

Draft Key to the Grasses of Okanogan County, Washington

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This dichotomous key is designed to aid in the identification of grasses occurring in Okanogan County, Washington.

The following artificial key incorporates aspects of several other grass keys. Due to the limited number of representative genera in some of the tribes in Okanogan County, particularly the non-poid genera, it was possible to organize the key into related groups in a simpler fashion than technical keys for larger areas. This has the advantage of grouping related plants close together, where detailed characteristics play a more important role, but the use of the key is thus restricted to Okanogan County. Names used are those of Hitchcock and Cronquist's, 1973 Flora of the Pacific Northwest (UW Press). The number of each genus refers to the accompanying listing of genera at the end of the key. Quotations enclose tribes or subfamilies of the "old" classification system of A. S. Hitchcock & Agnes Chase. Additions or corrections to this key are welcome.

Notes: mm = millimeter; cm = centimeter.

- 1a..** Spikelets 1-flowered (technically 2-flowered, the lower flower in each spikelet imperfect); spikelets flattened from the back; pedicels jointed just below the spikelets. **Panicoideae** (natural subfamily) ... **Lead 2.**
- 2a..** Spikelets in pairs, one sessile and perfect, the other stalked and staminate, or empty, or reduced to a mere stalk; glumes indurate; fertile lemma & palea hyaline or membranaceous, the sterile lemma like the fertile one in texture. **Andropogoneae: 1. Sorghum.**
- 2b..** Spikelets single; glumes membranaceous; the sterile lemma like the glumes in texture. **Paniceae, Lead 3.**
- 3a..** Spikelets aggregated into spiny burs that are shed as units; plant annual; culms solid; ligules composed mainly of hairs **2. Cenchrus.**
- 3b..** Spikelets not aggregated into spiny burs; plants various ... **Lead 4.**
- 4a..** Ligule lacking ... **4. Echinochloa.**
- 4b..** Ligule present ... **Lead 5.**
- 5a..** Spikelets in spikelike racemes confined to 1 side of the rachis ... **3. Digitaria.**
- 5b..** Spikelets in an open or contracted panicle, not confined to one side of the rachis ... **Lead 6.**
- 6a..** Spikelets sessile in an erect panicle, subtended and generally exceeded by many sterile bristles ... **6. Setaria.**
- 6b..** Spikelets pedicellate in an open panicle, not subtended by bristles ... **5. Panicum.**
- 1b..** Spikelets 1- to many-flowered, more or less flattened from the side ... "**Festucoideae**" (now subdivided into several subfamilies) **Lead 7.**
- 7a..** Plants woody, culms perennial, the broad flat leaves with a short petiole ... **Bambusoideae** (no genera).
- 7b..** Plants herbaceous, culms annual ... **Lead 8.**
- 8a..** Plants of wet places; glumes none; ligule membranous; disarticulation at the base of the spikelet ... **Oryzoideae: Oryzae: 7. Leersia.**
- 8b..** Plants with glumes; plants various; habitats various ... **Lead 9.**
- 9a..** Spikelets 3-flowered, the uppermost floret in each spikelet perfect, the lower staminate or sterile ... "**Phalarideae**" (now part of the **Pooideae: Aveneae**), **Lead 10.**
- 10a..** Lemmas awned on the back; glumes unequal ... **19. Anthoxanthum.**
- 10b..** Lemmas not awned; glumes equal ... **Lead 11.**
- 11a..** Inflorescence a dense panicle; sterile lemmas linear, much shorter than the glumes of the fertile lemma ... **28. Phalaris.**
- 11b..** Inflorescence an open panicle; sterile lemmas about as long as the glumes, exceeding the fertile lemma ... **25. Hierochloa.**
- 9b..** Spikelets 1- to many-flowered; no imperfect flowers below the perfect ones ... **Lead 12.**
- 12a..** Spikelets in 1-sided spikes or sessile on opposite sides of a zigzag rachis ... **Lead 13.**
- 13a..** Spikelets in 1-sided spikes ... "**Chlorideae**" (pars, including one species now in the **Pooideae**), **Lead 14.**
- 14a..** Glumes very broad, folded, the two together nearly circular in outline ... **Pooideae: Aveneae: 21. Beckmannia.**
- 14b..** Glumes subulate to lanceolate, unequal ... **Chloridoideae: Chlorideae: 13. Spartina.**

