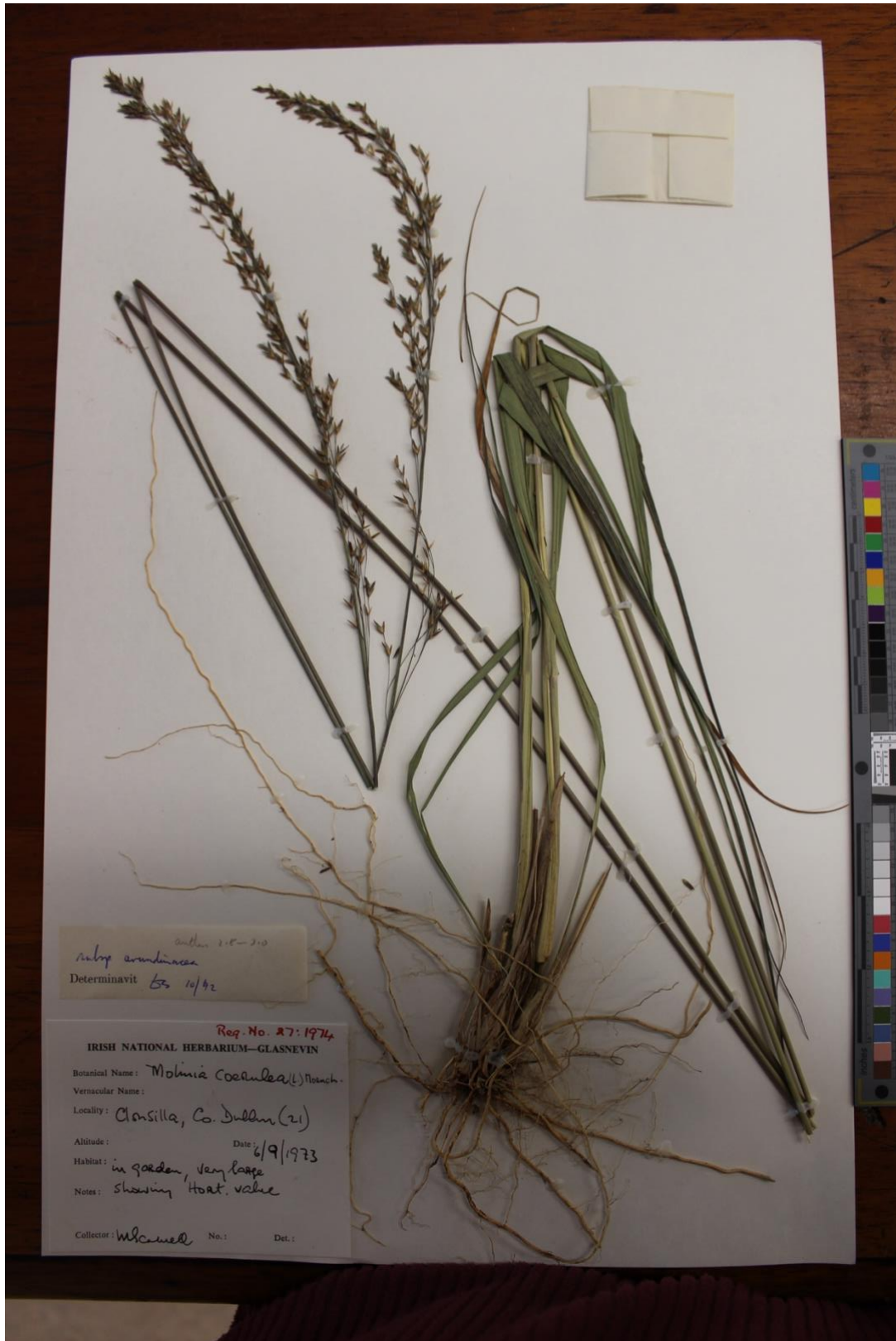121

123 **Fig. S26** *Limonium recurvum* subsp. *portlandicum* from