United States
Department of
Agriculture

Forest
Service

Southwestern
Region

MR-R3-16-6

December 2013

Invasive Plants and Weeds of the National Forests and Grasslands in the Southwestern Region

Second Edition

Cover Image: Tall morning-glory (Ipomoea purpurea (L.) Roth) USDA-NRCS PLANTS Database/USDA NRCS. "Wetland Flora: Field Office Illustrated Guide to Plant Species." USDA Natural Resources Conservation Service.

Printed on recycled paper • December 2013

Invasive Plants and Weeds of the National Forests and Grasslands of the Southwestern Region

Second Edition

Compiled and Edited by

Mitchel R. White, Ph.D.
Ecologist

USDA Forest Service
Southwestern Region
Apache-Sitgreaves National Forests

To solve a problem, we must first understand the problem. This field guide is designed to help identify the invasive plants that threaten our forests and grasslands.

Introduction

This second edition has been compiled to include additional nonnative, undesirable weeds that were left out of the first edition. Thirty-one additional species were added to reflect the concerns of forest personnel throughout the Southwestern Region.

As defined in Executive Order 13112, an "invasive species" (including plants) means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Invasive plants are nonnative plant species that can grow and spread rapidly, thereby replacing native plant species. Invasive plants generally have one or more of the following characteristics: aggressiveness, difficult to manage, poisonous, toxic, parasitic, potential carrier or host for serious insects or diseases, and are new or uncommon to the United States or parts thereof. The definition of a weed is any undesired, uncultivated plant that grows out of place and competes with other plants for water, nutrients, and space.

Control of invasive plants and common weeds should be everyone's concern since they can occur across all landownerships. Invasive plants and weeds compete with crops; poison or injure livestock, wildlife and people; reduce forage for wildlife and livestock; change natural fire regimes; and reduce recreation enjoyment because of thorns, allergies or unsightliness. Invasive plants and weeds also destroy the beauty and natural habitats of the Southwest wherever and whenever they occur.

Invasive plants continue to spread into uninfested areas in the western United States. On Federal lands, it is estimated that invasive plants occur on more than 17 million acres. An estimated 6 to 7 million acres are currently infested on National Forest System lands, with a projected potential for increasing at a rate of 8 to 12 percent per year. Invasive plants and common weeds infest native plant communities in increasing numbers throughout the Southwest and are beginning to appear on the national forests and grasslands in greater numbers every passing year. Invasive plants

have a significant environmental advantage over native plant species because they are free of natural enemies. Invasive plants pose an increasing threat to native ecosystems. This is why prevention and direct control methods must be used to stress or remove invasive plants and weeds from native plant communities.

The invasive plants listed in this document have been introduced to the Southwest from another place without the accompaniment of their natural predators or environmental controls to keep them in check. As a result, these plants can overwhelm native plant species and ecosystems, and spread dramatically year by year.

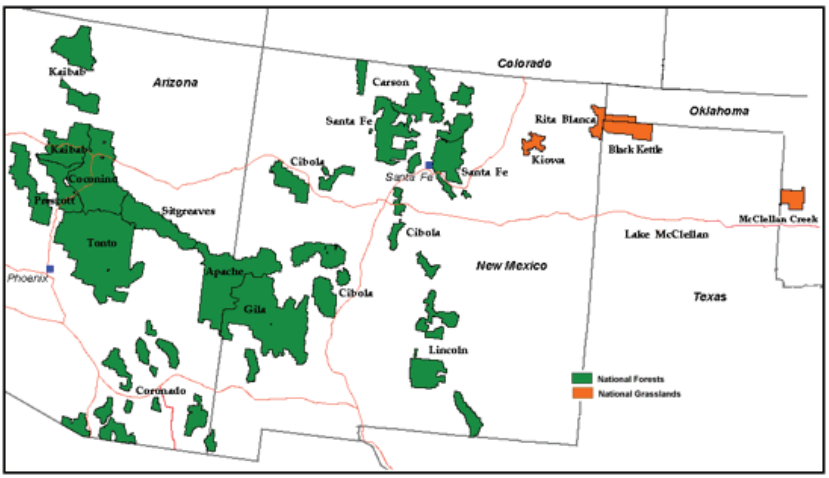
Control of invasive plant and common weed infestations requires the development and implementation of a management program, which focuses on: (1) preventing the introduction of new invasive plants and weeds; (2) early detection of infestations; (3) conducting early treatment of new infestations; and (4) containing and controlling established infestations at times and places that make them most effective and efficient. The most effective and efficient combination depends on factors such as the biology of the particular plant(s) and the circumstances under which it is growing. The overall priority for treatment is invasive plants over weeds, due to the greater threat of the former.

Because some invasive plants and common weeds pose challenges to land managers in dealing with the health of forests, woodlands, and grasslands, a series of weed management field guides has been published for management of invasive plant and common weed species in the Southwest. This book is a companion document intended to work in conjunction with those individual management field guides. The management field guides are available at our Forest Health Web site: http://www.fs.usda.gov/main/r3/forest-grasslandhealth/invasivespecies

This book serves as the U.S. Forest Service's guide for identifying invasive plants and common weeds in forests, woodlands, grasslands, and deserts associated with its Southwestern Region. The Southwestern Region (Region 3) encompasses Arizona and New Mexico, which together have 11 national forests (NFs). The region also includes four national grasslands (NGs) located in northeastern New Mexico, western Oklahoma, and the Texas panhandle.

National Forests and Grasslands in Region 3 by State

Arizona	New Mexico	Oklahoma	Texas
Apache-Sitgreaves NFs	Carson NF	Black Kettle NG	Black Kettle NG
Coconino NF	Cibola NF	Rita Blanca NG	McClellan Creek NG
Coronado NF	Gila NF		Rita Blanca NG
Kaibab NF	Kiowa NG		
Prescott NF	Lincoln NF		
Tonto NF	Rita Blanca NG		
	Santa Fe NF		



Contents

Acknowledgements

I would like to thank all of the individuals and/or organizations who so graciously granted permission and allowed the use of their photographs; they are accredited under each individual photograph used in this guide. The full list of photography credits can be found on page 218.

I would like to acknowledge and thank Michelle W. Davalos, Patti Fenner, Laura Moser, Chris Nelson, Sandra Roberts, Teresa Smergut, Allen White, and Linda J. WhiteTrifaro for their help in preparation of this book. I also thank the forest and district employees of the Southwestern Region.

References

Arizona Noxious Weed Law and Rules. Plant Service Division. 2005. Prohibited, regulated and restricted noxious weeds (May 1, 2006). Arizona Department of Agriculture. Available at: http://www.azda.gov/PSD/quarantine5.htm

Barkworth, M.E., K.M. Capels, S. Long, L.K. Anderton, and M.B. Piep (eds.). 2007. Flora of North America: North of Mexico Volume 24: Magnoliophyta: Commelinidae (in part): Poaceae, part 1. Oxford University Press, New York, NY.

Barkworth, M.E., K.M. Capels, S. Long, and M.B. Piep (eds.). 2003. Flora of North America: North of Mexico Volume 25: Magnoliophyta: Commelinidae (in part): Poaceae, part 2. Oxford University Press, New York, NY.

California Department of Food and Agriculture Division of Plant Health and Pest Prevention Services (PHPPS). 2010. @ http://www.cdfa.ca.gov/phpps

CalPhotos. CalPhotos is a project of BSCIT. University of California, Berkeley @ http://calphotos.berkeley.edu/. Last updated on 08/10/10.

Executive Order 13112. February 3, 1999. Invasive Species. Federal Register, Vol. 64, No. 25, Monday, February 8, 1999. Presidential Documents. Pp 6183-6186.

Forestry Images.org. Available at: http://www.forestryimages.org/about/

Hilty, J. 2002-2010. Illinois wildflowers. @ http://www.illinoiswildflowers.info/

Invasive.org, Center for Invasive Species and Ecosystem Health. The University of Georgia - Warnell School of Forestry and Natural Resources and College of Agricultural and Environmental Sciences - Department of Entomology @ http://www.invasive.org/species.cfmForestryimagesLast updated on 07/08/10.

Kearney, T.H.; and R.H. Peebles. 1979. Arizona flora, 2nd ed. University of California Press, Berkeley, CA.

McDougall, W.B. 1973. Seed plants of northern Arizona. Museum of Northern Arizona, Flagstaff, AZ.

New Mexico Noxious Weed Law and Rules. Office of the Director/ Secretary. 1998. New Mexico noxious weed list (October 20, 2003). New Mexico Department of Agriculture. Available at: http://nmdaweb.nmsu.edu/animal-and-plant-protection/noxious-weeds/weed_memo_list.pdf

Oklahoma Noxious Weed Law and Rules. Oklahoma House of Representatives. 1998. House Bill 2277 (October 20, 2003). State of Oklahoma. Available at: http://www.oklaosf.state.ok.us/~okag/forms/law/noxweedlaw.htm

SEINet (Southwest Environmental Information Network). Available at: http://swbiodiversity.org/seinet/index.php

Springer, J.D., M.L. Daniels, and M. Nazaire. 2009. Field guide to forest and mountain plants of northern Arizona. The Northern Arizona Ecological Restoration Institute, Flagstaff, AZ.

Texas Noxious Weed Law and Rules. Texas Administrative Code. 2005. Quarantines and noxious plants, Chapter 19 (May 24, 2006). State of Texas. Available at: http://www.statutes.legis.state.tx.us/Docs/AG/htm/AG.78.htm

Timme, R.E. @ http://www.ruthtimme.com. Last updated on 11/16/09 by Ruth E. Timme.

USDA, NRCS. 2010. The PLANTS Database (http://plants.usda.gov, 11 August 2010). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

USDA, Forest Service. Fire effects information @ www.fs.fed.us/database/feis/plants/index.html.

USDA, Forest Service. Forest Service Manual (FSM) 2080. Noxious Weed Management. USDA Forest Service, Washington, DC.

USDA, Forest Service. 1997. Region 3 rangeland analysis and management training guide. Appendix A noxious weeds. USDA Forest Service, Southwestern Region, Albuquerque, NM.

USDA, Forest Service. 1999. Noxious weed management: A regional strategy for the protection and restoration of native plant communities. USDA Forest Service, Southwestern Region, Albuquerque, NM.

Westbrooks, R. 1998. Invasive plants, changing the landscape of America: Fact Book. Federal Interagency for the Management of Noxious Weeds and Exotic Weeds (FICMNEW). Washington, DC.

Whitson, T.D., L.C. Burrill, S.A. Dewey, D.W. Cudney, B.E. Nelson, R.D. Lee, and R. Parker. 2001. Weeds of the West, 5th ed. Western Society of Weeds, Grand Teton Lithography, Jackson, WY.

White, M.R. 2008. Field guide to noxious and invasive weeds known to occur or are potentially occurring on the Apache-Sitgreaves National Forests. USDA Forest Service, Southwestern Region, MR-R3-01-2. Albuquerque, NM.

White, M.R. 2011. Invasive Plants and Weeds of the National Forests and Grasslands in the Southwestern Region. USDA Forest Service, Southwestern Region, MR-R3-16-6. Albuquerque, NM.

Weed Classifications

Arizona

Arizona prohibited are noxious (= regulated) weeds prohibited from entry into the state. This includes plants, stolons, rhizomes, cuttings, and seeds.

Arizona regulated are noxious weeds regulated and if found within the state, may be controlled or quarantined to prevent further infestation or contamination. This includes plants, stolons, rhizomes, cuttings, and seeds.

Arizona restricted are noxious weeds restricted and if found within the state, shall be quarantined to prevent further infestation or contamination. This includes plants, stolons, rhizomes, cuttings, and seeds.

New Mexico

New Mexico Class A species are currently not present in New Mexico, or have limited distribution. Preventing new infestations of these species and eradicating existing infestations is the highest priority.

New Mexico Class B species are limited to portions of the state. In areas with severe infestations, management should be designed to contain the infestation and stop any further spread.

New Mexico Class C species are widespread in the state. Management decisions for these species should be determined at the local level, based on feasibility of control and level of infestation.

New Mexico Watch List species are species of concern in the state. These species have the potential to become problematic. More data is needed to determine if these species should be listed. When these species are encountered, please document their location and contact appropriate authorities.

Oklahoma

Oklahoma noxious weeds are plants designated as noxious weeds by the legislature as a public nuisance in all countries across the state.

Texas

Texas noxious plants and invasive plants are defined as plant species that have serious potential to cause economic or ecological harm to the state.

Crimson fountaingrass © F&KS

Arabiangrass

Schismus arabicus Nees (Grass family, Poaceae)

Description

Arabiangrass is a very short winter annual bunchgrass. It produces dense, low leafy growth in the fall. Spring growth starts earlier than most other annual grasses. It does not have creeping stolons or rhizomes; however, it has an extensive fibrous root system and tillers profusely.

Plants: Culms 3/4 to 6-3/4 inches tall; auricles absent; ligules of hairs less than 1/16 inch long; leaf blades 1-1/2 to 2-3/8 inches long, less than 1/16 inch wide, lower surfaces glabrous or sparsely pubescent, upper surfaces sparsely to densely pubescent.

Inflorescence/Spikelet/Floret: Flowers April to June; inflorescence is a dense raceme panicle, 3/8 to 1-3/8 inches long; spikelets 3/16 to 5/16 inch long; lower glumes 5/32 to 1/4 inch long, equaling or exceeding the uppermost florets; upper glumes slightly shorter than the lower; lemmas 1/16 to 3/32 inch long, with dense, spreading pubescence between the nerves, lobes longer than wide, acute to acuminate; paleas shorter than the lemmas.

Habitat

Cultivated and disturbed or degraded sites in desert and semidesert grassland communities, and roadsides within elevations that generally range below 4,500 feet.

Propagation/Phenology

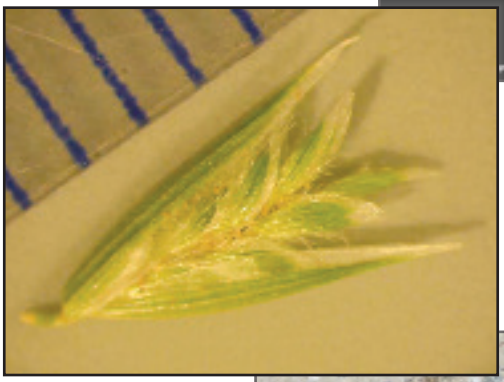
Reproduces by seed.

