

LUZULA

Description: Perennial grass-like herbs. **Culms** terete. **Leaves** basal or occasionally 1 or 2 cauline, flat or channelled; margins moderately to densely white-villous, mostly minutely papillose, sometimes nearly glabrous except for fringe of long white hairs near base of blade; auricles absent. Lowest 1-4 involucre bracts leaf-like. **Flowers** bisexual, clustered + densely, each with 1 papery bract and 2 papery bracteoles. **Tepals** subequal in length. Stamens 6[--3]. Ovary 1-locular. **Capsule** smooth, or minutely papillose near apex, shining; **seeds** 3, with a white basal, + fleshy outgrowth (caruncle).

Distribution and occurrence: World: c. 80 species, mainly extra-tropical regions. Australia: 15 species (12 species endemic), all States except N.T.

Key to the genus <i>Luzula</i>		
1	Inflorescence of several obviously pedunculate flower clusters or with only shortly pedunculate clusters	2
	Inflorescence a single ovate or globose head, or an oblong head with a few sessile lower clusters	8
2	Anthers 0.7–1.6 mm long	3
	Anthers 0.2–0.6 mm long	6
3	Shoots with more or less bulbous base; peduncles to 6 cm long; tepals either pale red-brown with more or less broad creamy to hyaline margins or red-brown to dark brown, without conspicuously paler margins	4
	Shoots without bulbous base; peduncles to 3 cm long; tepals red-brown to dark brown with a narrow but conspicuous, or broad, hyaline to creamy margin	5
4	Tepals red-brown to dark brown, without conspicuously paler margins; flowers 2.6–3.5 mm long	<i>Luzula meridionalis</i> ACT, ST
	Tepals pale red-brown, with more or less broad creamy to hyaline margins; flowers usually 1.6–2.5 mm long	<i>Luzula densiflora</i> ACT, ST
5	Leaves moderately hairy; mature capsule usually pale yellow-brown (rarely red-brown at apex)	<i>Luzula flaccida</i> ACT, ST
	Leaves almost glabrous except near base; mature capsule usually dark red-brown	<i>Luzula novae-cambriae</i> ACT, ST
6	Shoots without bulbous bases; mature capsule usually pale yellow-brown, rarely red-brown near apex	<i>Luzula flaccida</i> ACT, ST
	Shoots with mostly bulbous bases; mature capsule red-brown or purple-brown throughout or red-brown above	7
7	Tepals all acuminate; mature capsule red-brown or purple-brown throughout; inflorescence of a central cluster with 2 or 3 smaller lateral clusters	<i>Luzula ovata</i> ACT, ST
	Outer tepals acuminate, inner acute; mature capsule red-brown above and yellow-brown below, rarely red-brown throughout; inflorescence of more than 3 clusters	<i>Luzula densiflora</i> ACT, ST

8	Inflorescence red-brown or creamy brown; tepals with conspicuous pale brown or creamy to white membranous margins	9
	Inflorescence blackish; tepals without conspicuous paler margins	14
9	Plants long-rhizomatous; inflorescence oblong in outline	<i>Luzula modesta</i> ACT, ST
	Plants more or less tufted; inflorescence ovate or circular in outline	10
10	Leaves more or less channelled; caruncle a tenth to an eighth the length of seed	11
	Leaves flat; caruncle a third to a quarter the length of seed	12
11	Leaves 3–5 mm wide; anthers 1.1–1.5 mm long	<i>Luzula australasica</i> ACT, ST
	Leaves 1–2 mm wide; anthers 0.4–0.6 mm long	<i>Luzula alpestris</i> ACT, ST
12	Shoots without bulbous bases; mature capsule usually pale yellow-brown (rarely reddish at apex)	<i>Luzula flaccida</i> ACT, ST
	Shoots with mostly bulbous bases; mature capsule red-brown or purple-brown throughout, or red-brown above	13
13	Tepals all acuminate; mature capsule red-brown or purple-brown throughout	<i>Luzula ovata</i> ACT, ST
	Outer tepals acuminate, inner acute; mature capsule red-brown above and yellow-brown below, rarely red-brown throughout	<i>Luzula densiflora</i> ACT, ST
14	Slender tufted plants; flowering culms usually more than 10 cm long; leaf apex obtuse	<i>Luzula atrata</i> ST
	Dwarf mat-forming plants; flowering culms less than 8 cm long; leaf apex acute	<i>Luzula acutifolia</i> ST