the National Botanic Gardens,
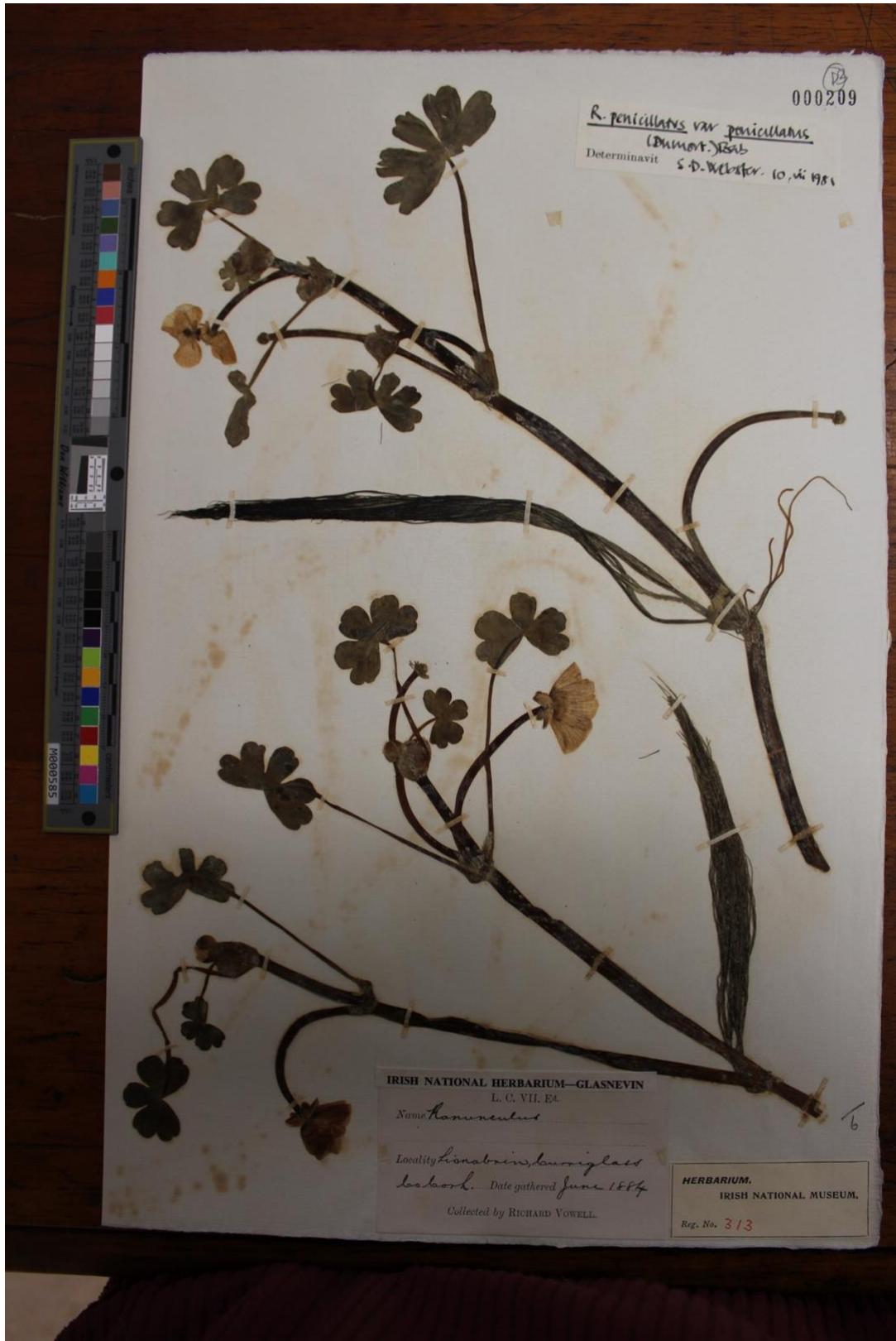
124 Glasnevin