Comments

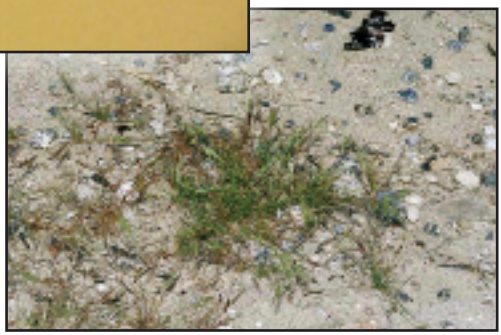
Native to southwestern Asia; Arabiangrass effectively limits nutrients for other plants and can increase the frequency and extent of fire. Arabiangrass is very similar to, and difficult to tell apart from, Mediterranean grass. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Arabiangrass florets
© SH

Arabiangrass inflorescence
© JMD



Arabiangrass spikelet
© ASUH



Arabiangrass plant(s)
© JMD

Buffelgrass

Pennisetum ciliare (L.) Link (Grass family, Poaceae)

Description

Buffelgrass is an erect to decumbent, warm season, perennial bunchgrass that forms thick mats or tussocks with dense, geniculate culms, these are occasionally described as stoloniferous, 4 to 60 inches tall; roots are thick, often long and tough, and with some ecotypes, rhizomatous.

Plants: Culms 4 to 60 inches, erect, sometimes branching at the aerial nodes, glabrous, sometimes scabrous beneath the panicle; nodes glabrous; leaves green or blue-green; sheaths laterally compressed and keeled, glabrous or pubescent, margins ciliate; ligules less than 1/8 inch long, membranous, ciliate; blades 1-1/8 to 15-3/4 inches long, 1/16 to 1/2 inch wide, flat, glabrous or pubescent, margins ciliate or glabrous basally; often turn reddish during cooler weather.

Inflorescence/Spikelet/Floret: Flowers July to October; inflorescence is generally cylindrical in outline, 3/4 to 5-1/2 inches long, and can be purple, gray or yellowish; spikelets are solitary or clustered, and are surrounded by numerous bristles; bristles are separate, not fused.

Habitat

Cultivated and disturbed or degraded sites in desert and semi-desert grassland communities, and roadsides within elevations that generally range below 4,500 feet.

Propagation/Phenology

Reproduces vegetatively and by seed.

Comments

Native to the Mediterranean region; forms dense thickets that displace native species, highly competitive, because it strongly modifies the communities it invades, and can be difficult to control; plants can rapidly develop colonies; contributing to the conversion of desert shrub communities to grassland in some areas by facilitating periodic fires. Arizona prohibited/regulated noxious weed.

Buffelgrass infestation
© JMR

Buffelgrass leaf-collar region
© JMD

Buffelgrass inflorescence
© JMD

Buffelgrass plants
© JMD

Cheatgrass

Bromus tectorum L. (Grass family, Poaceae)

Description

Cheatgrass is a tufted, cool-season annual bunchgrass; at maturity the foliage and seed heads often become purplish before drying completely and becoming brown or tan; it becomes extremely competitive with other grasses and displaces native species.

Plants: Cheatgrass is a tufted, cool-season annual bunchgrass with erect or ascending culms; characteristically reaching a height of 4 to 36 inches; leaf sheaths and culms are densely and softly retrorsely pubescent to pilose, upper sheaths sometimes glabrous; auricles are absent; ligule is less than 1/8 inch long, glabrous, obtuse, lacerate; blades are flat, less than 1/4 inch wide and up to 6-1/4 inches long; both surfaces softly hairy.

Inflorescence/Spikelet/Floret: Flowers May to June; inflorescence is open, lax, drooping, usually one-sided, 2 to 6 inches long; nodding spikelets 4 to 8 per node, 3/8 to 3/4 inch long, moderately laterally compressed, usually purplish tinged, with 4 to 8 florets; glumes are villous, pubescent, or glabrous with hyaline margins, awnless; lower glumes 3/16 to 5/16 inch long, 1-nerved; upper glumes 1/4 to 1/2 inch long, 3 to 5 nerved; lemmas 3/8 to 1/2 inch long, lanceolate in shape, glabrous or pubescent to pilose, 5- to 7-nerved, rounded over the midnerve, margins are hyaline, often with some hairs longer than those on back, tips acuminate, hyaline, teeth less than 1/8 inch long; awns 3/8 to 5/8 inch long, straight, arising below the lemma tip.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, chaparral, woodland, and riparian communities, and roadsides within elevations that generally range below 8,500 feet.

Propagation/Phenology

Reproduces by seed; density of cheatgrass plants can range between 1 and 1,400 plants per square foot, and averages around 600 plants per square foot.

Comments

Native to Eurasia and Africa; cheatgrass has a compressed phenology and usually dries out and casts seeds by mid-June; these dry plants can fuel wildfires; if fires occur frequently, perennials will likely give way to a community dominated by cheatgrass and other annuals. New Mexico Class C noxious weed.

Cheatgrass inflorescence
© SD

Cheatgrass inflorescences
© CE

Cheatgrass leaf-collar region (left)
© SD

Cheatgrass plants
© CE

Crimson Fountaingrass

Pennisetum setaceum (Forssk.) Chiov. (Grass family, Poaceae)

Description

Crimson fountaingrass is a very showy warm-season perennial bunchgrass with graceful, arching leaves, and erect or nodding rose-colored panicles; roots fibrous, without rhizomes.

Plants: Culms 4 to 60 inches, erect, pubescent beneath the panicle; nodes glabrous; leaves green, sometimes bluish-green; sheaths glabrous, margins ciliate with white hairs; ligules less than 1/8 inch long; blades 7-7/8 to 25-1/2 inches long, less than 1/8 inch wide, rolled or folded, scabrous, midveins noticeably thickened.

Inflorescence/Spikelet/Floret: Flowers June to October; inflorescence is generally cylindrical in outline, 2-3/8 to 12-1/2 inches long and 1-9/16 to 2-1/16 inches wide, erect or arching, pink to dark burgundy; spikelets are solitary or clustered, and are surrounded by numerous bristles; bristles are separate, not fused.

Habitat

Cultivated and disturbed or degraded sites in desert and semi-desert grassland communities, and roadsides within elevations that generally range below 4,500 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to the Mediterranean region; contributing to the conversion of desert shrub communities to grassland in some areas by facilitating periodic fires. New Mexico Watch List species.

Crimson fountaingrass inflorescence
© F&KS

Crimson fountaingrass plants
© F&KS

Crimson fountaingrass leaf-collar region (right)
© RO

Crimson fountaingrass infestation
© JMR

Field **Sandbur**

Cenchrus spinifex Cav. (Grass family, Poaceae)

Description

Warm-season tufted annual or short-lived perennial grass arising from a geniculate base; roots are fibrous, shallow, occasionally rooting at the nodes, from 12 to 40 inches tall; with loose spikes of spiny burs at maturity.

Plants: Loosely tufted; culms branched and often abruptly bent near the base; leaf sheaths flattened, glabrous or sparsely pilose; blades flat, sometimes folded, appear glabrous, but are rough with very short hairs; blades 1/8 to 5/16 inch wide and 1-1/8 to 11 inches long, either flat or folded; glabrous or sparsely covered with long, soft hairs; ligules less than 1/16 inch long.

Inflorescence/Spikelet/Floret: Flowers July to September; inflorescences terminal, spike-like panicles of burs, 1 to 3-1/4 inches long; burs 3/16 to 3/8 inch long and less than 3/16 inch wide, consisting of 1 to 2 series of many stiff, partially fused, sharp bristles surrounding 2 to 4 spikelets; outer bristles, when present, mostly flattened; inner bristles 8 to 40, less than 3/16 inch long and less than 1/16 inch wide, fused at least half their length; disarticulation at the base of the burs; spikelets 2 to 4 per bur, 1/8 to 1/4 inch long, glabrous; lower glumes less than 1/8 inch long; upper glumes 3/16 inch long, 5- to 7-nerved; lower lemmas less than ¼ inch long, 5- to 7-nerved; upper lemmas also less than 1/4 inch long, obscurely nerved.

Habitat

Cultivated and disturbed or degraded sandy or gravelly sites within elevations that generally range from 3,500 to 5,000 feet.

Propagation/Phenology

Reproduces by seed; seedlings emerge in spring or early summer, and growth is rapid under moist conditions.

Comments

Native to the southern United States, Mexico, Central, and South America; coastal sandbur is an aggressive colonizer. Arizona prohibited/regulated noxious weed.

Field sandbur inflorescence
© RO

Field sandbur leaf-collar region
© JMD

Field sandbur seed bur (left)
© RO

Field sandbur plants (right)
© RO

Giant Reed

Arundo donax L. (Grass family, Poaceae)

Description

Giant reed is a tall, bamboo-like, perennial grass that can grow to over 30 feet in height; fleshy, creeping rhizomes, up to 3/8 inch thick, form compact masses from which tough, fibrous roots emerge that penetrate deeply into the soil.

Plants: Culms 9-1/2 to 33 feet tall, in large tussocks or hedges; leaves arranged in two vertical rows on opposite sides of the culms, the leaves look like those of corn; ligules very short, less than 1/16 inch long; blades 1 to 3-1/2 feet long, 3/4 to 3-1/2 inches wide, with a wedge-shaped, light to dark brown area at the base.

Inflorescence/Spikelet/Floret: Flowers May to October; panicles are plume-like, 12 to 24 inches long, to 12 inches wide; silver, cream, brown to purplish in color; spikelets 3/8 to 5/8 inch, laterally flattened, with 2 to 4 florets per spikelet; glumes nearly equal, as long as the spikelets, thin, brownish or purplish, 3-nerved, long-acuminate; lemmas 5/16 to 1/2 inch long, 3- to 5-nerved, pilose, hairs 4 to 9 mm, tips 2-toothed, midnerve ending into a delicate awn.

Habitat

Established in moist places such as ditches, stream and riverbanks, and flood plains, growing best in well drained soils where abundant moisture is available; tolerates a wide variety of conditions, including high salinity, and can flourish in many soil types from heavy clays to sands within elevations that generally range below 4,000 feet.

Propagation/Phenology

Reproduces primarily by fast-growing rhizomes that produce new plants; giant reed can float miles downstream where root and stem fragments may take root and initiate new infestations, sometimes covering several acres.

Comments

Native to the Mediterranean region; giant reed grows rapidly, is highly competitive, and can be difficult to control; plants can rapidly develop dense colonies. New Mexico Watch List species and Texas noxious plant.

Giant reed inflorescences
© DJM

Giant reed plants
© JHM

Giant reed leaf-collar region (left)
© CE

Giant reed infestation consisting of young plants
© DJM

Japanese Brome

Bromus japonicus Thunb. (Grass family, Poaceae)

Description

Japanese brome is a winter annual bunchgrass. It produces dense, low leafy growth in the fall. Spring growth starts earlier than most other annual grasses. It does not have creeping stolons or rhizomes; however, it has an extensive fibrous root system and tillers profusely.

Plants: Culms 8-5/8 to 43-3/8 inches tall, solitary, erect or geniculate, slender, weak; leaf sheaths densely shaggy-pilose, auricles absent; ligules less than 1/8 inch long, hairy, obtuse, erose; leaf blades 4 to 8 inches long, 1/8 to 1/4 inch wide, coarsely pilose on both surfaces.

Inflorescence/Spikelet/Floret: Flowers April to June; inflorescence is a panicle, 2 to 9 inches long, 1 to 4-3/4 inches wide, open, nodding; branches spreading to ascending, lower branches slightly drooping; spikelets 3/8 to 3/4 inch long, shorter than at least some panicle branches, ovoid-lanceolate or ovate, laterally compressed; florets 4 to 10, ascending spreading after flowering; glumes scabrous or glabrous; lower glumes 3/16 to 1/4 inch long, 3 to 5 veined; upper glumes 1/4 to 5/16 inch long, 7 veined; lemmas 1/4 to 7/16 inch long, less than 1/8 inch wide, elliptic, coriaceous, obscurely 7 veined, rounded over the midvein; awns 1/8 to 3/8 inch long, straight or flexuous, arising less than 1/16 inch below the lemma apices.

Habitat

Cultivated and disturbed or degraded sites in semidesert grassland and woodland communities, and roadsides within elevations that generally range from 4,500 to 7,200 feet.

Propagation/Phenology

Reproduces by seed. Japanese brome produces roughly 250,000 seeds per pound.

Comments

Native to southern and south-central Europe and Asia; Japanese brome is an excellent seed producer and can maintain itself as a

reseeding annual; forms dense thickets that displace native species, highly competitive. Bromes are known to cause hay fever and asthma. Japanese brome has poor forage quality. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Japanese brome inflorescence
© JMD

Japanese brome leaf collar region
© JMD

Japanese brome spikelets
© JCS

Japanese brome spikelets
© JMD

Johnsongrass

Sorghum ***halepense*** **(L.) Pers. (Grass family, Poaceae)**

Description

Johnsongrass is a large, coarse, introduced, warm-season, perennial bunchgrass growing to 6-1/2 feet in height, with reddish to purplish-black panicles; plant produces vigorous rhizomes.

Plants: Seedlings resemble young corn seedlings; mature plants typically tufted, culms 1-3/4 to 6-1/2 feet tall and 1/8 to 3/4 inch thick; nodes appressed pubescent; internodes glabrous; collars broad, whitish or pale green, smooth; auricles lacking; sheaths open, ribbed, compressed, glabrous or sparsely hairy near blade junction, shorter than internodes, pale green to reddish; ligules l-1/6 to 1/4 inches long, membranous, conspicuously ciliate; leaf blades, flat, 4 to 35-1/2 inches long and 3/8 to 1-9/16 inches wide.

Inflorescence/Spikelet/Floret: Flowers May to October; panicles 4 to 16 inches long, 2 to 10 inches wide, primary branches compound, terminating in groups of 1 to 5 spikelet pairs; disarticulation usually beneath the sessile spikelets, sometimes also beneath the pedicelled spikelets; sessile spikelets 3/16 to 1/2 inch long and less than 1/8 inch wide; calluses blunt; glumes hard, shiny, appressed pubescent; upper lemmas unawned, or with a geniculate, twisted awn to 1/2 inch; pedicelled spikelets, 1/8 to 1/4 inch long; glumes membranous to leathery, unawned; each fertilized sessile spikelet produces a single grain.

Habitat

Cultivated and disturbed or degraded moist sites in meadow, grassland, and woodland communities, and roadsides within elevations that generally range below 8,000 feet.

Propagation/Phenology

Reproduces primarily by fast-growing rhizomes that produce new plants; one plant can produce up to 295 feet of rhizomes in a single season.