- 13b..** Spikelets or groups of spikelets in two rows on opposite sides of a zigzag rachis ... **Pooideae: Triticeae** ("**Hordeae**", including *Lolium*, now in the **Poeae**), **Lead 15.**
- 15a..** Spikelets 3 at each joint of the rachis, the lateral pair (except in cultivated barley) pedicellate, reduced and sterile, the central spikelet 1-flowered or rarely with a much smaller second lemma ... **44. Hordeum.**
- 15b..** Spikelets less than 3 at each joint of the rachis ... **Lead 16.**
- 16a..** Spikelets 2 at each joint of the rachis, alike, 2- to 6-flowered ... **Lead 17.**
- 17a..** Spikelets soon disarticulating at each node ... **46. Sitanion.**
- 17b..** Spikelets continuous, not disarticulating ... **43. Elymus.**
- 16b..** Spikelets solitary at each joint of the rachis ... **Lead 18.**
- 18a..** Glumes and lemmas eccentrically keeled, the keel much nearer the adaxial margin; annuals ... **Lead 19.**
- 19a..** Glumes broad, 3-nerved ... **47. Triticum.**
- 19b..** Glumes linear to subulate, 1-nerved ... **45. Secale.**
- 18b..** Lemmas rounded on the back, or with an obscure keel at the middle ... **Lead 20.**
- 20a..** Spikelets subterete, not flattened, fitting into the curvature of the rachis ... **41. Aegilops.**
- 20b..** Spikelets flattened, the spikelets protruding from the rachis ... **Lead 21.**
- 21a..** Spikelets oriented edgewise to the rachis ... **37. Lolium.**
- 21b..** Spikelets oriented with the side against the rachis ... **42. Agropyron.**
- 12b..** Spikelets in an open or contracted panicle ... **Lead 22.**
- 22a..** Plants of salty or alkaline soil; culms solid with many nodes; stems closely covered to the inflorescence by distichous and closely overlapping sheaths with pilose hairs in the throat; collar pilose; ligule a short fringed membrane ... **Chloridoideae: Aleuropodeae: 15. Distichlis.**
- 22b..** Plant not as above ... **Lead 23.**
- 23a..** Lemma with a prominent terminal trifid awn, the lateral 2 awns often shorter than the central one which may be keeled ... **Chloridoideae: Aristideae: 14. Aristida.**
- 23b..** Lemma without 3 awns ... **Lead 24.**
- 24a..** Giant grasses sometimes 2 meters or more tall ... **Arundinoideae: Arundineae: 9. Phragmites.**
- 24b..** Grasses of small to moderate stature; rarely more than 1 to 2 meters tall ... **Lead 25.**
- 25a..** Ligule mainly a fringe of hairs, sometimes with a membranous base, but the terminal fringe at least as long as the membranous portion (does not include *Sporobolus*, with its minute ligule, which is found under the alternate lead, 25b) ... **Lead 26.**
- 26a..** Lemmas deeply bifid, with a large, twisted, geniculate awn from just below the sinus ... **Arundinoideae: Danthoniae: 8. Danthonia.**
- 26b..** Lemmas not awned ... **Chloridoideae: Eragrosteae: 10. Eragrostis.**
- 25b..** Ligule mainly or entirely membranous ... **Lead 27.**
- 27a..** Spikelets 1-flowered. "Agrostideae" (most now part of the Pooideae: Aveneae, except *Stipa* and *Oryzopsis* are segregated into the Pooideae: Stipeae and *Muhlenbergia* is removed to the Chloridoideae: Eragrosteae), **Lead 28.**
- 28a..** Lemma thick, hardened; spikelets awned ... **Lead 29.**
- 29a..** Lemma broad, the awn falling soon after flowering ... **51. Oryzopsis.**
- 29b..** Lemma narrow, with a long twisted, persistent awn ... **52. Stipa.**
- 28b..** Lemma thin, not hardened ... **Lead 30.**
- 30a..** Spikelets in dense, spike-like panicles ... **Lead 31.**
- 31a..** Spikelets articulate below the glumes ... **Lead 32.**
- 32a..** Glumes obtuse to acuminate, awnless ... **18. Alopecurus.**
- 32b..** Glumes with the awn longer than the body of the glume, 3 to 6 mm ... **30. Polypogon.**
- 31b..** Spikelets articulate above the glumes ... **29. Phleum.**
- 30b..** Inflorescence a branched panicle, either loose & open, or contracted to form a spike-like cluster, or lobed, irregular or unsymmetrical in outline ... **Lead 33.**
- 33a..** Lemma mostly terminally awned or awn-tipped, if unawned, then considerably greater than the glumes; rachilla not prolonged past the palea; culms often solid; palea well developed, mostly subequal to the lemma ... **Chloridoideae: Eragrosteae: 11. Muhlenbergia.**

33b.. Lemma awnless or awned on the back (including *Calamagrostis* & *Agrostis*, pars) ...

Lead 34.