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125

126 **Fig. S27** *Molinia caerulea* subsp. *arundinacea* from the National Botanic Gardens, Glasnevin
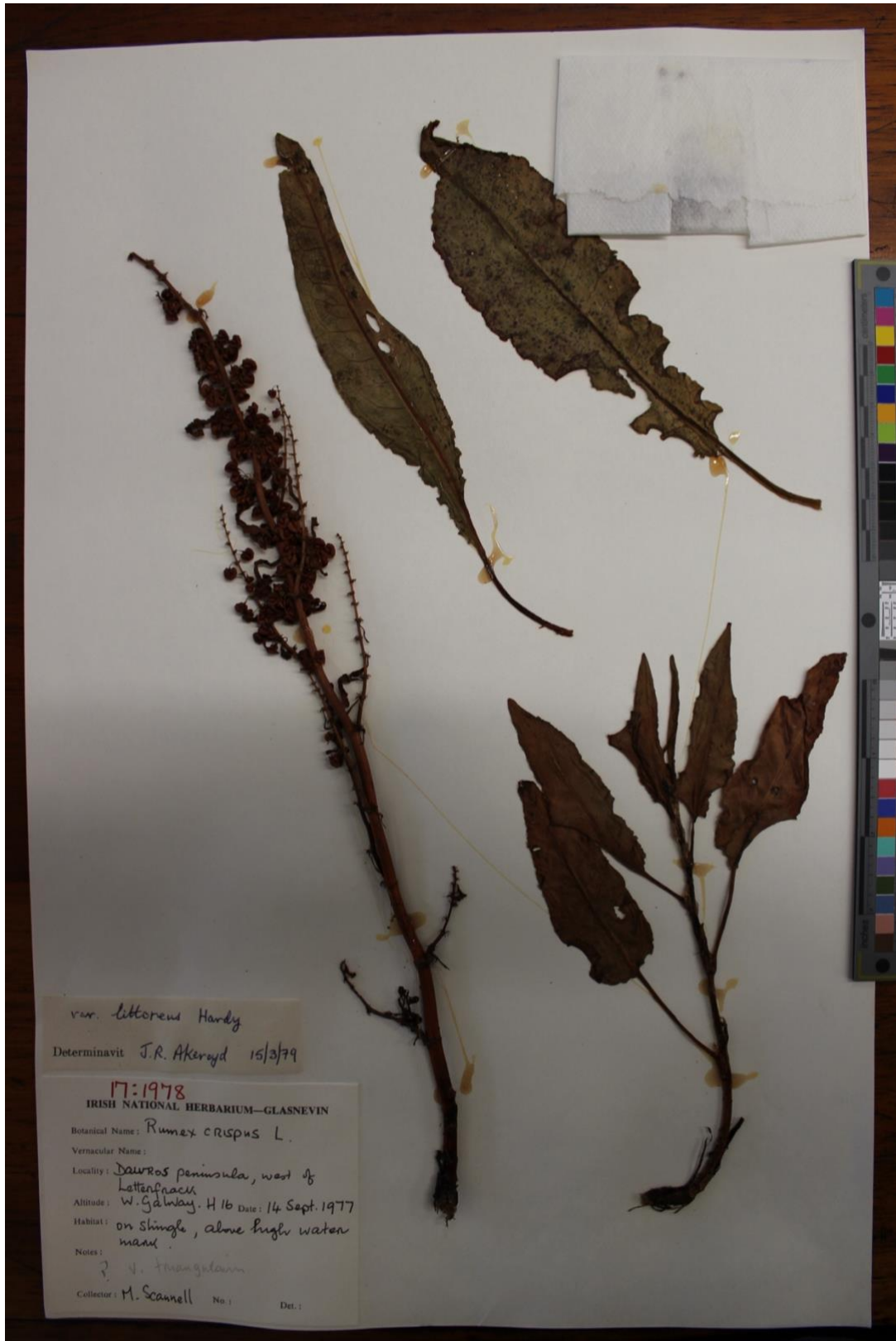
127

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Fig. S28 *Ranunculus penicillatus* subsp. *penicillatus* from the National Botanic Gardens,

Glasnevin

131

**Fig. S29** *Rumex crispus* subsp. *littoreus* from the National Botanic Gardens, Glasnevin

133

EX. HERBARIUM COLLEGII SS. TRINITATIS, DUBLIN

Rumex crispus L. var. uliginosus Le Gall

Brackish marsh community on tidal mud,
north bank of R.Shannon, across from old
part of Limerick, Co.Limerick (H9,Clare).

15.6.80   J.R.Akeroyd H171

Slender plants with small rootstocks; this
gathering probably represents 'R. elongatus
Gussone', discussed by B.S.Club contributors.