Comments

Native to the Mediterranean region; Johnsongrass grows rapidly, is highly competitive, and can be difficult to control; plants can rapidly develop colonies.This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Johnsongrass inflorescence
© JC

Johnsongrass spikelets
© BR

Johnsongrass plants (right)
© CTB

Johnsongrass leaf-collar region
© OSWL

Jointed Goatgrass

Aegilops cylindrica Host (Grass family, Poaceae)

Description

Mostly erect, winter (cool-season) annual grass closely related to and resembling winter wheat, 5-1/2 to 19-1/2 inches tall, with a tufted appearance; roots are fibrous; reproduces by seed.

Plants: Culms erect, branching at the base, spreading, or abruptly bent near the base; blades flat, 1-1/8 to 6 inches long and about 1/16 to 3/16 inch wide; lower surface and sometimes upper surface sparsely covered with fine hairs; sheaths open; ligule membranous, less than 1/16 inch long, with the upper margins finely fringed; auricles about 1/16 inch long, ciliate, with hairs less than 1/8 inch long.

Inflorescence/Spikelet/Floret: Flowers May to June; inflorescence is a narrow, cylindrical spike 7/8 to 4-3/4 inches long, disperses as a unit at maturity, but ultimately breaks apart into joints; joints cylindrical, with blunt ends; spikelets 1 per node, 3/8 to 1/2 inch long, alternate, laying flat against and fitting into a groove in a zig-zag rachis; 2 to 5 florets/spikelet, the lower 2 usually fertile; glumes 1/4 to 3/8 inch long, mostly 6 to 9 nerves, awned, awns of lower glumes acute or tapered, less than 3/4 inch long, awns of upper glumes 1-3/16 to 3-1/8 inches long; lemmas about 3/8 inch long, 5 to 7 nerves, awns of lower lemmas about 3/4 inch long, awns of the upper lemmas 1-3/16 to 2-3/4 inches long; awns of both glume and lemma awns are flanked by two teeth as well as being stiff, sharp, and minutely barbed; caryopses about 1/4 inch long, oblong, reddish to light brown, grooved, with short hairs at the apex, and adhering to the lemma and palea.

Habitat

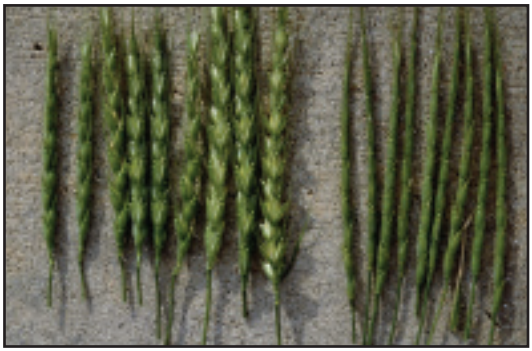
Cultivated and disturbed or degraded dry sites in grassland and woodland communities, and roadsides within elevations that generally range from 5,300 to 7,000 feet.

Propagation/Phenology

Reproduces by seed; one plant produces about 130 seeds, but isolated plants can produce as many as 3,000 seeds; some seeds can remain dormant for 2 or more years.

Comments

Native to the Mediterranean region and central Asia; jointed goatgrass can hybridize with winter wheat. Arizona prohibited/restricted noxious weed and New Mexico Class C noxious weed.



Jointed goatgrass inflorescences (right) compared to wheat inflorescences (left)
© USDA 1

Jointed goatgrass leaf-collar region (above)
© SD

Jointed goatgrass inflorescences (above)
© SD

Jointed goatgrass seeds (right)
©SD

Lehmann Lovegrass

Eragrostis ***lehmanniana*** **Nees (Grass family, Poaceae)**

Description

Lehmann lovegrass is an introduced, warm-season, perennial bunchgrass growing from 18 to 24 inches in height; its bunch habit is somewhat open in that individuals do not form a compact crown with numerous stem bases; furthermore, although more or less erect, some stems are procumbent and these often root at the nodes; this often results in somewhat continuous stands where individuals are difficult to identify.

Plants: Erect culms erect, commonly geniculate, sometimes rooting at the lower nodes, glabrous; leaf sheaths sometimes shortly silky pilose near the bottom, hairs less than 1/16 inch long, sparsely hairy near the top, hairs less than 1/8 inch long; ligules very short, ciliate; leaf blades 3/4 to 4-5/8 inches long, less than 1/8 inch wide, flat to rolled inward, glabrous.

Inflorescence/Spikelet/Floret: Flowers July to October; inflorescence an open panicle, 2-3/4 to 7 inches long, 3/4 to 3-1/8 inches wide, oblong, open; primary branches 3/8 to 3-1/8 inches long, appressed or diverging; spikelets 3/16 to 9/16 inch long, less than 1/16 inch wide, linear-lanceolate, leaden to straw-colored, with 4 to 14 florets; glumes oblong to lanceolate, membranous; both lower and upper glumes less than or equal to 1/8 inch long; lemmas also less than 1/8 inch long, ovate, membranous, with an acute to obtuse tip, awnless, lateral nerves are inconspicuous.

Habitat

Cultivated and disturbed or degraded sites on sandy flats and on calcareous slopes in desert grassland, semidesert grassland, and woodland communities, and roadsides within elevations that generally range from 3,500 to 4,000 feet.

Propagation/Phenology

Reproduces by seed; prolific and early seed production is common in Lehmann lovegrass stands; it is also weakly stoloniferous.

Comments

Native to southern Africa; if Lehmann lovegrass stands occur near burned sites, there is high potential for establishment; it is a strong competitor, especially after disturbance, this species can exclude native recovery; in addition, it is more flammable and fire tolerant than many native species, altering fire frequency and intensity in invaded systems. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Lehmann lovegrass inflorescences
© JMD

Lehmann lovegrass spikelets
© JMD

Lehmann lovegrass leaf-collar region (below)
© JMD

Lehmann lovegrass infestation
© JMR

Mediterranean Grass

Schismus barbatus (Loefl. ex L.) Thell. (Grass family, Poaceae)

Description

Mediterranean grass is a very short winter annual bunchgrass. It produces dense, low, leafy growth in the fall. Spring growth starts earlier than most other annual grasses. It does not have creeping stolons or rhizomes; however, it has an extensive fibrous root system and tillers profusely.

Plants: Weak culms 1/2 to 10-5/8 inches tall; auricles absent; ligules of hairs less than 1/16 inch long; leaf blades 1-3/16 to 5-7/8 inches long, less than 1/16 inch wide, lower surfaces glabrous or scabrous, upper surfaces scabrous, sparsely long pubescent near the ligules.

Inflorescence/Spikelet/Floret: Flowers April to June; inflorescence is a dense raceme panicle, 3/8 to 3 inches long; spikelets 5/32 to 5/16 inch long; lower glumes 5/32 to 1/4 inch long, exceeded by the uppermost florets; upper glumes slightly shorter than the lower; lemmas 1/16 to 3/32 inch long, with appressed pubescence between the nerves, or glabrous and with spreading hairs on the margins, lobes as wide as or wider than long, acute to obtuse; paleas of the lower florets in the spikelets as long as or longer than the lemmas.

Habitat

Cultivated and disturbed or degraded sites in desert and semidesert grassland communities and roadsides within elevations that generally range below 5,000 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to Eurasia; spikelet morphology is used to separate S. arabicus and S. barbatus. In S. arabicus the apical lobes of the lemma gradually taper to sharp, narrow points and are 30 to 50 percent of the lemmas' total length, whereas in S. barbatus the lobes are wider and have broadly pointed to rounded points that are 15 to 25 percent of the lemmas' total length. In S. arabicus the palea

does not generally extend beyond the base of the opening on the lemma, whereas in S. barbatus the palea extends beyond the base of the opening and may be as long as the lemma lobes. The length of the glumes in the terminal spikelet of the inflorescence is generally less than 1/4 inch in S. arabicus and greater than 1/4 inch in S. barbatus. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Mediterranean grass florets
© SH

Mediterranean grass inflorescences
© RO

Mediterranean grass plant(s)
© JMD

Mediterranean grass leaf collar region
© JMD

Quackgrass

Elymus repens (L.) Gould (Grass family, Poaceae)

Description

Quackgrass is an erect, sometimes tufted cool-season perennial to 47-1/4 inches tall, with extensive yellowish rhizomes.

Plants: Culms 12 to 47-1/4 inches tall; leaves sometimes somewhat basally concentrated; leaf sheaths pilose or glabrous at or near point of attachment; both auricles and ligule less than 1/32 inch long; leaf blades 1/4 to 3/8 inch wide, usually flat, lower surfaces glabrous or sparsely pilose, upper surfaces usually sparsely pilose over the veins, sometimes glabrous, veins smooth, widely spaced, primary veins prominent, separated by the secondary veins.

Inflorescence/Spikelet/Floret: Flowers May to September; inflorescence is a spike, 2 to 8 inches long, less than 3/8 inch wide, usually with 1 spikelet per node; spikelets 3/8 to 1-1/16 inches long, appressed to ascending, with 4 to 7 florets; disarticulation usually below the glumes, the spikelets falling intact; glumes oblong, glabrous, keeled distally, keels inconspicuous and smooth proximally, scabrous and conspicuous distally, lateral nerves inconspicuous, hyaline margins present in the upper half, apices acute, unawned or awned to 1/8 inch; lower glumes 5/16 to 7/16 inch long, 3 to 6 nerved; upper glumes 9/32 to 15/32 inch long, 5 to 7 nerved; lemmas 5/16 to 15/32 inch long, glabrous, mostly smooth, unawned or with a straight awn less than 3/8 inch long; paleas 9/32 to 3/8 inch long, keels ciliate from half to almost the entire length, apices emarginate, truncate, or rounded.

Habitat

Disturbed or degraded sites in grasslands, woodlands, and forest communities, and roadsides within elevations that generally range from 6,700 to 8,500 feet.

Propagation/Phenology

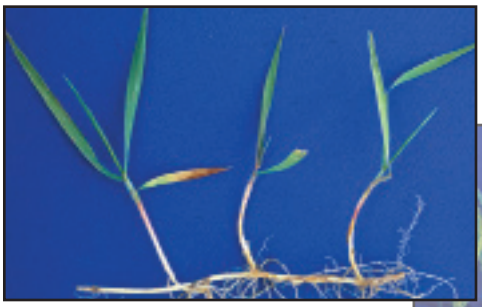
Reproduces vegetatively from rhizomes and by seed; rhizomes tolerate considerable desiccation.

Comments

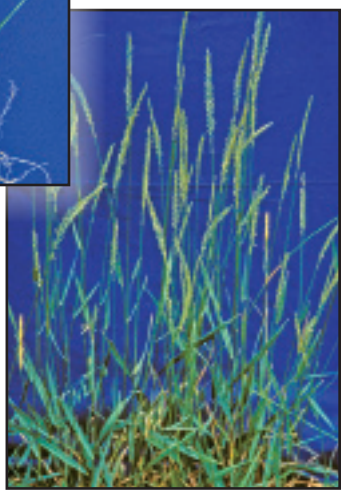
Native to Eurasia; quackgrass is highly competitive and very drought tolerant; seeds can remain viable up to 4 years. Seedlings can emerge from soil depths of up to 4 inches; Arizona restricted noxious weed and New Mexico Watch List species.

Quackgrass leaf collar region
© SD

Quackgrass inflorescence
© OSWL



Quackgrass plants and rhizomes
© SD



Quackgrass plant(s)
© SD

Ravennagrass

Saccharum ravennae (L.) L. (Grass family, Poaceae)

Description

Ravennagrass is a tall, erect, warm-season, perennial, clump-forming grass, 9 to 13 feet tall and 4 to 6 feet wide, from a network of rhizomes; long blades extend up and arch from the center, with bamboo-like flowering canes emerging from the center.

Plants: Culms 6-1/2 to 13 feet tall, culms, nodes and sheaths glabrous; auricles absent; ligules less than 1/16 inch long; gray-green blades 19-1/2 to 60 inches long, 3/16 to 1 inch wide, glabrous, with a single white stripe down the middle of each.

Inflorescence/Spikelet/Floret: Flowers September to October; inflorescence is a plume-like panicle of spikelets covered in white or pale-colored silky hairs; supporting stalks 15-3/4 to 31-1/2 inches long, glabrous; panicles lanceolate, main axis 11-7/8 to 27-9/16 inches long, glabrous; primary branches 2-3/8 to 7-7/8 inches long, appressed or spreading; branch internodes less than 1/16 inch long; straw-colored sessile spikelets 1/4 inch long or less, and less than 1/16 inch wide; white callus hairs 1/4 inch long or less; lower glumes smooth, 4- to 5-nerved; upper glumes 3-nerved; lower lemmas less than 3/16 inch long, 1-nerved; upper lemmas subequal to the lower lemmas, without nerves, entire; awns less than 3/16 inch long, flat, straight or curved at the base; pedicellate spikelets similar to sessile spikelets.

Habitat

Established in moist places such as ditches, stream and riverbanks, and flood plains, growing best in well drained soils where abundant moisture is available; within elevations that generally range below 7,000 feet.

Propagation/Phenology

It reproduces through copious production of seed and from a network of rhizomes.

Comments

Native to the Mediterranean region; ravennagrass grows rapidly, is highly competitive, and can be difficult to control; more cold tolerant than giant reed, crimson fountaingrass, or Uruguayan pampas grass. New Mexico Class A noxious weed.

Ravennagrass inflorescence
© JMD

Ravennagrass leaf collar region
© JMD

Ravennagrass plants
© JMD

Ravennagrass young plants
© JMD

Red Brome

Bromus rubens L. (Grass family, Poaceae)

Description

Red brome is a tufted, cool-season, annual bunchgrass commonly found growing on shallow dry soil or poor textured, clayey soil; it becomes extremely competitive with other grasses and displaces native species.

Plants: Red brome is a tufted, cool-season, annual bunchgrass with erect or ascending culms; characteristically reaching a height of 4 to 28 inches; leaf sheaths and culms are softly pubescent to pilose; auricles are absent; ligule is less than 1/8 inch long, pubescent, obtuse, lacerate; blades are flat, less than 3/16 inch wide and up to 6 inches long.

Inflorescence/Spikelet/Floret: Flowers March to May; inflorescence is an erect, dense panicle with a purplish to reddish-brown tinge, 3/4 to 4 inches long and 3/4 to 2 inches wide; spikelets 1 to 2 per node, 11/16 to 1 inch long, densely crowded, moderately laterally compressed, with 4 to 8 florets; glumes are pilose with hyaline margins, awnless; lower glumes 3/16 to 5/16 inch long, 1- to 3-nerved; upper glumes 5/16 to 1/2 inch long, 3- to 5-nerved; lemmas 3/8 to 5/8 inch long, linear-lanceolate in shape, pubescent to pilose, 7-nerved, rounded over the midnerve, margins are hyaline, tips acuminate, teeth less than 1/8 inch long; awns 5/16 to 13/16 inch long, straight, reddish, arising below the lemma tip.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, chaparral, woodland, and riparian communities, and roadsides within elevations that generally range below 7,200 feet.