34a.. Lemma 1-nerved ... **12. *Sporobolus*.**

34b.. Lemma 3- to 5-nerved ... **Lead 35.**

35a.. Lemma surrounded at the base by a tuft of hairs, arising from the basal callus and persistent when the lemma is detached ... **22. *Calamagrostis*.**

35b.. Lemma glabrous or pubescent, but not subtended by a tuft of hairs from the callus ... **Lead 36.**

36a.. Spikelets articulate above the glumes ... **16. *Agrostis*.**

36b.. Spikelets articulate below the glumes ... **23. *Cinna*.**

27b.. Spikelets 2- to many-flowered ... **Lead 37.**

37a.. Glumes shorter than the lowermost floret; awn, if present, straight and from or near the apex of the lemma. (*Koeleria*, *Trisetum*, *Ventenata* are borderline cases with the glumes as long as the lowermost floret. They are placed in the alternate lead, 37b) ... "Festuceae" (most now included as part of the Pooideae: Aveneae except *Glyceria*, *Melica*, *Pleuropogon* which are in the Pooideae: Meliceae), **Lead 38.**

38a.. Spikelets in racemes ... **Lead 39.**

39a.. Racemes short, dense, overtopped by the leaves; spikelets awnless ... **40. *Sclerochloa*.**

39b.. Racemes elongate, loose, exerted; spikelets awned or mucronate ... **50. *Pleuropogon*.**

38b.. Inflorescence a panicle ... **Lead 40.**

40a.. Culms often bulbous-based; upper 2 to 4 florets sterile and replaced by empty lemmas that enfold one another; auricles lacking; sheaths often closed their full length; perennial ... **49. *Melica*.**

40b.. Plant not as above ... **Lead 41.**

41a.. Rhizomatous plant of shallow water; lemmas not awned, blunt, strongly parallel 7- (5- to 9-) nerved, the nerves not convergent ... **48. *Glyceria*.**

41b.. Plant not as above ... **Lead 42.**

42a.. Caespitose plant, usually of alkaline or salt water; lemmas blunt, stiff, awned and parallel-nerved ... **39. *Pucinellia*.**

42b.. Plant not as above ... **Lead 43.**

43a.. Spikelets sessile in dense, 1-sided clusters at the tips of comparatively few stiff panicle branches; glumes keeled, the 1st lopsided, generally 2- or more rarely 3-nerved, stiffly ciliate on the keel, the 2nd narrower, generally 1-nerved, both with a soft, awn-like tip; lemmas generally awn-tipped; sheaths compressed, keeled ... **35. *Dactylis*.**

43b.. Spikelets not borne in dense 1-sided clusters; glumes and lemmas various ... **Lead 44.**

44a.. Lemmas mostly rounded on the back, 1-awned or infrequently awnless from between a slightly bifid apex; spikelets usually large, 13 to 45 mm ... **34. *Bromus*.**

44b.. Lemmas pointed, awnless or awned from the tip ... **Lead 45.**

45a.. Spikelets awned; blades usually thin and flat, or narrow and involute ... **36. *Festuca*.**

45b.. Spikelets awnless; blades keeled at the tip ... **38. *Poa*.**

37b.. Glumes as long as the lowermost floret (in *Koeleria*, only the 2nd glume is this long); awn, if present, attached to the back of the lemma ... Pooideae: Aveneae (pars, all genera here also fall in the "Aveneae" of A.S.Hitchcock), **Lead 46.**

46a.. Florets 2 (occasionally 3 in *Ventenata*), one perfect, the other staminate ... **Lead 47.**

47a.. Lower floret staminate, awnless (*Arrhenatherum*, with twisted, geniculate, exerted awns would key out here) ... **33. *Ventenata*.**

47b.. Lower floret perfect, awnless, the upper one awned from just below the apex ... **26. *Holcus*.**

46b.. Florets 2 or more, all alike except the reduced upper ones ... **Lead 48.**

48a.. Spikelets articulate below the glumes; the spikelets falling entire ... **31. *Sphenopholis*.**

48b.. Spikelets articulate above the glumes; the glumes similar in shape ... **Lead 49.**

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- 49a.** Spikelets average more than 1 cm long; glumes average at least 2 to 3.5 cm, 7- to 9-nerved; spikelets pendulous; annual ... **20. Avena.**
- 49b.** Spikelets average less than 1 cm long; glumes average less than 2 cm long ... **Lead 50.**
- 50a.** Lemmas keeled, the awn when present from above the middle ... **Lead 51.**
- 51a.** Rachilla joints very short, glabrous or minutely pubescent; lemmas awnless or with a straight awn from a toothed apex ... **27. Koeleria.**
- 51b.** Rachilla joints slender, villous; lemmas with a dorsal, bent awn or rarely awnless ... **32. Trisetum.**
- 50b.** Lemmas convex, awned from below the middle ... **Lead 52.**
- 52a.** Lemma tapering into 2 slender teeth; rachilla prolonged beyond the 2nd floret (*Corynephorus* would also have keyed here) ... **24. Deschampsia.**
- 52b.** Lemma acute or erose-dentate at summit; rachilla not prolonged beyond the 2nd floret ... **17. Aira.**