Luzula acutifolia subsp. *nana*

Description: Low, shortly rhizomatous plants forming mats or extensive swards. Leaves 1-4 mm wide, channelled towards apex, broader and flatter below, may persist at base of plant; margins not thickened, almost glabrous, papillose or smooth; apex acute. Culms 3-8 cm long, equalling or slightly exceeding leaves. Inflorescence a single ovate to oblong cluster c. 0.7-1 cm long, c. 0.7 cm diam. Leafy bracts 1 or 2; apex acute. Flowers 2.0-2.7 mm long. Tepals acuminate, dark brown to blackish, with very narrow pale brown hyaline margins. Anthers 0.6-1.2 mm long. Capsule +/- equalling tepals, red-brown to dark brown, smooth; seeds 1-1.5 mm long; caruncle about one eighth to one seventh the length of the seed.

Flowering: summer.

Distribution and occurrence: Grows in alpine herbfields in the Kosciusko area. NSW subdivisions: ST

Luzula alpestris

Description: Small perennial with dense stiff short tufts. Leaves 1.0-2.0 mm wide, stiff, +/- channelled; margins thickened, moderately hairy above, with longer hairs near base of blade, papillose; apex obtuse. Culms 7-15 (rarely to 20) cm long, 0.5-1.1 mm diam., much exceeding leaves. Inflorescence a single head, ovate or sometimes oblong, 0.7-1 cm long, to 1.5 cm diam.

Leafy bracts 2-4, obtuse or acute. Flowers 1.9-2.4 mm long. Outer tepals shortly acuminate, inner acute, pale brown to red-brown with broad whitish hyaline margins. Anthers 0.4-0.6 mm long. Capsule slightly shorter than or equalling tepals, red-brown to dark brown, papillose near apex; seeds c. 1 mm long; caruncle about an eighth the length of seed.

Flowering: summer.

Distribution and occurrence: Grows in alpine and subalpine tussock grassland and herbfields; south from the Kosciusko area. NSW subdivisions: ST

***Luzula atrata*, Slender Woodrush**

Description: Small perennial with slender, loosely tufts on rhizome. Leaves 1-3 mm wide, channelled; margins +/- thickened, scarcely hairy above, with hairs denser below, papillose; apex obtuse. Culms 14-25 cm long (rarely shorter), 0.5-1 mm diam., much exceeding leaves. Inflorescence a single round cluster c. 0.7-1 cm diam. Leafy bracts 1 or 2; apex acute to obtuse. Flowers 2.2-2.8 mm long. Tepals acuminate, dark brown to blackish with very narrow membranous margins. Anthers 0.4-0.8 mm long. Capsule +/- equalling tepals, dark brown to blackish, papillose towards apex; seeds 1.2-1.4 mm long; caruncle about a sixth the length of seed.

Flowering: summer.

Distribution and occurrence: Grows in wet margins of alpine and subalpine bogs; south from the Kosciusko area. NSW subdivisions: ST. Other Australian states: Vic. Tas.

Luzula australasica* subsp. *dura

Description: Small perennial with coarse tufts, usually with persistent leaf remains at base. Leaves 3.0-7.5 mm wide, stiff, channelled; margins thickened, sparsely hairy, not papillose; apex obtuse. Culms 10-35 cm long, 0.9-1.8 mm diam., elongating in fruit to twice the leaf-length. Inflorescence a single round or ovate head of numerous sessile clusters 1-2 cm diam. Leafy bracts 2 or 3; apex obtuse. Flowers 2.4-3.5 mm long. Tepals acute, red-brown to dark brown with broad white hyaline margins and often with hyaline apex. Anthers 1.1-1.5 mm long. Capsule obviously shorter than tepals, yellow-brown to red-brown or occasionally very dark brown, smooth; seeds 1.1-1.5 mm long; caruncle a tenth to an eighth the length of seed.

Flowering: summer.