Propagation/Phenology

Reproduces by seed with an average of 76 seeds per plant in natural populations; unlike native annuals, red brome does not produce dormant seed and does not maintain a soil seed bank.

Comments

Native to southern and southwestern Europe; red brome initiation and establishment are a direct response to fall rains; initial growth is relatively slow, followed by a rapid increase in vegetative growth coinciding with warming spring temperatures. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Red brome immature inflorescence
© JMR

Red brome mature inflorescence
© JMR

Red brome infestation (left)
© JMR

Red brome plants (right)
© JMR

Rescuegrass

Bromus catharticus Vahl (Grass family, Poaceae)

Description

Rescuegrass is a loosely cespitose or tufted cool-season annual, biennial, or perennial bunchgrass. In areas that have hot, dry summers and severe winter temperatures, it grows as an annual. It does not have creeping stolons or rhizomes; however, it has an extensive fibrous root system and tillers profusely.

Plants: Culms 19-1/2 to 47 inches tall, stout, solitary, erect, or geniculately ascending; leaf sheaths glabrous or densely pubescent; auricle absent; ligules less than 1/8 inch long, glabrous or pilose, obtuse, lacerate to erose; blades up to 1-1/2 to 12 inches long and 1/8 to 3/8 inch wide, flat, glabrous, or hairy on both surfaces.

Inflorescence/Spikelet/Floret: Flowers March to June; panicles 3-1/2 to 11 inches long, usually open, erect, or nodding; lower branches shorter than 4 inches, 1 to 4 per node, spreading or ascending, with up to 5 spikelets variously distributed; spikelets 5/8 to 1-1/2 inches long, shorter than at least some panicle branches, elliptic to lanceolate, strongly laterally compressed, not crowded or overlapping, with 4 to 12 florets; glumes smooth or scabrous, glabrous or pubescent, lower 1/4 to 1/2 inch long, 5 to 9 nerves, upper 5/16 to 5/8 inch long, 7 to 11 nerves, shorter than the lowest lemma; lemmas 7/16 to 3/4 inch long, lanceolate, laterally compressed, strongly keeled, usually glabrous, sometimes pubescent, smooth or scabrous, 9 to 13 nerves, nerves often raised and riblike, margins sometimes conspicuous, hyaline, whitish or partly purplish, apices entire or toothed, teeth acute, shorter than 1/16 inch; awns absent or to 3/8 inch.

Habitat

Cultivated and disturbed or degraded sites in desert and semidesert grassland communities, and roadsides within elevations that generally range below 4,500 feet.

Propagation/Phenology

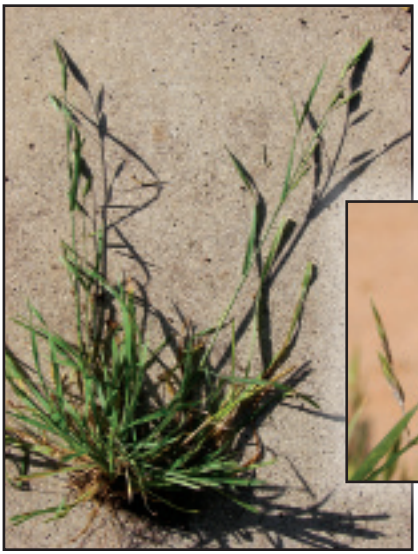
Reproduces by seed.

Comments

Native to South America; rescuegrass has been widely introduced into the southern half of the U.S. as a forage crop. Rescuegrass is able to survive in a variety of different habitats and can tolerate cold temperatures and drought conditions. These characteristics make it difficult to manage. Rescuegrass has excellent forage quality. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Rescuegrass spikelets
© F&KS

Rescuegrass leaf collar region
© JMD



Rescuegrass plant(s) (left)
© F&KS

Rescuegrass inflorescence
© PA

Ripgut Brome

Bromus diandrus Roth (Grass family, Poaceae)

Description

Ripgut brome is a loosely cespitose or tufted annual cool-season bunchgrass. It produces dense, low, leafy growth in the fall. It does not have creeping stolons or rhizomes; however, it has an extensive fibrous root system and tillers profusely.

Plants: Culms 7-7/8 to 35-3/8 inches tall, erect or decumbent, puberulent below the panicle; leaf sheaths softly pilose, often with retrorse or spreading hairs; auricles absent; ligules less than 1/8 inch long, obtuse, lacerate or erose; blades 1-3/8 to 14-3/4 inches long, less than 3/8 inches wide, both surfaces pilose.

Inflorescence/Spikelet/Floret: Flowers April to June; inflorescence is a panicle, 5-1/8 to 14-3/4 inches long, 3/8 to 4-3/4 inches wide, erect to spreading; panicle branches 3/8 to 2-3/4 inches long, stiffly erect to ascending or spreading, with 1 or 2 spikelets; spikelets 1 to 2-3/4 inches long, sides parallel or diverging from the center, moderately laterally compressed, with 4 to 11 florets per spikelet; glumes smooth or scabrous, margins hyaline, lower 3/4 to 1-3/8 inches long, 1 to 3 nerves, upper 3/4 to 1-3/8 inches long, 3 to 5 nerves; lemmas 3/4 to 1-3/8 inches long, linear-lanceolate, scabrous, 7 nerved, rounded over the mid-nerve, margins hyaline, apices bifid, acuminate, teeth less than 3/16 inch long; awns 1-3/16 to 2-9/16 inches long, straight, arising less than 1/16 inch below the lemma apices.

Habitat

Cultivated and disturbed or degraded sites in desert and semidesert grassland communities, and roadsides within elevations that generally range from 3,200 to 4,600 feet.

Propagation/Phenology

Reproduces by seed.

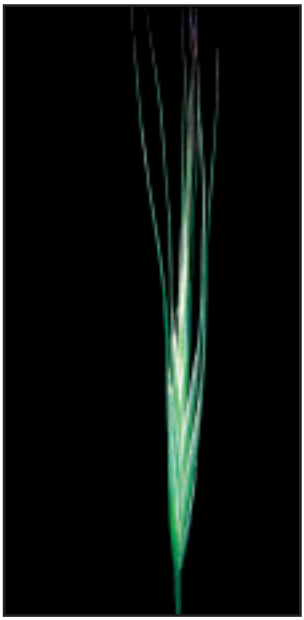
Comments

Native to southern and western Europe; the common name "ripgut brome" suggests possible damage to animals if they consume the sharp, long-awned florets of this species. Ripgut brome may suppress the growth of native plants. Bromes are known to cause hay fever

and asthma. Ripgut brome has poor forage quality. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Ripgut brome spikelets
© F&KS

Ripgut brome leaf collar region
© JMD



Ripgut brome spikelet
© JMD

Ripgut brome plant(s)
© F&KS

Southern Sandbur

Cenchrus echinatus L. **(Grass family, Poaceae)**

Description

Warm-season, tufted, annual grass arising from a geniculate base; roots are fibrous, shallow, occasionally rooting at the nodes, from 7-1/2 to 40 inches tall; with loose spikes of spiny burs at maturity.

Plants: Loosely tufted; culms branched, often abruptly bent near base; leaf sheaths open, flattened, glabrous, margins narrowly membranous, sometimes lined with a few long hairs; collar narrow, lighter in color; blades flat, sometimes folded, appear glabrous, but are rough with very short hairs; blades 1/8 to 3/8 inch wide and 2-3/8 to 7-7/8 inches long; upper surfaces of blade bases often sparsely covered with long, soft hairs; ligules consist of a fringe of hairs less than 1/16 inch long; often there is a tuft of hairs; lower stems often maroon at maturity.

Inflorescence/Spikelet/Floret: Flowers July to September; inflorescences terminal, spike-like panicles of highly reduced branches termed fascicles (burs), 1 to 4-3/4 inches long; burs 3/16 to 3/8 inch long and less than 1/4 inch wide, consisting of 1 to 2 series of many stiff, partially fused, sharp bristles surrounding 1 to 4 spikelets; outer bristles 10 to 20, if present, in 1 or more whorls, round or flattened, less than 1/8 inch long; inner bristles usually strongly flattened, fused at least at the base and forming a disk, frequently to more than half their length; disarticulation at the base of the burs; spikelets 2 to 3 per bur, 3/16 to 1/4 inch long, sessile, with 2 florets; lower florets usually sterile; upper florets bisexual; lower glumes ovate, scabrous, glabrous, 1-nerved, acute to acuminate, less than 1/8 inch long; upper glumes 3/16 to 1/4 inch long, 3- to 7-nerved; lower and upper lemmas ovate, less than 1/4 inch long, obscurely nerved, acuminate.

Habitat

Cultivated and disturbed or degraded sandy or gravelly sites within elevations that generally range from 3,500 to 4,500 feet.

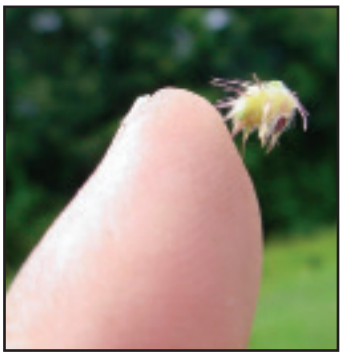
Propagation/Phenology

Reproduces by seed; seedlings emerge in spring or early summer, and growth is rapid under moist conditions.

Comments

Native to the southern United States, Mexico, Central and South America; southern sandbur is an aggressive colonizer. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant. Arizona prohibited/regulated noxious weed.

Southern sandbur inflorescence
© F&KS



Southern sandbur seed bur
© RO

Southern sandbur plants (above)
© F&KS

Southern sandbur fiborous roots (below)
© RO

Tall Fescue

Schedonorus phoenix (Scop.) Holub (Grass family, Poaceae)

Description

Tall fescue is a robust, cool-season perennial, comparatively deep rooted bunchgrass with short rhizomes.

Plants: Culms are hollow, erect, 20 to 80 inches tall; leaves convolute in young shoots; auricles ciliate, having at least 1 or 2 hairs along the margins; ligules less than 1/16 inch long; leaf blades 4-3/8 to 12 inches long, 5/32 inch wide.

Inflorescence/Spikelet/Floret: Flowers May to August; inflorescence is a panicle, 4 to 14 inches long, branches at the lowest node usually 2, shorter branch with 1 to 13 spikelets, longer branch with 3 to 19 spikelets; spikelets 5/16 to 5/8 inch long, 3/32 to 1/8 inch wide, 3 to 9 florets; lower glumes 1/8 to 7/32 inch long; upper glumes 3/16 to 3/8 inch long; lemmas 5/32 to 7/16 inch long, usually scabrous or covered with stiff, short hairs, at least near the end, rarely smooth, awns absent or to 5/32 inch long, terminal or attached up to just below the apices; paleas slightly shorter than to slightly longer than the lemmas.

Habitat

It occurs in grazed woods, along roads, ditches, and railroad tracks, in fallow and abandoned fields, meadows, and marshes. It is a weed of cultivated areas and is found in moist, disturbed places within elevations that generally range from 4,000 to 9,000 feet.

Propagation/Phenology

Reproduces by seed and increases vegetatively; spreads primarily by seed to form dense, solid stands. Tall fescue can produce roughly 206,000 seeds per pound.

Comments

Native to Europe and central Asia; tall fescue is a long lived, aggressive perennial. Tall fescue's competitive ability and persistence is increased by the allelopathic compounds it produces and may become weedy or invasive in some regions or habitats and can displace desirable vegetation. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Tall fescue spikelets
© JMD

Tall fescue plant(s)
© JHM&TB

Tall fescue leaf collar region
© JHM&TB

Tall fescue spikelets in anthesis
© JHM&TB

Uruguayan Pampas Grass

Cortaderia selloana (Schult. & Schult. f.) Asch. & Graebn.
(Grass family, Poaceae)

Description

Very large, cespitose, perennial, warm-season bunchgrass, very large to about 6-1/2 to 23 feet tall; leaves are narrow 1/2 to 3/4 inch wide but up to 6-1/2 to 10 feet long; grows in large clumps about 12 feet in diameter, with many individual plants within; deep green leaves are razor sharp, capable of cutting just by rubbing against them.

Plants: Culms 6-1/2 to 23 feet tall, erect, densely clumped; leaves primarily basal; sheaths open, often overlapping, glabrous or hairy; auricles absent; ligules of hairs; bluish-green blades from 6-1/2 to 10 feet long, flat to folded, 1 to 3 inches wide, arching, edges usually sharply serrate.

Inflorescence/Spikelet/Floret: Flowers July to August; inflorescences terminal, white to pinkish, plume-like panicle, 12 to 51 inches long, subtended by a long, ciliate bract; branches stiff to flexible; spikelets somewhat laterally compressed, usually unisexual, sometimes bisexual, with 2 to 9 unisexual florets; disarticulation above the glumes and below the florets; glumes unequal, nearly as long as the spikelets, hyaline, 1-nerved; calluses pilose; lemmas 3- to 7-nerved, long-acuminate, bifid and awned, or entire and sharp-pointed; lemmas of female and bisexual florets usually long-silken; lemmas of staminate florets less hairy or glabrous; lodicules 2, wedge-shaped and irregularly lobed, ciliate; paleas about half as long as the lemmas, 2-nerved.

Habitat

Established in moist places such as ditches, stream and riverbanks, and flood plains, growing best in well drained soils where abundant moisture is available; within elevations that generally range below 7,000 feet.

Propagation/Phenology

Reproduces by seed and vegetatively; lateral roots can spread to 13 feet in diameter and 11-1/2 feet in depth; one plant can produce over 1 million seeds during its lifetime.

Comments

Native to South America; once established, roots of a single plant can occupy a soil area of about 1,100 square feet; Uruguayan pampas grass grows rapidly, is highly competitive, and can be difficult to control. New Mexico Watch List species.

Uruguayan pampas grass female plants
© JMD

Uruguayan pampas grass female inflorescences
© JV

Uruguayan pampas grass inflorescences (male right, female left)
© JMD

Uruguayan pampas grass leaf collar region
© JMD

Weeping Lovegrass

Eragrostis ***curvula*** **(Schrad.) Nees (Grass family, Poaceae)**

Description

Weeping lovegrass is a large, rapidly growing warm-season perennial bunchgrass, 18 to 75 inches tall; the many long, narrow leaves emerging from a tight tuft are pendulous, with the tips almost touching the ground; the drooping leaf characteristic gives rise to the name "weeping" lovegrass.