(R576575)

IRISH NATIONAL HERBARIUM—GLASNEVIN

46:1981

134

135   **Fig. S30** *Rumex crispus* subsp. *uliginosus* from the National Botanic Gardens, Glasnevin

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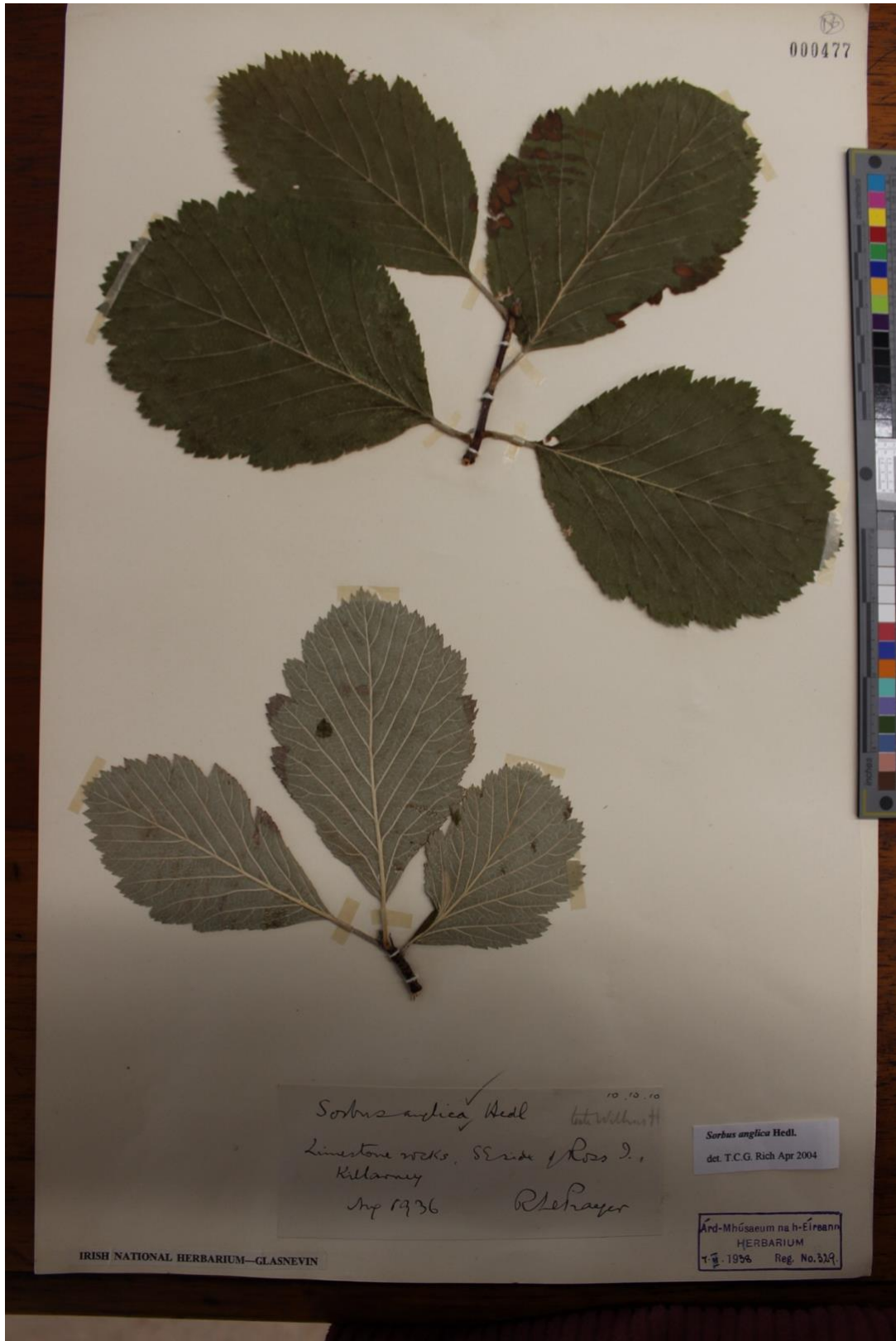
Fig. S31 *Sorbus anglica* from the National Botanic Gardens, Glasnevin

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140

141 **Fig. S32** *Sorbus scannelliana* from the National Botanic Gardens, Glasnevin