Distribution and occurrence: Kosciusko area - may be endemic, or may also occur in Victoria. Grows on exposed rocky alpine sites. NSW subdivisions: ST

NB Census of Plants of the Australian Capital Territory lists *L. australasica* x *L. novae-cambria*

Luzula densiflora

Description: Small perennial with scattered, often few-leaved, but rather robust tufts, +/- bulbous at base. Leaves 1.5-4.0 (rarely to 5.0) mm wide, flat, rather stiff; margins densely hairy, or sometimes only moderately hairy and marginal papillae obvious; apex obtuse. Culms 11-50 cm long, 0.3-1.4 mm diam., much exceeding leaves, usually with 1 or 2 very broad cauline leaves. Inflorescence of several ovoid clusters c. 5 (occasionally 10) mm diam., central cluster sessile, other clusters on peduncles to 4 cm long, or sometimes reduced to a single head. Leafy bracts 1 or 2; apex subulate to acute or obtuse. Flowers 1.6-2.5 (rarely to 3.0) mm long. Outer tepals acuminate, inner acute, pale red-brown with +/- broad creamy or hyaline margins. Anthers 0.3-0.7 mm long. Capsule equalling or slightly shorter than tepals, red-brown above, yellow-brown below, rarely red-brown throughout, smooth or papillose at apex; seeds c. 1 mm long; caruncle about a third the length of seed.

Flowering: spring-summer.

Distribution and occurrence: Grows in moist rather shady sites, often on clay, in eucalypt woodland or open grassland; south from CT. NSW subdivisions: CT, ST, SWS, CWS. Other Australian states: Vic. Tas.

***Luzula flaccida* subsp. Long Anther (KL Wilson 828 et al)**

Synonyms: *Luzula flaccida* f. *a - long anther form* (Buchenau) Edgar, *Luzula flaccida* (Buchenau) Edgar form A, *Luzula meridionalis* var. *flaccida* (Buchenau) Nordensk.

Description: Small perennial with loose tufts. Leaves 2.5–6 mm wide, flat. Inflorescence of several branches up to 3 cm long bearing clusters c. 5 mm diam., with flowers 2.5–3.8 mm long; tepals red-brown or dark brown, with margin broad and cream-coloured or hyaline; anthers 0.7–1.5 mm long. Caruncle about 1/3 the length of the seed.

Distribution and occurrence: Occurs south from Woodburn and Walcha, more common on the tablelands. North Coast, South Coast, Northern, Central and Southern Tablelands, North, Central and South Western slopes; also Victoria and Tasmania. Grows in moist grassy understorey in Eucalypt woodland. NSW subdivisions: NC, SC, NT, CT, ST, NWS, CWS, SWS. Other Australian states: Vic. Tas.

Luzula flaccida subsp. *flaccida*

Synonyms: *Luzula flaccida* (Buchenau) Edgar form B

Description: Small perennial with loose tufts. Leaves 2.5–6 mm wide, flat. Inflorescence of few branches up to 2 cm long bearing clusters c. 10 mm diam. or sometimes reduced to a single head, with flowers 2–3 mm long; tepals pale red-brown, with margin very broad and creamy hyaline or almost entirely cream-coloured; anthers 0.3–0.6 mm long. Caruncle about one quarter the length of the seed.

Distribution and occurrence: Occurs in North, Central and South Coast, Northern, Central and Southern Tablelands, North, Central and South Western Slopes; also Queensland, Victoria, Tasmania and South Australia. Grows in grassy margins of wet sclerophyll forest, from sea level to 1550 m altitude, also in disturbed sites such as road banks. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS, CWS, SWS. Other Australian states: Qld Vic. Tas. S.A.

Luzula meridionalis

Description: Small perennial with slender, rather flaccid tufts, bulbous at base. Leaves 1-5 mm wide, flat, soft; margins either densely hairy or hairs scattered, papillae not obvious; apex obtuse. Culms usually 18-30 cm long, 0.5-1.5 mm diam., exceeding leaves. Inflorescence of several ovoid to globular clusters c. 5-8 mm diam., the central cluster sessile with up to 9 lateral clusters on peduncles to 6 cm long. Leafy bracts 1 or 2; apex of lowest bract obtuse, upper occasionally acute. Flowers 2.6-3.5 mm long. Outer tepals acuminate, inner apiculate, red-brown to dark brown and without conspicuously paler margins, rarely pale brown with broad hyaline to pale cream-coloured margins. Anthers 0.7-1.6 mm long. Capsule equalling or slightly shorter than tepals, pale yellow-brown to red-brown, papillose at apex; seeds 1-2 mm long; caruncle usually a third but up to a half the length of seed.