Plants: Erect culms are glabrous or glandular; leaf sheaths with scattered hairs to 3/8 inch long inside the upper margin and along the collar; ligules less than 1/16 inch long; leaf blades 4-3/4 to 25-1/2 inches long, not more than 1/8 inch wide, flat to rolled inward, stiff and finely pointed; lower surfaces glabrous, upper surfaces with scattered hairs, hairs to 1/4 inch long.

Inflorescence/Spikelet/Floret: Flowers July to October; inflorescence an open panicle, 6-5/16 to 15-3/4 inches long and 1-9/16 to 3-1/8 inches wide; primary branches 1-3/16 to 5-1/2 inches long, diverging; spikelets 1/8 to 3/8 inch long, less than 1/16 inch wide, linear-lanceolate, leaden, yellowish to gray-green in color, with 3 to 15 florets; glumes lanceolate, hyaline; both lower and upper glumes less than or equal to 1/8 inch long; lemmas also less than 1/8 inch long, ovate, membranous, with an acute tip, awnless, lateral nerves are conspicuous.

Habitat

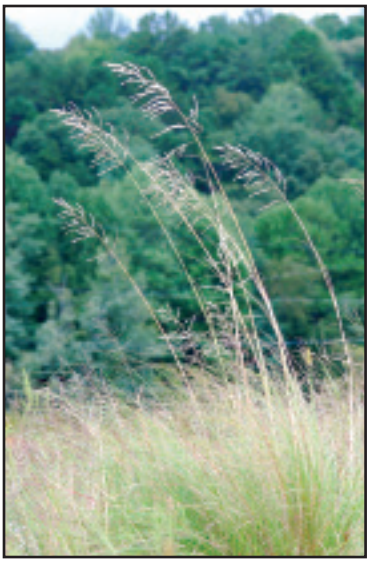
Cultivated and disturbed or degraded sites in meadows, grasslands, and at the margins of chaparral, woodland, forest communities, and roadsides within elevations that generally range from 6,000 to 8,000 feet.

Propagation/Phenology

Reproduces by seed; prolific and early seed production is common in weeping lovegrass stands.

Comments

Native to southern Africa; weeping lovegrass can establish from seed on burned sites. Although weeping lovegrass seed dispersal is limited, if stands occur near burned sites, there is high potential for establishment. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.



Weeping lovegrass inflorescences
© JHM

Weeping lovegrass inflorescences
© JHM

Weeping lovegrass leaf collar region
© JMD

Weeping lovegrass bunchgrass
© F&KS

Wild Oat

Avena fatua L. (Grass family, Poaceae)

Description

Wild oat is an erect, cool-season annual bunchgrass with open branched, nodding flower clusters. It does not have creeping stolons or rhizomes; however, it has an extensive fibrous root system.

Plants: Culms 3-1/8 to 63 inches tall, prostrate to erect when young, becoming erect at maturity; basal leaf sheaths with scattered hairs, upper leaf sheaths glabrous; ligules less than 1/8 to 1/4 inch long, acute; blades 4 to 18 inches long, 1/8 to 9/16 inch wide, scaberulous.

Inflorescence/Spikelet/Floret: Flowers March to June; inflorescence is a panicle, 2-3/4 to 16 inches long, 2 to 8 inches wide, open, nodding; spikelets 3/4 to 1-1/4 inches long with 2, sometimes 3 florets, disarticulation occurs beneath each floret; glumes unequal, 3/4 to 1-1/4 inches long, 9 to 11 nerved; calluses bearded with hairs to 1/4 the length of the lemmas; lemmas 9/16 to 7/8 inch long, usually dense with stiff hairs below mid-length, varying to sparsely stiff haired or glabrous, nerves not extending beyond the apices; apices usually bifid, teeth less than 3/32 inch long; awns 7/8 to 1-5/8 inches, arising in the middle third of the lemmas.

Habitat

Cultivated and disturbed or degraded sites in desert and semidesert grasslands and woodland communities, and roadsides within elevations that generally range from 2,500 to 7,200 feet.

Propagation/Phenology

Reproduces by seed. Wild oats can produce roughly 19,400 seeds per pound.

Comments

Native to Europe and central Asia; wild oats has excellent forage quality. Wild oats is known to cause hay fever and asthma, and can cause nitrate accumulation and photosensitivity. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Wild oat spikelets
© SD

Wild oat leaf collar region
© RO

Wild oat plant(s)
© SD

Wild oat floret
© SD

Siberian elm © RO

African Sheepbush

Pentzia incana (Thunb.) Kuntze (Aster family, Asteraceae)

Description

African sheepbush is a 1 to 1-1/2 foot tall, multiple branched, perennial shrub with grayish leaves covered with matted hairs. Stems arch downward and can root where the nodes touch the soil.

Leaves: Leaves opposite or fascicled, once pinnatifid, tri-fid at the apex, 3/8 to 3/4 inch long, marked with pits, revolute margins, and covered with grayish matted hairs; aromatic with a pineapple scent.

Flowers: Flowers April to September; flowering peduncles slender, 3/4 to 1-3/16 inches long, proximally bracteate, bracts remote, appressed, leaflike; small yellow discoid flowers are in terminal heads 3/16 inch in diameter, enclosed by graduated phyllaries.

Fruit: Fruits are 5-angled achenes with cup-shaped, scarious crowns of scales; seeds are greyish white, less than 1/16 inch long; there are many on a single flower head.

Habitat

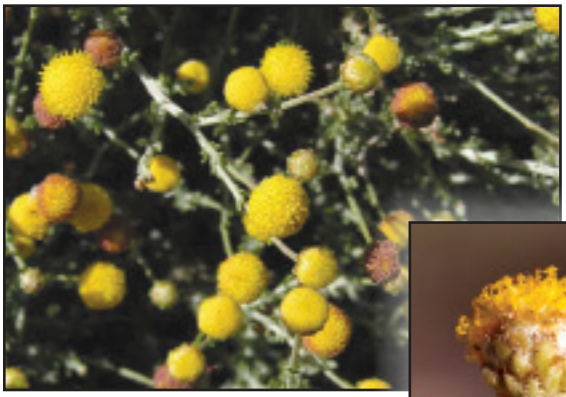
African sheepbush occurs in dry disturbed sites such as waste places, pastures, and along roadsides within deserts, semidesert grasslands, chaparral, piñon-juniper woodlands, and oak scrub within elevations that generally range below 5,300 feet.

Propagation/Phenology

Reproduces by seed and by rooting at nodes on branches that come in contact with the soil.

Comments

Native to southern Africa; African sheepbush was introduced in Arizona from southern Africa by the USDA NRCS. It is valued in its native region as a browse plant. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.



African sheepbush flower heads
© PF

African sheepbush
flower head
© RS

African sheepbush
plant
© PF

African sheepbush
foliage
© PF

African Sumac

Rhus lancea L. f. (Sumac family, Anacardiaceae)

Description

Slow growing single or multi-stemmed, evergreen tree, 15 to 30 feet tall; has a graceful, weeping form and dark, fissured bark; older specimens, the dark gray bark has fissures that show beautiful reddish and orange mahogany color hues. Branches are reddish to brownish-gray.

Leaves: Alternate, palmately compound in groups of 3 leaflets (tri-foliate) 2 to 5 inches long; petioles 1 to 1-3/16 inches long; leaflets subsessile, narrowly lanceolate, entire to slightly serrate, 1-9/16 to 4-15/16 inches long and 3/16 to 3/8 inch wide, entire, leathery, dark shiny green above, pale-green beneath, glabrous; tips pointed; bases narrowly, margins smooth.

Flowers: Flowers June to September; dioecious; female plants bear small (less than 1/8 inch long), greenish-white flowers in panicles; open panicles 3/4 to 3-1/2 inches long (shorter than the leaves).

Fruit: Small (up to 3/16 inch diameter), round, slightly flattened yellow or red wrinkled drupes grow in clusters; fruit contains small black seeds.

Habitat

Cultivated and disturbed or degraded well drained sites in woodlands, grassland margins, and riparian communities within elevations that generally range below 2,000 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to southern Africa; very drought tolerant once established. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

African sumac bark and foliage
© X

African sumac foliage and flowers
© B&LC

African sumac flowers
© X

African sumac tree
© G&AD

Camelthorn

Alhagi maurorum Medik. (Pea family, Fabaceae)

Description

Spiny, highly branched, green perennial shrub, 1-1/2 to 4 feet tall, with simple, alternate, wedge-shaped leaves; stems are striate with slender spines 1/4 to 1-3/4 inches long; with an extensive root system; plants spread rapidly by clonal vegetative reproduction from vigorous rhizomes.

Leaves: Leaves alternate, sparse, simple, thick, leathery, elliptic or obovate in shape, and 5/16 to 1-3/16 inches long, and 1/8 to 1/2 inch wide; petioles less than 1/8 inch long and stipules about 1/16 inch long; upper leaf surfaces glabrous, sometimes sparsely hairy, and covered with minute red dots; lower leaf surfaces are sparsely to moderately covered with hairs.

Flowers: Flowers June to July; 2 to 6 short-stalked flowers are produced alternately along each thorn branchlet axis; flowers small, pea-like, with magenta to pink petals about 5/16 inch long; occurring on spine-tipped branches along the upper portion of the plant; sepals persistent, fused and cup-like, with small unequal teeth; self-fertilizing.

Fruit: Fruit is a slender, curved, reddish-brown, jointed seedpod, 3/8 to 1-3/16 inches long; constricted between seeds and often tipped with a small spine; seeds 5 to 8, oval, yellowish or greenish-brown with dark mottling or solid dark brown, smooth-textured, about 1/8 inch long, and nearly as wide; both soft- and hard-coated seeds are produced.

Habitat

Cultivated and disturbed or degraded dry or moist sites in meadows, grasslands, and riparian communities within elevations that generally range from 4,500 to 5,000 feet.

Propagation/Phenology

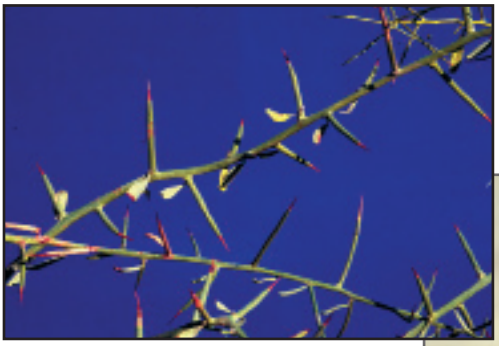
Reproduces mostly by vegetative clones from vigorous rhizomes, occasionally from seed; woody root system can grow more than 6 feet deep and to a distance of 24 feet or more in all directions.

Comments

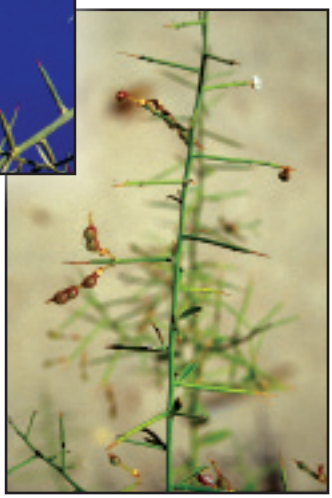
Native to the Mediterranean region and western Asia; once established camelthorn colonies are difficult to control or eliminate. Arizona prohibited/restricted noxious weed, New Mexico Class A noxious weed, and Texas noxious plant.

Camelthorn flowers and leaves
© JMR

Camelthorn plant
© JMR



Camelthorn stems and thorns
© SD



Camelthorn stem, leaves, and fruit
© JMR

Himalayan Blackberry

Rubus armeniacus Focke (Rose family, Rosaceae)

Description

An erect, spreading, or trailing, perennial evergreen shrub reaching heights of 10 feet or more; purplish-red stems are covered with heavy, broad-based prickles 3/16 to 3/8 inch long and the larger stems are distinctly 5-angled; stems grow to a height of about 18 inches or more before they arch over and trail on the ground for up to 30 feet or more; new plants develop where first year stem-nodes touch the ground; this plant forms dense thickets that become impenetrable.

Leaves: Leaves are alternate, palmately compound (3 to 5 leaflets), persistent, 2-3/4 to 7-7/8 inches long; leaflets are oval, 1-1/2 to 3 inches long, dark green above with a heavy white bloom below, margins coarsely serrate; rachis and petiole armed with heavy, recurved prickles.

Flowers: Flowers June to August; white or pale pink flowers on flat-topped panicles of 3 to 20 together on the tips of the second-year side shoots, five broad petalled flowers 3/4 to 1 inch in diameter.

Fruit: The roundish fruit are aggregate, shiny, large, black drupelets from 1/2 inch up to 3/4 inch long, with large succulent drupelets; each drupe includes one seed; the fruit is edible.

Habitat

Cultivated and disturbed or degraded sites in meadows, grasslands, woodlands, and forest communities, and roadsides in practically any kind of soil containing loam, sand, or gravelly material within elevations that generally range from 4,000 to 8,500 feet.

Propagation/Phenology

Reproduces vegetatively or by seed; new stems are capable of rooting; thickets can produce 7,000 to 13,000 seeds per square yard, and good seed crops occur nearly every year.

Comments

Native to Eurasia; among the many native blackberries and raspberries, one can differentiate Himalayan blackberry by the five leaflets and curved spines with wide bases. This blackberry species also has furrowed, angled stems while others are typically round. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Himalayan blackberry flower
© RO

Himalayan blackberry leaves (underside) and prickles (above)
© F&KS

Himalayan blackberry fruit and foliage (left)
© RO

Himalayan blackberry flowers and foliage
© JMR

Lilac Chastetree

Vitex agnus-castus L. (Verbena family, Verbenaceae)

Description

A large, deciduous, multistemmed, irregular to rounded shrub or small tree, from 15 to 20 feet tall, and from 10 to 15 feet in diameter. Twigs are slender, opposite, gray-brown and pubescent, four sided; buds are wedge shaped to rounded and gray-brown. Bark is initially smooth and gray-brown, becoming blocky on older stems.

Leaves: The aromatic leaves are opposite, palmately compound (5 to 7 leaflets), 2 to 6 inches in diameter, leaflets are linear, lance shaped, toothed; typically grey-green to dark green above and lighter on the undersides.

Flowers: Flowers May to September; branched flower clusters 4 to 12 inches long, 1/2 to 1-1/4 inches wide; color ranges from violet to blue to deep purple, 1/4 to 3/8 inch long; slightly curved, funnel-shaped flowers are fragrant.

Fruit: Round, green and fleshy, drying and turning brown, 1/8 inch in diameter, persistent through winter; containing four seeds.

Habitat

Woodlands and dry areas in almost any soil that has good drainage within elevations that generally range below 8,500 feet.

Propagation/Phenology

Reproduces by seed; average 40,000 seeds per pound.

