Phragmites australis (Cav.) Trin. ex Steud.

Common reed

Family: Poaceae
Range: A western biotype is native throughout the western United States and adjacent Canada. A Gulf Coast biotype is found from Florida across to southern California, although it is not known if this biotype is native or introduced from Mexico and Central America. A non-native biotype has been found throughout the contiguous U.S. and adjacent Canada.
Habitat: Wetlands, riparian areas, shores of lakes and ponds.
Origin: The non-native biotype was introduced from Europe, apparently via ships' ballast. There are also native biotypes of *Phragmites australis*.
Impacts: Forms dense stands in wetlands and reduces native plant biodiversity.
Western states listed as Noxious Weed: Oregon, Washington

Common reed is a rhizomatous perennial grass to 15 ft tall, usually found growing in water or along the shores of streams, ponds, and lakes. The leaves are typical for a grass, but large: up to 1.5 inches wide and 8 to 16 inches long. The ligule (at the junction of the leaf blade and the stem) is tipped by a fringe of hairs, while the blades and sheaths are smooth. Leaf sheaths of the introduced biotype adhere tightly to the stem into winter, while in the native biotype the sheaths fall away as the leaves die in the autumn. Stems ("culms") are sturdy, up to 0.5 inch thick at the base, and slightly ridged or rough to the touch under the leaf sheath.

The inflorescence is 6 to 16 inches long, tawny brown or purplish, and feathery in appearance. The glumes (bracts below the flowering spikelet) are shorter than the lemmas (bracts at the base of individual florets) and are hairless. Plants reproduce by seeds, rhizomes, and stem fragments. The florets often have many hairs, allowing seed to blow with the wind or in the airstreams of vehicles, or to float in the water. The seeds are short-lived (likely < 2 years) under field conditions, and a persistent seedbank does not accumulate. Common reed rhizomes form a dense network under the colony; each rhizome can grow 10 ft or more in a single growing season.

There are several biotypes of common reed, some native and some introduced. The following table offers a good comparison between the native biotype and the major European biotype. The authors of the table caution that these characters may not distinguish the Gulf Coast type of common reed, which has been introduced into portions of southern California and Arizona in the west.

SUMMARY OF MORPHOLOGICAL CHARACTERS THAT DISTINGUISH NATIVE AND INTRODUCED *PHRAGMITES AUSTRALIS* IN THE UNITED STATES.

Character	Native	Introduced
Ligule length	> 1.0 mm	< 1.0 mm
Lower glume length	3.0 to 6.5 mm Most > 4.0 mm	2.5 to 5.0 mm Most < 4.0 mm
Upper glume length	5.5 to 11.0 mm Most > 6.0 mm	4.5 to 7.5 mm Most < 6.0 mm
Adherence of dead leaf sheaths	Loose, drop off easily	Tight, remain on dead stems
Growth form (stem density)	Typically in mixed communities. Stem density may be low to high, dead stems less	Often grows as a monoculture. Stem density is high, dead stems often persist to

	likely to persist to the next growing season.	the next growing season.
Culm texture	Smooth, shiny	Dull or flat color, slightly ridged
Culm color	May be dark red at nodes and internodes, where exposed to UV. May be green as well.	Typically green, occasionally with some red color at the lower nodes
Spots on culms	May be present	Not present; mildew may be present
Leaf color	Lighter, yellow green to dark green	Typically darker green, but may be lighter in saline areas

From: Phragmites Field Guide: Distinguishing Native and Exotic Forms of Common Reed (*Phragmites australis*) in the United States, by Jil Swearingen and Kristin Saltonstall (2010). (http://www.nps.gov/plants/alien/fact/pdf/phau1-powerpoint.pdf)

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Digging and removal of common reed is usually not feasible, given its dense root and rhizome system and its tendency to grow on rocky or rough ground or in standing water. If attempted, remove as much root and rhizome as possible, as broken root and rhizome sections will resprout from fragments. Hand pulling is not an effective strategy, as it rarely is possible to remove roots and rhizomes without breaking and fragmenting these tissues. Mowing is difficult in wetland sites, and unless applied repeatedly, mowing will not generally control this perennial species. Timely mowing can prevent seed production, however. Mulching with plastic or fabric sheets has not been shown to be effective, given that shoots from rhizomes are sharp-tipped as they emerge from the soil.
Cultural	Dredging and draining of water where common reed is found may reduce the vigor of common reed colonies. However, draining and dredging are not appropriate for use on most wetland preserves where the weed is often found in abundance. Prescribed burning is sometimes used for controlling this species, primarily by removing old growth of common reed and allowing seeds of other species to germinate and perhaps establish. Burning is sometimes used to remove old growth in preparation for herbicide application.
Biological	There are currently no biological control agents to aid in the control of common reed. Literature and field surveys in the northeastern United States and eastern Canada indicate that at least 26 native herbivores attack common reed in North America. There have been no deliberate releases made of European insects known to feed on the introduced biotype, but at least 21 species have been accidentally introduced to North America.

CHEMICAL CONTROL

The following specific use information is based on published papers or reports by researchers and land managers. Other trade names may be available, and other compounds may also be labeled for this weed. Directions for use may vary between brands; see label before use. Most herbicide applications will require multiple applications to fully control common reed. Because it usually is found growing in or near standing water, only aquatic herbicide formulations are recommended for use. Additionally, most states require specific aquatic endorsements for applicators of aquatic herbicides. Herbicides are listed by mode of action and then alphabetically. The order of herbicide listing is not reflective of the order of efficacy or preference.

AROMATIC AMINO ACID INHIBITORS	
Glyphosate *Rodeo*, *Aquamaster*	**Rate:** Broadcast treatment: 4 to 6 pt product (*Rodeo* or *Aquamaster*)/acre (2 to 3 lb a.e./acre). Spot treatment: 0.75% v/v solution. Wiper treatment: 33 to 50% of concentrated product. **Timing:** Postemergence to plants in full bloom in late summer or autumn. **Remarks:** Use up to 1% non-ionic surfactant approved for aquatic use to improve herbicide uptake. Removal of old stalks and foliage by mowing or burning in spring may be necessary for the herbicide application to adequately cover the foliage and for the treatment to be effective. Glyphosate overspray will injure or kill other plants that it contacts. Wiper application can also be used to apply glyphosate to common reed. Glyphosate can be combined with imazapyr for more effective control under some circumstances.
BRANCHED-CHAIN AMINO ACID INHIBITORS	
Imazapyr *Habitat*	**Rate:** 4 to 6 pt product/acre (1 to 1.5 lb a.e./acre) **Timing:** Postemergence to plants fully leafed out in summer.

	Remarks: Use up to 1% non-ionic surfactant approved for aquatic use to improve herbicide uptake. Removal of old stalks and foliage by mowing or burning in spring may be necessary for the herbicide application to adequately cover the foliage and for the treatment to be effective. Imazapyr overspray will injure or kill other plants that it contacts. Imazapyr can be combined with glyphosate for more effective control under some circumstances.

ECOMMENDED CITATION: DiTomaso, J.M., G.B. Kyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.