Flowering: spring-summer.

Distribution and occurrence: Grows in open forest or grassland; south from the Nandewar Range. NSW subdivisions: NT, CT, ST, NWS, CWS, SWS. Other Australian states: Vic. Tas. W.A. S.A.

Luzula modesta

Description: Small perennial with tallish tufts from extensive rhizomes 1-3 mm diam., often with fibrous leaf remains at base. Leaves 2-7 mm wide, rather flaccid, +/- flat; margins papillose, sparsely hairy; apex obtuse. Culms 18-50 cm long, 0.5-1.4 mm diam., much exceeding leaves. Inflorescence 1-3 cm long, of 1-4 sessile clusters, oblong or ovate in outline. Leafy bracts 1-3; apex obtuse. Flowers 2.0-3.0 mm long. Outer tepals acuminate, inner acute, pale brown to red-brown with broad white to hyaline margins. Anthers 0.5-0.9 mm long. Capsule usually shorter than tepals (sometimes equalling them), red-brown or occasionally pale brown, papillose near apex; seeds 1.1-1.5 mm long; caruncle a quarter to a third the length of seed.

Flowering: spring-summer.

Distribution and occurrence: Grows in alpine and subalpine bogs; south from Barrington Tops. NSW subdivisions: NT, CT, ST. Other Australian states: Vic. Tas.

Luzula novae-cambriae

Description: Small perennial, with coarse tufts, often with persistent fibrous leaf remains at base, usually shortly rhizomatous. Leaves 2-6 mm wide, flat, rather soft; margins very sparsely hairy except for dense fringe near base, with or without marginal papillae; apex obtuse. Culms 12-30 cm long, 0.5-1.4 mm diam., slightly exceeding leaves, elongating in fruit up to twice the leaf length. Inflorescence of several clusters 0.5-1 cm diam., on short peduncles to 2 cm long (often drooping in fruit). Leafy bracts 1 or 2; apex obtuse. Flowers 2.5-3.2 mm long. Tepals acute, red-brown to dark brown with whitish membranous margins (often narrow but conspicuous). Anthers 0.7-1.3 mm long. Capsule slightly shorter than or equalling tepals, usually dark red-brown, papillose near apex or smooth; seeds 1.2-1.8 mm long; caruncle fifth the length of seed.

Flowering: summer.

Distribution and occurrence: Grows in alpine and subalpine herbfields, grassy slopes, and Snow Gum woodland; south from the Kosciusko area. NSW subdivisions: ST. Other Australian states: Vic. Tas.

NB Census of Plants of the Australian Capital Territory lists *L. australasica* x *L. novae-cambria*

Luzula ovata

Description: Small perennial with slender tufts, often subbulbous at base and with fibrous leaf remains. Leaves 1.5-4 mm wide, much shorter than culms, rather flaccid, +/- flat; margins moderately to densely hairy, papillose or smooth; apex obtuse. Culms 10-35 cm long, 0.5-1.0 mm diam., much exceeding leaves, often reddish. Inflorescence a single ovate cluster, 1-1.5 cm long, or a central cluster with 2 or 3 clusters on peduncles c. 10 mm long. Leafy bracts 2 or 3, obtuse to acute. Flowers 1.8-2.6 mm long. Tepals acuminate, membranous, pale red-brown with very broad creamy to whitish margins. Anthers 0.2-0.6 mm long. Capsule +/- equalling tepals, ruby red or ox-blood red, smooth or sometime papillose at apex; seeds 1-1.3 mm long; caruncle about a quarter the length of seed.

Flowering: spring-summer.

Distribution and occurrence: Grows in swamps at higher altitudes; south from Bundarra district. NSW subdivisions: NT, CT, ST. Other Australian states: Vic.