Comments

Native to southern Europe and western Asia. Not only is the tree strikingly beautiful when in full bloom, but it is also fragrant and attracts pollinating bees, and hummingbirds make hungry visits. The leaves also bear a striking resemblance to those of the infamous marijuana or hemp (Cannabis spp. L.) plant. Lilac chastetree has been used for thousands of years for its beneficial effect on the female hormonal system. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Lilac chastetree mature fruit
© HZ

Lilac chastetree foliage
© LR

Lilac chastetree flowers and foliage
© HZ

Lilac chastetree flowering stalk and foliage
© HZ

Russian Olive

Elaeagnus angustifolia L. (Oleaster family, Elaeagnaceae)

Description

Deciduous, usually thorny shrub or small tree to 35 feet tall; stems, buds, and leaves have a dense covering of silvery to rusty scales; at 3 years of age, plants begin to flower and fruit.

Leaves: Leaves are petiolled, alternate, simple, lanceolate to elliptical, 7/8 to 4 inches long and 1/2 to 3/4 inch wide, bright green above, silvery and scaly beneath, margins entire.

Flowers: Flowers June to July; male and female flowers borne on separate plants; very fragrant, silvery, pale yellow, 9/16 to 1-1/16 inch flowers usually arise in the axils of the leaves.

Fruit: Fruit is a yellow-silvery, scaly, oval shaped drupe, 5/16 to 1/2 inch long.

Habitat

Found along streams, fields, ditches, roadsides, and open areas in a variety of soil types and moisture conditions, including bare mineral substrates within elevations that generally range from 4,000 to 7,500 feet.

Propagation/Phenology

Establishment and reproduction of Russian olive is primarily by seed, although some vegetative propagation may also occur; the small cherry-like fruit of Russian olive is readily eaten and disseminated by many species of birds.

Comments

Native to Eurasia; Russian olive can out-compete native vegetation, interfere with natural plant succession and nutrient cycling, and tax water reserves; because Russian olive is capable of fixing nitrogen in its roots, it can grow on bare, mineral substrates and dominate riparian vegetation where overstory cottonwoods have died. New Mexico Class C noxious weed.

Russian olive flowers and foliage
© PWI

Russian olive bark (left)
© PB

Russian olive fruit and foliage (lower left)
© PB

Russian olive tree (lower right)
© CE

Saltcedar

Tamarix spp. L. (Tamarix family, Tamaricaceae)

Description

Deciduous or evergreen shrubs or small trees reaching 5 to 20 feet tall and forming dense thickets; saltcedar are characterized by slender, long branches and gray-green foliage; bark of young trees is smooth and reddish-brown, as the plant ages, the bark becomes brownish-purple, ridged and furrowed.

Leaves: Leaves are small (about 1/16 inch long), scale-like, alternate and overlap one another, on highly branched, slender stems.

Flowers: Flowers March to September; large numbers of pink to white flowers, about 1/16 inch across, appear in a dense mass on 1/2 to 2 inch long spikes at branch tips.

Fruit: Greenish-yellow to pinkish-red capsules, 1/8 to 3/16 inch long, which split into 3 to 5 parts on maturity; seeds are less than 1/16 inch long, with a tuft of fine hairs at one end; the number of seeds per capsule is not constant; seeds are dispersed by wind to new locations.

Habitat

Tamarisk occurs in moist meadow and riparian communities, in drainage washes of natural or artificial water bodies, and in other areas where seedlings can be exposed to extended periods of saturated soil conditions for establishment; can grow on soils with up to 15,000 ppm soluble salt within elevations that generally range below 7,500 feet.

Propagation/Phenology

Reproduces primarily by seed, but root crowns can produce new shoots, especially when severed; seeds are dispersed by wind to new locations; seedlings require extended periods of soil saturation for establishment.

Comments

Native to Eurasia and Africa; heavy infestations of saltcedar are difficult to control; established plants have long roots that can tap deep water tables; absorbs large amounts of water and creates large deposits of salt. New Mexico Class C noxious weed and Texas noxious and invasive plant.

Saltcedar flowers (left)
© JMR

Saltcedar
bush in flower
(right)
© SD

Saltcedar twig and
foliage (left)
© BM

Saltcedar tree
(right)
© JMR

Siberian Elm

Ulmus pumila L. (Elm family, Ulmaceae)

Description

Siberian elm is usually a small to medium sized, often bushy, tree growing 30 to 70 feet tall, with an open crown; trunks up to 32 inches in diameter; leaves are deciduous in cold areas, but semi-evergreen in warmer climates; bark is gray or brown, with shallow furrows at maturity; both the buds and twigs are nearly hairless; tree is short lived in temperate climates, rarely reaching more than 60 years of age.

Leaves: Leaves are simple, alternate generally less than 2-3/4 inches long and 1-3/16 inches wide, with an asymmetrical-oblique base and a coarsely serrated margin, with a pointed tip; glabrous leaf petioles are less than 3/16 inch long, changing from dark green to yellow in autumn.

Flowers: Flowers March to April; flowers are greenish, lack petals, and occur in small tightly drooping clusters of 2 to 5 blossoms; flowers appearing before the leaves.

Fruit: The wind-dispersed fruit develops in a flat, oval membranous wing, pale green samara, 3/8 to 9/16 inch in diameter, notched at the outer end; fruit has one seed that is circular or ovate with a smooth surface; fruit hang in clusters; becoming yellow-cream to tan colored with age.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, and riparian communities, and roadsides on well-drained soils within elevations that generally range below 8,100 feet.

Propagation/Phenology

Reproduces by seed and root suckering; fruits develop quickly and are disseminated by wind, allowing the species to form thickets of hundreds of seedlings in bare ground; seeds germinate readily and seedlings grow rapidly.

Comments

Native to eastern Asia; once established, Siberian elm is extremely difficult to eradicate. New Mexico Class C noxious weed.

Siberian elm
fruit
© USDA2

Siberian elm leaves (above)
© JMR

Siberian elm tree(s)
© RO

Siberian elm
twigs, buds,
and foliage
© RO

Sweet Resinbush

Euryops multifidus (Thunb.) DC. (Aster family, Asteraceae)

Description

Sweet resinbush is a low growing, medium sized, cool-season shrub, usually less than 3 feet tall; the name sweet resinbush comes from the sweet, but disagreeable odor of the flowers and the drops of resin exuded by the woody stems.

Leaves: Foliage is bright green, glabrous, except for woolly tufts of hair in the leaf axils; linear leaves are linear, about 9/16 inch long; with 3 to 6 narrow lobes at the tip, which may look like tiny turkey tracks; has foliage in winter and spring, then sheds its leaves during the dry season.

Flowers: Flowers January to February; yellow flower heads are about 3/8 inch wide on stalks 1 to 6 inches long; leaves and flower heads are mostly clustered at the ends of short branchlets; flower head bracts are slightly fused at the base; when in bloom, hundreds of small, daisy-like flower heads may hide any green leaves.

Fruit: Hawk's eye has fruit with deciduous, soft pappus bristles that have conspicuously long barbs; flowers produce an abundance of seed. The seeds form in star-like clusters of about 10 fruits covered with fine hairs.

Habitat

Semiarid grassland, desert grassland, desert shrub, and desert scrub habitats below the Mogollon Rim in Arizona.

Propagation/Phenology

Reproduces by seed.

Comments

Native to South Africa; creates monocultures, excluding native species. Arizona restricted noxious weed.

Sweet resinbush flowers
© EM

Sweet resinbush flowers
© EM

Sweet resinbush foliage and mature flowers
© HB

Sweet resinbush plant
© HB

Tree of Heaven

Ailanthus altissima (Mill.) Swingle
(Quassia family, Simaroubaceae)

Description

Usually a small to medium sized, fast growing, deciduous tree 40 to 90 feet tall, open canopy spread 35 to 50 feet; trunks up to 36 inches in diameter; few, coarse branches, smooth stems with pale gray thin bark; twigs which are light chestnut brown, especially in the dormant season; all parts of the tree, especially the leaves and flowers, have a nutty or burned nut odor.

Leaves: Leaves evenly pinnately compound, large to 1 to 4 feet in length; alternate and composed of 10 to 41 smaller leaflets, 4 to 8 inches long and 2 to 4 inches wide; each leaflet has one or more glandular teeth along the lower margin; margins are otherwise entire or lacking teeth, ciliate.

Flowers: Flowers April to June; tree of heaven is dioecious, male and female flowers occur on separate plants; flowers occur in large terminal clusters 8 to 16 inches in diameter; flowers are small green to pale yellow, turning bright red to brown when ripe.

Fruit: Fruits grow in clusters of 1-seeded, dry samaras, resembling maple fruits, 1-1/2 inches long, on female trees; flat, twisted, winged fruits each containing a single central seed.

Habitat

Cultivated and disturbed or degraded moist sites in washes, meadows, grasslands, woodlands, and forest communities, and roadsides within elevations that generally range below 6,200 feet.

Propagation/Phenology

Tree of heaven is a fast growing, prolific seed producer; an individual tree can produce as many as 325,000 seeds per year; as well as a persistent stump and root sprouter.

Comments

Native to China; once established, tree of heaven is difficult to control; it also produces chemicals that prevent the establishment of other plant species nearby; plant looks similar to native walnut. New Mexico Class B noxious weed.

Tree of heaven foliage and flowers
© JM

Tree of heaven foliage and fruit
© CB

Tree of heaven bark
© PWI

Tree of heaven plant
© RO

Russian thistle © MEH

Common Cocklebur

Xanthium strumarium L. (Aster family, Asteraceae)

Description

Warm-season annual forb 2 to 4 feet tall and little branched, except for short side stems appearing from the leaf axils; stems round or slightly ribbed; often speckled with purple and have short white hairs scattered across the surface; root system consists of a taproot that is stout and rather woody.

Leaves: The alternate leaves are up to 8 inches long and 6 inches across; cordate or ovate-cordate shaped, with bases that are well rounded or indented and tips that are broad and blunt; margins are shallowly lobed or coarsely toothed, while the upper surface has a sandpapery texture; each leaf has a long petiole that is often reddish or reddish green and about as long as the leaf blade; petioles usually have short white hairs.

Flowers: Flowers July to September; flower heads are small; in the axils of the upper leave; flowers are of two types, male and female flower heads separate; male flower heads about 1/4 inch across, female flower heads about 1-1/2 inches long and 1 inch across; flowers are green.

Fruit: Fruits are a 3/8 to 13/16 inch long, woody bur, with hooked prickles and 2 curved spines at the tip; 2-seeded; dark brown seeds are flattened and pointed at the tips.

Habitat

Cultivated and disturbed or degraded dry sites in meadows, grasslands, woodlands, and chaparral communities, and roadsides within elevations that generally range below 6,300 feet.

Propagation/Phenology

Reproduces by seed; cocklebur is one of nature's original "velcros."

Comments

Native to North America; young seedlings of common cocklebur exude toxic chemicals that can inhibit germination of other species of plants, or kill off their seedlings; individual plants become less toxic as they mature: spiny cocklebur is a closely related and similar species, however, unlike common cocklebur, this weed has the very

distinctive 3-parted spines that arise at the base of each leaf. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Common cocklebur plants
© RV

Common cocklebur flower head
© PW2

Common cocklebur immature fruit and foliage (below)
© RV

Common cocklebur mature fruit
© JS

Eurasian Watermilfoil

Myriophyllum spicatum L.
(Water Milfoil family, Haloragaceae)

Description

Eurasian watermilfoil is an emergent, herbaceous aquatic plant; stems grow to the water surface, usually extending 3 to 10 feet, but as much as 33 feet in length; stems are long, slender, branching, reddish-brown to whitish-pink, hairless, and become leafless toward the base; roots fibrous; often developing on plant fragments; frequently forming dense mats.

Leaves: Grayish-green leaves are 4-whorled, highly dissected, composed of 28 to 48 threadlike divisions about 1/2 to 2 inches long; leaflets give milfoil a feathery appearance that is a distinguishing feature of the plant.

Flowers: Flowers July to August; flowering spikes emerge above the water 2 to 4 inches; flowers are borne in the axis of bracts; are either 4-petalled or without petals.

Fruit: The fruit is a hard, segmented capsule containing 4 seeds.

Habitat

Lakes, ponds, shallow reservoirs, and low energy areas of rivers and streams within elevations that generally range below 4,000 feet.

Propagation/Phenology

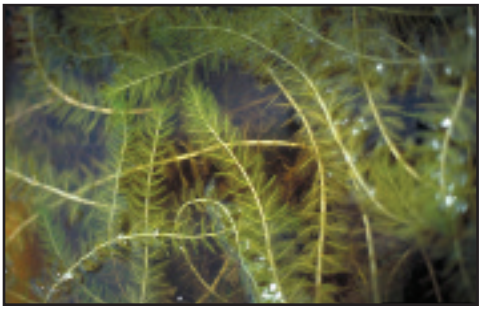
Reproduction is by seed, fragmentation, and winter buds; however, the primary form of regeneration is from rhizomes, fragmented stems, and axillary buds that develop throughout the year.

Comments

Native to Eurasia; Eurasian watermilfoil can form large, floating mats of vegetation on the surface of lakes, rivers, and other water bodies, preventing light penetration for native aquatic plants and impeding water traffic. M spicatum can easily be mistaken for the submersed form of M. aguatic. New Mexico Class A noxious weed and Texas noxious plant.

Eurasian watermilfoil foliage
© RO

Eurasian watermilfoil inflorescence
© LJM



Eurasian watermilfoil plants
© AF

Eurasian watermilfoil infestation
© LJM

Halogeton

Halogeton glomeratus (M. Bieb.) C. A. Mey
(Goosefoot family, Chenopodiaceae)

Description

Erect, highly branched, toxic winter to summer annual with small, fleshy leaves, ranging from a few inches to 19 inches tall; branches often curved at the base, ascending to erect, plants are blue-green, stems usually tinged reddish or purple.

Leaves: Small, fleshy leaves alternate, sessile, dull green to bluish-green, cylindrical, 3/16 to 7/8 inch long, usually less than 1/16 inch wide, broadest at the apex; apex bluntly rounded, tipped with a stiff bristle usually less than 1/16 inch long; blue-green foliage glabrous, except for tufts of long white interwoven hairs in the leaf axils.

Flowers: Flowers June to September; flowers are green and inconspicuous; however, flower clusters are numerous and dense in most leaf axils, with 0 to 3 bractlets less than 1/16 inch long below each cluster.

Fruit: Utricles (thin-walled 1-seeded fruits), usually less than 1/16 inch long, enclosed by sepals; fruits with sepals typically hide stems; utricles contain blackish-brown seeds; seeds are teardrop-shaped, often with 2 points, flattened, usually less than 1/16 inch long.

