

Rangeland Weeds

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A weed is a plant that grows in an environmental setting where it is not wanted. The determination of the value of a particular plant is subjective—one person's weed may be another person's prized plant. Natural resource manager need to be familiar with established definitions for types of weeds when dealing with weed problems.

Classification of Life

Forms

Traditionally, the life form classifications of weeds on rangelands have been annuals, herbaceous perennials, and woody perennials. The annuals are primarily exotic species, many of which have spread over vast areas of rangelands until they characterize entire landscapes. Cheatgrass (*Bromus tectorum* L.; Figure 1) in the Intermountain Area or Russian thistle (*Salsola tragus* L.; Figure 2) throughout much of the West are examples of annual range weed species. Herbaceous perennial weeds may also be exotic species. They often reproduce both by seed and by creeping roots or rhizomes. Herbaceous perennial weeds may be landscape characterizing species, such as leafy spurge (*Euphorbia esula* L.), or may be restricted to specific environments, such as hoary cress (*Cardaria draba* [L.] Desv.). In both instances, these herbaceous perennial weeds are usually extremely difficult to control. Few exotic woody perennials are weeds on rangelands; however, saltcedar (*Tamarix ramosissima* Ledeb.) is an important exception. Most of the weeds in this classification are native species that increase in density or invade new habitats

in response to an environmental stimulus. Many species of rabbitbrush (*Chrysothamnus* spp.) or singleleaf pinyon (*Pinus monophylla* Torr. & Frem.) are native species that can become invasive perennial woody weeds.

Classification by Life Cycle

The basic life cycles of weeds are annual, biennial, and perennial. Annuals complete their life cycles from germination through seed production in 1 year. Many species are classified as winter annuals because they germinate in the fall of 1 year and complete their life cycles in the spring of the next year. Cheatgrass is an example, although it can germinate in spring and still complete its life cycle within the same year. Halogeton (*Halogeton glomeratus* [Beib.] C.A. Mey.) and Russian thistle are often referred to as summer annuals because they germinate in late spring and complete their life cycles in fall. Biennials require 2 years to complete their life cycles. These are broadleaf herbaceous species that usually form a rosette of leaves the first year and send up a flowering stalk the second year. Dyer's woad (*Isatis tinctoria* L.) is a good example. Perennials are often subdivided into short- and long-lived perennials. Long-lived species are vegetatively propagated species that are usually extremely



Figure 1. Cheatgrass (*Bromus tectorum* L.), an annual weed, grows in the Intermountain Area.

difficult to control. Russian knapweed (*Acroptilon repens* [L.] D.C.) is a good example. Short-lived perennials are often biennial species that will occasionally persist as perennials. Scotch thistle (*Onopordum acanthium* L.) and Wilson weed (*Brassica elongata* ssp. *integrifolia* [Boiss.] Breit.) are good examples. Both these species can be annuals, biennials, or short-lived perennials.

Classification by Colonizing Ability

Presently, the popular title for rangeland weeds is invasive. When we introduced this classification of weeds we used self-invasive and defined the term as weeds that colonize a new habitat without the conscious efforts of humans. In common usage, "self" has been dropped.

Classification by Origin

For a given range site, weeds can be native, introduced, or exotic. In the past, native has been used in a broad sense, such as native to North America versus native to Asia. Gumweed (*Grindelia squarrosa* (Pursh) Dunal) is an invasive species native to the central Rocky Mountain States. In California, it is considered an invasive exotic species. Introduced weeds are non-natives that were intentionally introduced and escaped cultivation versus accidental introductions. Saltcedar is a good example. Exotic species result from accidental introduction, often as impurities or mimics of seeds of crop species.

Classification in Legal Terms

Various States and the Federal government have enacted laws and regulations defining noxious weeds. These laws and regulations set limits or outright bans on lots



of seed entering commerce contaminated with seeds of noxious weed species. In addition, these regulations may require attempts at eradicating infestations of these species. In some States, the failure of landowners (including governmental agencies) to take such action can result in the assessment of fines or bills for the cost of eradication. The weed regulatory agency issues so-called abatement notices to the landowner of record to control noxious weeds. Many States have various levels of noxious weeds. These usually reflect the chances of eradication rather than the seriousness of the weed species. For example, an "A" level noxious weed might be a very serious pest that, in the judgment of the regulatory agency, can still be eradicated. A "B" level noxious weed might be a species with even worse weedy characteristics, but it is judged to be so well established that eradication is nearly impossible and only suppression is economically or ecologically feasible. Noxious



Figure 2. Russian thistle (*Salsola tragus* L.) is found throughout much of the West.

weed classifications vary among States. Federal land management personnel that have individual administrative units in more than one State may find themselves dealing with a conflicting list of noxious weeds.

Classification by Common Name

This is the classification that natural resource managers will most frequently use, but it is fraught with peril. Cheatgrass, six-weeks grass, bronco grass, military grass, nodding brome, and downy brome are all common names for *Bromus tectorum*, which is most frequently referred to in the Intermountain Area as cheatgrass. The Weed Science Society of America (WSSA) maintains a list of accepted common names for weeds. Unfortunately, this list does not always conform to local or even regional common usage. For example, WSSA uses the common name downy brome instead of cheatgrass.

Classification by Scientific Names

The use of genus and species names for a weed in the Latin alphabet is the universal way of

communicating the name of a weed, provided it also includes the authority and the flora (taxonomic listing) where the description of the plant was published. For example, it usually does not matter if you call a plant cheatgrass or downy brome if, the first time you use the common name in a technical document, you include the complete scientific name, such as (*Bromus tectorum* L.) as described (for example) in Hickman, J. C., editor. 1993. The Jepson Manual. University of California Press, Berkeley. A natural resource manager who prepares a communication concerning noxious weeds must use the correct scientific name for the weed. It is important to include the authority for the name and the flora where the name was obtained because scientific names can change over time. For example, many range management students learned the scientific name of bluebunch wheatgrass as *Agropyron spicatum* Pursh. However, on the basis of genomic classification, the name is now accepted as *Pseudoroegneria spicata* (Pursh) A. Löve.

Conclusion

If you understand and properly use the plant classification terminology, you reduce the chances of misunderstandings in communications concerning weeds and natural resource management.

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