

Irish Woodrushes (*Luzula*)

Tim Rich



Jan Kirschner, world expert, who recognised *L. multiflora* subsp. *hibernica*

Luzula Woodrushes

Ireland

- *L. sylvatica*
- *L. pilosa*
- *L. campestris*
- *L. multiflora*
- *L. pallescens*

Additional British species

- *L. forsteri* and its hybrid with *L. pilosa* = *x borrieri*
- *L. spicata* – Scottish alpine
- *L. arcuata* – Scottish alpine

Introductions

- *L. nivea*
- *L. luzuloides*

These form 2 main groups:

1. Species with lax inflorescences (*sylvatica*, *pilosa*), flowers solitary or on long pedicels

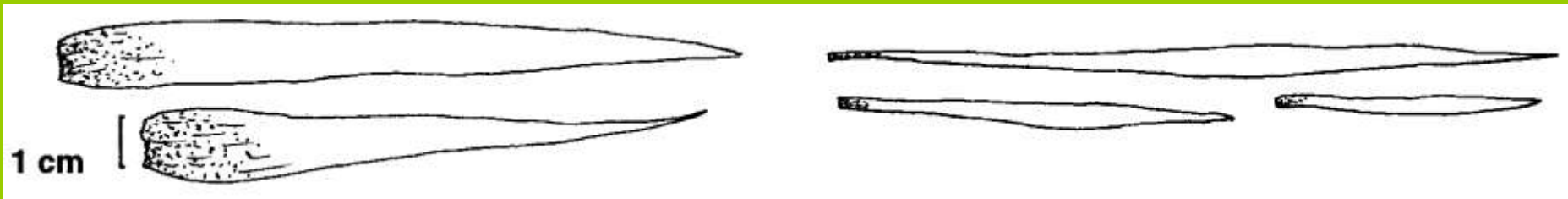


2. Species with crowded inflorescences (*campestris*, *multiflora*, *pallescens*)



Greater Woodrush *L. sylvatica*

- Large, dense patches, generally lax inflorescence
- Few problems with identification, only issue is with young plants vs *pilosa*:



Luzula sylvatica: widest at base, broadly sheathing

Luzula pilosa: widest at middle, tapering to base

Hairy Woodrush *Luzula pilosa*

- Flowers more or less solitary and inflorescence spreading in all directions, fruit like a small pear longer than tepals



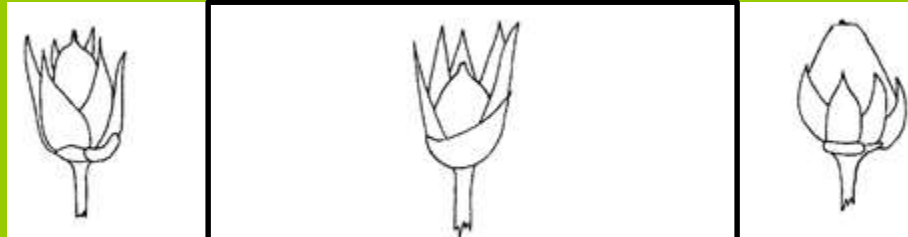
Luzula forsteri – Forster's Woodrush/Southern Woodrush

- A few records of plants being spread with nursery stock, so could occur (eg one record in Glasnevin Botanical Gardens)
- Easily distinguished from *L. pilosa* by:
 - narrow leaves
 - upright inflorescence branches
 - ovoid fruits as long as tepals



Synnott (1973) *INJ* 17:327 gave an account of a sterile plant in Ireland which was thought to be the hybrid *L. pilosa* x *forsteri* = *L. x borrieri*

- We re-examined the specimen and decided it was simply sterile *L. pilosa*



forsteri

x *borrieri*

pilosa



Luzula luzuloides – White woodrush

- Garden escape, occasionally naturalised (common and widespread in Europe)
- White perianth segments, lax inflorescence
- Very obviously different



Field woodrush *L. campestris*

- Diploid $2n=12$
- First species to flower in year, very common in grasslands
- Forms low-growing patches spreading by small rhizomes, round seeds



Luzula pallescens (*L. pallidula*) – Fen Woodrush

- Diploid $2n=12$
- Very small by comparison, peduncles papillate, small seeds (<0.6 mm), tepals markedly unequal
- 2 confirmed records for Ireland: Lough Neigh, Seagull Bog
- In Europe this is a species of dry sandy ground, tracks, etc, NOT fens

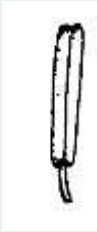
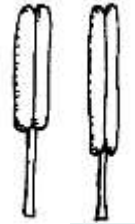

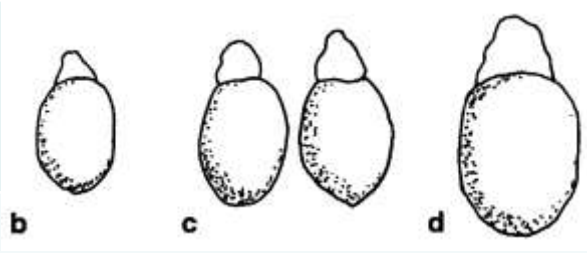


Luzula multiflora – Heath woodrush

- Later flowering than *campestris*, tufted (not patch forming)
- Ovoid seeds
- Stalked or sessile heads is NOT a character for distinguishing subspecies



Differences between *L. campestris* and *L. multiflora*:

	<i>L. campestris</i>	<i>L. multiflora</i>
Growth form	<ul style="list-style-type: none"> Patches 	<ul style="list-style-type: none"> Tufts
Inflorescence	<ul style="list-style-type: none"> Pedunculate, often some recurved 	<ul style="list-style-type: none"> Pedunculate or sessile, straight
Stamens	<ul style="list-style-type: none"> Anthers 3x filaments 	<ul style="list-style-type: none"> Anthers <2.5 x filaments 
Seeds	<ul style="list-style-type: none"> More or less round 	<ul style="list-style-type: none"> More or less ovoid 

Luzula multiflora: 6+ subspecies of which 2 in Ireland (as far as we know)

- Complex history of autopoloidy, allopoloidy and agmatopoloidy (chromosome fragmentation) resulting in series of taxa which are clear genetically but overlap in quantitative morphology.
- Ecotypic variation and phenotypic plasticity also give problems with identification

Subsp. hibernica

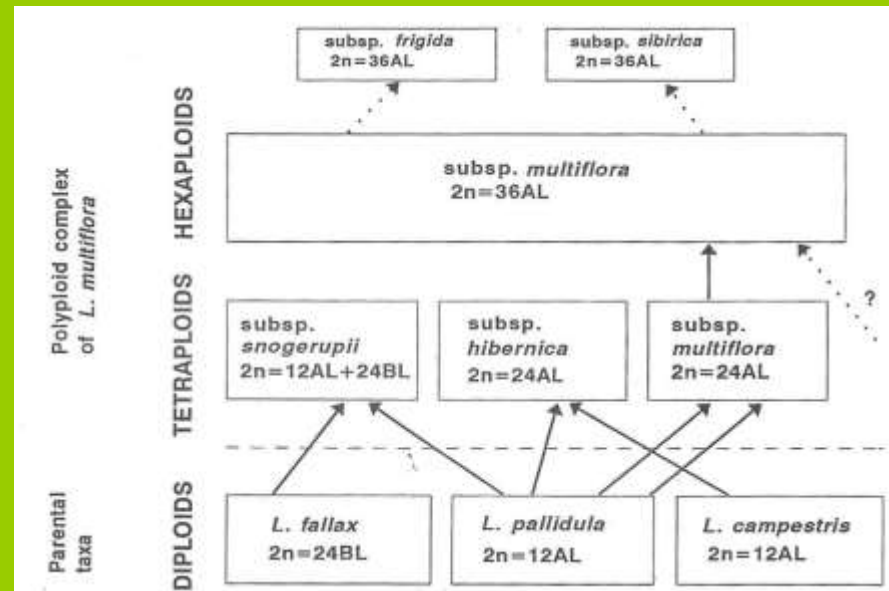
- Tetraploid, derived from *campestris* x *pallescens*
- Irish endemic (though possible plants from W Britain now known - require study)
- Kirschner, J. & Rich, T. C. G. (1996). *Watsonia* **21**: 89-97.

[Subsp. multiflora

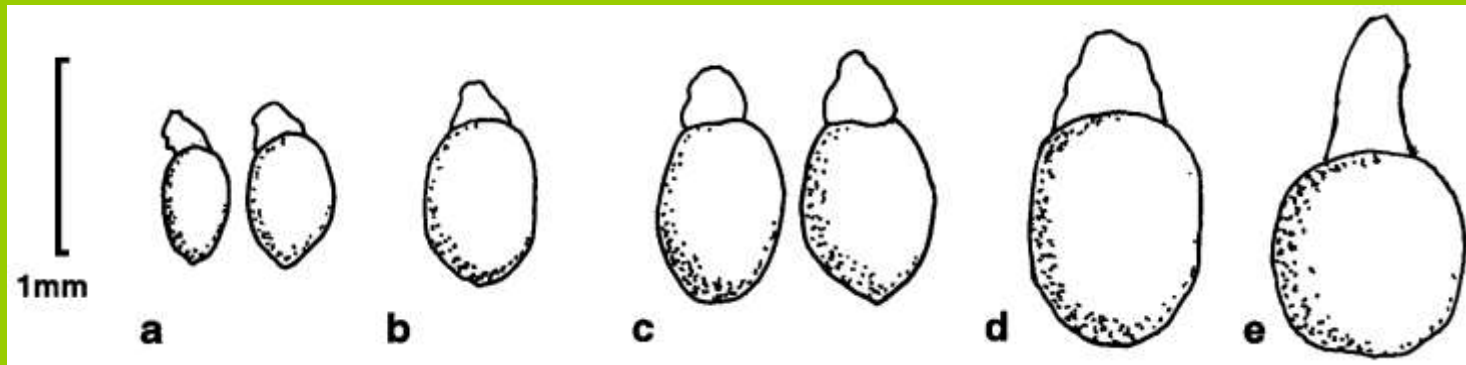
- Hexaploid, derived from *L. pallescens*
- Not in Ireland as far as known?]

Subsp. congesta

- Octoploid, derived from *L. pallescens*



	Subsp. <i>hibernica</i>	Subsp. <i>congesta</i>
Seeds	0.8-0.9 mm long	1.2-1.5 mm long
Inflorescence	Pedunculate	Pedunculate or sessile
Leaf width	2.2-3.0(-3.5) mm	3.0-6.0 mm
Perianth segments	2.6-3.2 mm	2.8-3.8 mm



Seeds. (a) *Luzula pallidula*, (b) *L. multiflora* subsp. *hibernica*, (c) *L. multiflora* subsp. *multiflora*, (d) *L. congesta*, (e) *L. campestris*.

- Further work is needed using modern DNA methods; screening with flow cytometry would enable more targeted investigations
- Further details in *Plant Crib 1998*