Habitat

Cultivated and disturbed or degraded alkaline and saline soils in open sites within grassland and woodland communities, and roadsides within elevations that generally range from 4,000 to 6,500 feet.

Propagation/Phenology

Reproduces by seed; plants typically produce enormous quantities of seed, average is roughly 75 seeds per inch of stem; most seeds germinate late fall to early spring in cold winter areas, but some germination can occur year round when conditions become favorable.

Comments

Native to the cold desert regions of Eurasia; halogeton competes poorly with established perennial vegetation. Arizona prohibited/restricted noxious weed and New Mexico Class B noxious weed.

Halogeton flowers
© CS

Halogeton foliage (below)
© BM

Halogeton foliage (left)
© BM

Halogeton
plant (right)
© BM

Kochia

Bassia spp. L. (Goosefoot family, Chenopodiaceae)

Description

Annual warm-season forb with spreading taproot; stems bushy, much branched, 1 to 6 feet tall, 1 to 5 feet in diameter, unusually soft, hairy, round, often reddish-tinged.

Leaves: The simple, alternately arranged leaves are linear to narrowly ovate 1/2 to 2 inches long and 5/16 inch wide, very short petioled or sessile, margins fringed with hairs, upper surface usually smooth, lower usually covered with soft hairs, leaf blades with 3 to 5 conspicuous veins; stems may be green, red tinged, or red depending on age.

Flowers: Flowers July to October; flowers small, greenish, sessile in the axils of the upper leaves and form short, dense, bracted spikes, 3/16 to 3/8 inch long.

Fruit: Kochia is an abundant seed producer; seeds are dull brown, less than 1/16 inch wide and contained in a star-shaped fruit.

Habitat

Cultivated and disturbed or degraded sites in grassland and woodland communities, and roadsides in any type of well drained, uncompacted soil, within elevations that generally range below 8,500 feet.

Propagation/Phenology

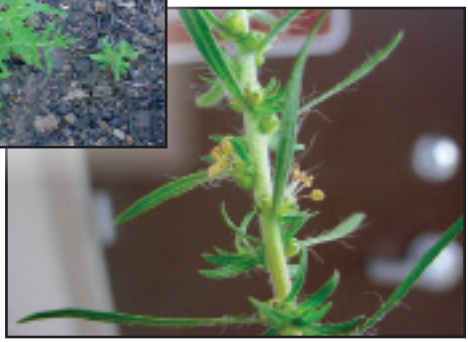
Reproduces by seed. Kochia is a highly effective reproducer. After seeds mature in late fall, the plant stem separates from the root, the plant is then blown by wind and seeds—held in the leaf axils—fall to the ground as the plant tumbles.

Comments

Native to Europe and western Asia; kochia aids in spreading fire; burns easily because stems are spaced in an arrangement that allows for maximum air circulation; dead plants contribute to fuel load by retaining their original shape for some time before decomposing. Because it is extremely efficient at using water, it thrives in warm, low rainfall environments. Although palatable to stock, kochia may

be toxic in large quantities. In general appearance this species could be confused with Russian thistle. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Kochia plants
© RO



Kochia flowers and foliage
© RO

Kochia plant(s)
© LR

Kochia plant(s)
© JMR

Parrot Feather Milfoil

Myriophyllum aquaticum (Vell.) Verdc.
(Water Milfoil family, Haloragaceae)

Description

Parrot feather milfoil is an aquatic perennial, herbaceous, rooted, submerged to emergent plant that invades shallow aquatic habitats throughout much of the United States. Stems, up to 5 feet long, trail along the ground or water surface, becoming erect and leafy at the ends. Stems are stout and blue-green in color.

Leaves: Leaves are abundant, 4 to 6 whorled, pinnately compound, and finely dissected (feathery looking) with 20 to 30 divisions per leaf; submersed leaves are 9/16 to 1-3/8 inches long and have 20 to 30 divisions per leaf; emergent leaves are 3/4 to 2 inches long, less divided and greener than the submersed leaves.

Flowers: As only female plants occur in North America, reproduction occurs vegetatively; however, inconspicuous flowers are formed in the axils of the emergent leaves in the spring (sometimes fall).

Fruit: No fertile fruit is known to be produced in the United States.

Habitat

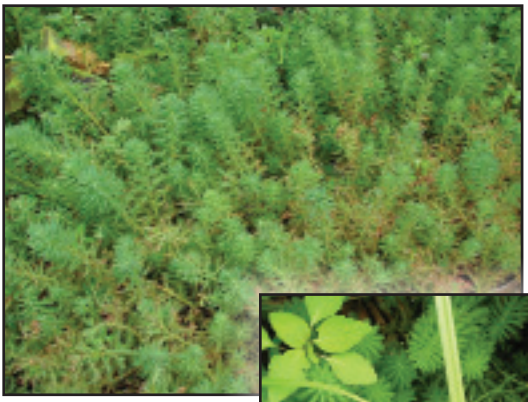
Lakes, ponds, shallow reservoirs, and low energy areas of rivers and streams within elevations that generally range below 4,000 feet.

Propagation/Phenology

Reproduction occurs vegetatively from whole plants or fragments.

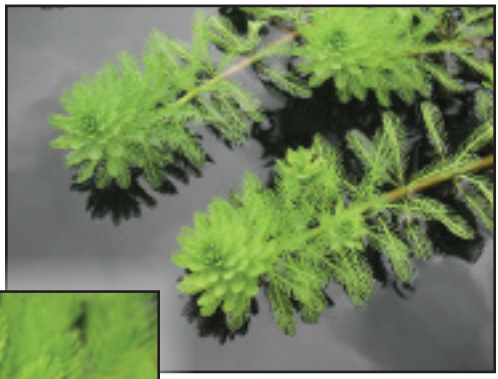
Comments

Native to South America, parrot feather milfoil's potential range is yet to be determined. In more southern regions, this plant forms monocultures that clog waterways, impeding recreational and commercial boating activities. These monocultures also disrupt the growth of native aquatic plants and provide breeding areas for mosquitoes. The submersed form of M. aquatic can easily be mistaken for M. spicatum. Control of this plant is extremely costly. New Mexico Class A noxious weed and Texas noxious plant.



Parrot feather milfoil emergent foliage
© V

Parrot feather milfoil infestation
© F&KS



Parrot feather milfoil plants
© NL

Parrot feather milfoil plants
© V

Russian Thistle

Salsola spp. L. (Goosefoot family, Chenopodiaceae)

Description

Annual herb with spreading taproot; stems bushy, much branched, 1/2 to 4 feet tall, 1 to 5 feet in diameter, rigid, spiny, spherical, often reddish-purple in age, young stems and leaves green and succulent.

Leaves: Leaves alternate, the first-formed leaves fleshy, cylindrical or awl-shaped, 7/16 to 2-1/2 inches long and less than 1/16 inch wide, with a pointed tip, the latter-formed leaves shorter, stiff, dilated and thickened at the base, ending in a hard sharp spine.

Flowers: Flowers June to October; flowers small, greenish, mostly solitary in the axils; petals none; sepals 5, papery and persistent; 2 bracts at the base of each flower are rigid, spine-tipped; fruit surrounded by the 5 enlarged sepals, each developing a fan-shaped, strongly veined wing on its back, 1/8 to 3/8 inch in diameter.

Fruit: Seeds numerous (to 250,000 per plant), top-shaped, 1/16 inch in diameter, with a yellowish coiled embryo, visible through the thin gray wall.

Habitat

Cultivated and disturbed or degraded sites in grassland and woodland communities, and roadsides in any type of well-drained, uncompacted soil, however, it is most frequent in alkaline or saline soils within elevations that generally range below 8,500 feet.

Propagation/Phenology

Reproduces by seed; Russian thistle is a highly effective reproducer, after seeds mature in late fall, the plant stem separates from the root, the plant is then blown by wind; seeds, held in the leaf axils, fall to the ground as the plant tumbles.

Comments

Native to the Mediterranean region; Russian thistle aids in spreading fire; burns easily because stems are spaced in an arrangement that allows for maximum air circulation; dead plants contribute to fuel load by retaining their original shape for some time before decomposing. In general appearance, this species could be confused with kochia. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Russian thistle flowers
© F&KS

Russian thistle flowers and foliage (right)
© PTL

Russian thistle plants
© F&KS

Russian thistle plants
© MEH

Spiny Cocklebur

Xanthium spinosum L. (Aster family, Asteraceae)

Description

Erect, much branched, slender, hairy, warm-season annual reaching to 3-1/2 feet in height; taproot; stems have 3-parted spines that arise at the base of each leaf; with characteristic "cocklebur" fruit.

Leaves: Alternately, approximately 1 to 2-1/2 inches long and 3/16 to 1 inch wide; lance-shaped in outline with irregular lobes or teeth along the margin; without hairs above, but have many soft white hairs below and have conspicuous white veins on the shiny dark green upper leaf surfaces; occur on petioles that range from 1/4 to 1 inch in length; very distinctive yellow, 3-parted spine 1/2 to 1 inch long occurs at the base of each leaf petiole.

Flowers: Flowers December to May; inconspicuous, cream-green in color, arising from the area between the leaf petioles and the stems (female flowers) and at the ends of the erect stems (male flowers).

Fruit: An elliptic to egg-shaped, 2-chambered bur, 1/2 to 1-1/2 inches long and covered with hooked prickles. Each bur contains 2 seeds.

Habitat

Cultivated and disturbed or degraded dry sites in meadows, grassland, woodland, and chaparral communities, and roadsides within elevations that generally range below 6,300 feet.

Propagation/Phenology

Reproduces by seed; of the two seeds in each burr, one germinates the first spring or summer and the other does not germinate until the second or third year; spiny cocklebur is one of nature's original "velcros."

Comments

Native to Chile; poisoning has occurred in all classes of domestic livestock, and is always associated with cotyledonary seedling ingestion; symptoms are anorexia, depression, nausea, and prostration; death may occur in a few hours to 3 days after the symptoms are first noted; common cocklebur is a closely related and similar species, however, unlike spiny cocklebur, this weed does not have the very distinctive 3-parted spines that arise at the base of each leaf. New Mexico Watch List species.

Spiny cocklebur foliage and spines
© JMR

Spiny cocklebur stem, spines, and fruits
© JMR

Spiny cocklebur foliage
© RV

Spiny cocklebur plants (right)
© BR

Hounds-tongue © RV

Alfalfa

Medicago sativa L. (Pea family, Fabaceae)

Description

Alfalfa is a long lived, perennial legume; stems decumbent to erect from a woody crown to about 8 to 31-1/2 inches tall; new growth occurs from buds in the crown; taproot stout.

Leaves: Leaves are trifoliate compound, alternately arranged on the stem; petiole pubescent, 3/16 to 1-3/16 inches long; leaflets 3/8 to 9/16 inch long, 1/8 to 3/8 inch wide, narrowly lanceolate to obovate, glabrous or appressed hairy, paler green beneath; stipules entire to sharply toothed, 3/16 to 5/8 inches long, pubescent on lower surface, glabrous on upper surface.

Flowers: Flowers March to October; inflorescence spikelike, 5 to 40 flowered, longer in fruit; calyx 3/16 inch long or less; corolla 5/16 to 3/8 inch long, purple or multicolored (i.e., violet, violet-green, greenish-yellow, rarely yellow).

Fruit: Leathery pods, slightly pubescent or glabrous, 1/8 to 3/8 inch in diameter, ranging from sickle-shaped to spirals (2 to 3 coils); pods contain 6 to 8 small kidney-shaped, yellowish-brown seeds; produces roughly 227,000 seeds per pound.

Habitat

Near cultivated fields, meadows, roadsides, disturbed habitats, waste places, and on moist soils within elevations that generally range from 4,000 to 9,500 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to southwest Asia; deep rooting habit (where possible as much as 20 feet or more) makes alfalfa a very drought resistant plant. Alfalfa has been cultivated for forage worldwide. Alfalfa may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Alfalfa plant(s)
© HFS

Alfalfa trifoliate leaf
© GH

Alfalfa fruit
© RO

Alfalfa flowers
© KW

Black Henbane

Hyoscyamus niger L. (Potato family, Solanaceae)

Description

Erect, coarse, summer annual or biennial, 12 to 39 inches tall; foliage is covered with sticky glandular hairs; has a foul odor at all growth stages.

Leaves: Stems erect, leafy, branched (biennial form) or few branched (annual form), densely covered with long, glandular hairs; leaves alternate, gray-green, covered with short glandular hairs, short-stalked (lower) to sessile (upper), oblong to lanceolate, 2 to 8 inches long, coarsely toothed to acutely pinnate-lobed, with conspicuous pale veins covered with long glandular hairs.

Flowers: Flowers June to September; pale brownish-yellow flowers with purple centers and purple veins are found on long racemes in the axils of the upper leaves; flowers 5-lobed, fussed, funnel-shaped, 3/4 to 1-3/4 inches long.

Fruit: Fruits ovoid to pineapple-shaped, 5-lobed capsule, 1/2 to 1 inch long; seeds numerous, brown to gray, deeply pitted, and flattened, 1/16 inch long.

Habitat

Cultivated and disturbed or degraded open sites in woodland and forest communities, and roadsides in sandy or well-drained loam soils with moderate fertility within elevations that generally range from 5,500 to 8,000 feet.

Propagation/Phenology

Reproduces by seed; seeds that mature early in a season typically produce biennial plants; biennial seedlings require a cold moist period to induce stem elongation and flowering; seeds maturing late in a season often produce annual plants; newly matured seeds germinate without light; seeds that become dormant germinate best when exposed to light; seed can remain viable for approximately 4 years.

Comments

Native to Eurasia; all plant parts contain tropane alkaloids and are toxic to humans and animals when ingested. New Mexico Class A noxious weed.

Black henbane flowers
© JS

Black henbane flowers and seed capsules (right)
© SD

Black henbane foliage (above)
© MEH

Black henbane plants (left)
© MEH

Blue Mustard

Chorispora tenella (Pall.) DC. (Mustard family, Brassicaceae)

Description

Prostrate or erect, single or branched stemmed, clump- or patch-forming winter annual forb; 2 to 20 inches tall; shallow to stout taproot; seedlings have oval and somewhat glandular leaves.

Leaves: Rosette leaves oblong to oblanceolate, typically sparsely covered with minute glandular hairs; foliage sparsely to moderately covered with simple, minute glandular hairs that are sticky to touch; stems leafy, branched mostly from the base; leaves green, alternate, elliptic or oblong to lanceolate or oblanceolate; lower stem leaves petioled, 1-1/8 to 1-3/8 inches long, with wavy toothed to pinnately lobed margins; upper stem leaves are sessile, with entire to wavy-toothed margins.

Flowers: Flowers March to May; flowers showy in elongated clusters, 4-petalled, pale purple to bluish-purple, narrowly clawed, 3/8 to 1/2 inch long; sepals 4, usually purple with narrow membranous margins, separate but forming a tube, 1/4 to 5/16 inch long.

Fruit: Fruit is a silique, long upturned, cylindrical capsule with an elongated beak about 1-1/8 to 1-3/4 inches long and 1/16 to 3/32 inch wide; containing round, reddish-brown spherical seeds 1/16 inch in diameter; usually remain within the pod segment.

Habitat

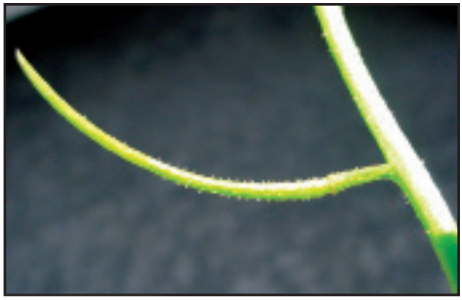
Blue mustard occurs in dry, disturbed sites such as waste places, pastures, and along roadsides and railroad rights-of-way within elevations that generally range below 7,500 feet.

Propagation/Phenology

Seedlings exist as basal rosettes until flowering stems are produced in early spring. Reproduces by seed; viable seeds can be produced 10 days after bloom.

Comments

Native to Eurasia; the plant has a strong scent which is generally considered unpleasant. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.



Blue mustard fruit
© RO

Blue mustard plant(s) (above)
© AS

Blue mustard flowers (below)
© RO

Blue mustard infestation
© SD

Bull Thistle

Cirsium vulgare (Savi) Ten. (Aster family, Asteraceae)

Description

Stoutly taprooted, coarse, multibranched annual, biennial or short-lived perennial forb, 2 to 6-1/2 feet tall; with stiff, hairy foliage and conspicuous prickly-winged stems.

Leaves: Rosette leaves elliptic to oblanceolate, 4 to 16 inches long; margins deeply coarse-lobed and toothed; main prickles 3/16 to 9/16 inch long; stem leaves smaller, more deeply lobed and spinier; upper surfaces of all leaves green, evenly covered with stiff, sharp-pointed hairs, sometimes sparsely cobwebby; lower surfaces covered with cobwebby hairs; leaf bases extend nearly all the way down stem internodes as conspicuous prickly wings; stems loosely covered with white cobwebby hairs, surfaces glandular.

Flowers: Flowers June to October; purple hemispheric to bell-shaped flower heads 1 to few, 3/4 to 1-1/2 inches in diameter, loosely covered with cobwebby hairs and with at least 1 bract-like leaf just below; purple corollas 1 to 1-3/8 inches long; flower head bracts 1 to 1-1/2 inches long, 3/4 to 1-1/2 inches in diameter lanceolate to linear, spreading to reflexed; spines less than 3/16 inch long, yellowish.

Fruit: Achenes 1/8 to 3/16 inch long, ovate to elliptic, slightly compressed, smooth, glossy, gray or tan; pappus bristles plumose and deciduous, 9/16 to 1-3/16 inches long, white, forming a ring at the base and falling as a unit.

Habitat

Cultivated and disturbed or degraded sites in grassland, woodland, forest, and riparian communities, and roadsides within elevations that generally range from 4,500 to 9,100 feet.

Propagation/Phenology

Reproduces by seed; seeds per flower head range from less than 100 to more than 400.

Comments

Native to Europe; heavy grazing and disturbances that create bare soil patches facilitate seedling establishment and survival. New Mexico Class C noxious weed.

Bull thistle plant
© SD

Bull thistle flower head and stems
© CE

Bull thistle basal rosette
© MS

Bull thistle flower heads
© CE

Canada Thistle

Cirsium arvense (L.) Scop. (Aster family, Asteraceae)

Description

Erect clump or patch-forming perennial forb to 39 inches tall, with extensive creeping roots and small unisexual flower heads; plants are male or female (dioecious), and dense patches of a single sex often occur; foliage and stems are spiny.

Leaves: Rosette leaves few or lacking; all leaves oblong to lanceolate, 2 to 8 inches long; margins nearly entire to shallowly lobed and toothed; main prickles 1/8 to 1/4 inch long; upper surfaces glabrous, green; lower surfaces sometimes sparsely woolly; leaf bases sometimes extend briefly down stems as inconspicuous prickly wings to 3/8 inch long; spiny stems slender, glabrous, and leafy.

Flowers: Flowers June to October; cylindrical or ovoid to bell-shaped unisexual flower heads numerous, often clustered; flower head bracts 3/8 to 1 inch long, 3/16 to 3/4 inch diameter, often, glabrous or with white woolly hair, spines 1/16 inch long; flowers pink, purple, or white (males 3/8 to 9/16 inch long, females 9/16 to 3/4 inch long).

Fruit: Achenes 1/16 to 1/8 inch long, ovate to elliptic, slightly compressed, smooth, glossy, tan; pappus bristles plumose and deciduous, 9/16 to 3/4 inch long, tan, forming a ring at the base and falling as a unit.

Habitat

Cultivated and disturbed or degraded sites in moist grassland, woodland, forest and riparian communities, and roadsides within elevations that generally range from 4,200 to 8,300 feet.

Propagation/Phenology

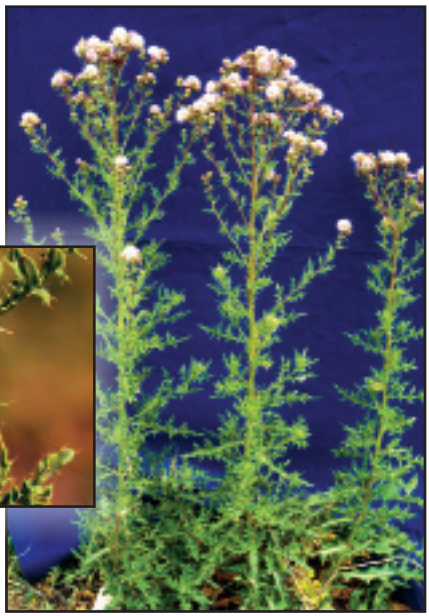
Reproduces vegetatively from creeping roots and by seed; root reserves are lowest when flowering begins in early summer; new roots and shoot buds develop in winter, and shoots emerge in spring; subterranean shoots can develop roots and buds at any node; root and subterranean shoot fragments 3/8 inch long or more can develop into a new plant; female plants only produce viable seed if male plants are within pollinator range.

Comments

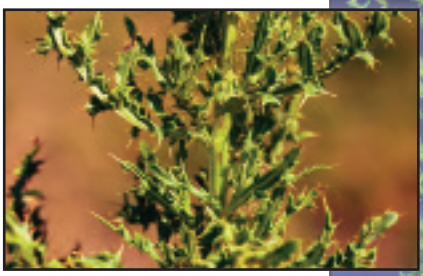
Native to Europe; heavy grazing and disturbances that create bare soil patches facilitate seedling establishment and survival. Arizona prohibited noxious weed, New Mexico Class A noxious weed, and Oklahoma noxious weed.

Canada thistle male flower heads
© JMR

Canada thistle female flower heads
© SD



Canada thistle plants
© SD



Canada thistle foliage
© SD

Common Burdock

Arctium minus Bernh. (Aster family, Asteraceae)

Description

Common burdock is a warm-season stoutly taprooted biennial forb; low growing rosette of basal leaves during the first year, but during the second year it becomes 3 to 6 feet tall; second year plant is little branched below, but produces short, flowering side stems above.

Leaves: Rosette leaves are broadly heart-shaped, 6 to 18 inches long, 4 to 14 inches wide, with hollow petioles and wavy and toothed margins; undersides are loosely hairy and light green; stem leaves are much smaller, alternate, and egg-shaped; upper stems terminate in small clusters of flower heads on short stalks.

Flowers: Flowers July to October; flower heads 3/4 to 1 inch wide with pink, lavender, purple or white disk flowers, flower head bracts with hooked spines curving inward; flowers are enclosed in a prickly bur; flowers dry to a bur, and the hooked bracts are often confused with a thistle.

Fruit: The 3/16- to 1/4-inch long achenes are oblong, broader and more truncate at one end than the other; light brown with dark brown speckles; each achene has a crown of fine bristles at the apex.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, and riparian communities, and roadsides within elevations that generally range below 7,300 feet.

Propagation/Phenology

Insect pollinated; reproduces by seed; one plant can typically produce 15,000 seeds.

Comments

Native to northern Europe; common burdock is one of nature's original "velcros;" burs cling readily to fur and clothing and are difficult to remove. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Common burdock flowers and foliage
© MEH

Common burdock plant
© MEH

Common burdock flowers and foliage (above)
© RO

Common burdock leaf (left)
© MEH

Diffuse Knapweed

Centaurea diffusa Lam. (Aster family, Asteraceae)

Description

Multi-branched annual or perennial forb, 4 to 31-1/2 inches tall, with spiny or comb-like flower head bracts; long taprooted plants exist as basal rosettes until erect, highly branched flowering stems are produced in late spring/summer.

Leaves: Cotyledons spatulate to oval; rosette leaves pinnate-divided without straw-colored spines at the centers of rosettes; leaves alternate, resin-dotted; lower stem leaves deeply 1 to 2 pinnate-lobed, 4 to 8 inches long; upper stem leaves wingless, entire, linear or bract-like 3/8 to 3/4 inch long. Foliage variously covered with short to medium interwoven gray hairs.

Flowers: Flowers June to September; 1/4 to 3/8 inch diameter flower heads solitary or several with 12 to 13 white, pink, or pale purple flowers per head, 1/2 inch long; greenish or straw-colored flower head bracts overlapping in several rows, 3/8 to 1/2 inch long, tips variously spiny or comb-like, central spine spreading, 1/8 inch long.

Fruit: Dark brown achenes oblong, 1/8 to 3/16 inch long, apex flattened and tapered to a rounded, laterally notched base, roughly 13 per head, pappus scales less than 1/16 inch long or lacking.

Habitat

Cultivated and disturbed or degraded well-drained soil sites in meadows, grassland, woodland, and forest communities, and roadsides within elevations that generally range below 7,200 feet.

Propagation/Phenology

Reproduces by seed, up to 40,000 per plant; germination occurs over a broad range of environmental conditions; seeds exhibit three germination patterns: nondormant seeds that germinate with or without light exposure, dormant seeds that germinate in response to red light, and dormant seeds that are not light sensitive.

Comments

Native to southern Europe; diffuse knapweed is a very competitive and aggressive plant with allelopathic effects; stands of diffuse knapweed may persist indefinitely once established. Arizona prohibited/restricted noxious weed and New Mexico Class A noxious weed.

Diffuse knapweed flower heads
© NER

Diffuse knapweed flower head
© SD

Diffuse knapweed foliage (above)
© JMD

Diffuse knapweed plants (below)
© RO

Hounds-tongue

Cynoglossum officinale L. (Borage family, Boraginaceae)

Description

Erect, coarse, 1 to 2 stemmed, biennial or short-lived perennial forb, 1 to 4 feet tall, with a thick, black, woody taproot; it forms a rosette in the first year and usually flowers in the second year; the leaves resemble a hound's tonge.

Leaves: Basal and lower cauline leaves are petiolate, elliptic to oblanceolate, 5-7/8 to 7-7/8 inches long and 3/4 to 2 inches wide, tapering at the base; upper leaves are alternate, numerous, gradually reduced upward, acute to obtuse, and sessile or clasping, lacking teeth or lobes; all leaves are rough and hairy on both surfaces.

Flowers: Flowers May to August; flowers are many on several long, 1-sided branches from the upper leaf axils; mature flowers stalks are curved, spreading; flowers are dull reddish-purple, broadly bell-shaped (5 petals fussed), about 3/8 inch wide and terminal.

Fruit: Fruit consists of 1 to 4 nutlets, 3/16 to 1/4 inch long, rounded-triangular, dorsally flattened, and covered with short, barbed prickles; nutlets remain closed at maturity, the seeds remain encased; seeds are brown or grayish brown.

Habitat

Cultivated and disturbed or degraded sites in grassland, woodland, forest, and riparian communities, and roadsides; it is most abundant in areas with more than 10 percent bare ground within elevations that generally range from 4,900 to 9,800 feet.

Propagation/Phenology

Reproduces by seed; estimates of total seed produced per plant range from 50 to more than 2,000; the barbed nutlet facilitates dispersal by animals.

Comments

Native to Europe; hounds-tongue colonizes easily, and quickly forms dense monocultures on disturbed habitats; hounds-tongue contains pyrrolizidine alkaloids and is toxic to horses and cattle. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Hounds-tongue flower and fruit
© MEH

Hounds-tongue plant in bloom
© RV

Hounds-tongue flowers (above)
© MEH

Hounds-tongue taproot (left)
© JMR

Iberian Knapweed

Centaurea iberica Trevir. ex Spreng. (Aster family, Asteraceae)

Description

Multi-branched perennial forb, 39 inches tall, with spiny or comb-like flower head bracts; stoutly taprooted; plants exist as basal rosettes until erect, highly branched flowering stems are produced in late spring.

Leaves: Cotyledons spatulate to oval; rosette leaves pinnate-divided with straw-colored spines at their centers; leaves alternate, resin-dotted, lower stem leaves deeply 1 to 2 pinnate-lobed, 4 to 8 inches long; upper stem leaves wingless, mostly pinnate-divided, 3/8 to 3/4 inch long. Foliage variously covered with short to medium interwoven gray hairs; new leaves green and covered with minute bristly hairs.

Flowers: Flowers July to October; 1/4 to 1/2 inch diameter flower heads solitary or several with 12 to 13 rose-pink to whitish flowers per head, 5/8 to 3/4 inch long; greenish or straw-colored flower head bracts overlapping in several rows, 5/8 to 3/4 inch long, tips variously spiny or comb-like; central spine stout or spreading, 3/8 to 1 inch long.

Fruit: Whitish achenes oblong, 1/8 to 3/16 inch long, often brown streaked, apex flattened and tapered to a rounded, laterally notched base; pappus scales less than 1/16 inch long.

Habitat

Often colonizes banks of watercourses and other moist sites within elevations that generally range below 3,200 feet.

Propagation/Phenology

Reproduces by seed, up to 40,000 per plant; germination occurs over a broad range of environmental conditions; plants produce fewer viable seeds in dry years; infestation density correlates with the age of the population and degree of disturbance; plants seldom persist in shaded places.

Comments

Native to southeast Eurasia; Iberian knapweed is a very competitive and aggressive plant with allelopathic effects; stands of Iberian knapweed may persist indefinitely once established; old

flower stems can persist after senescence; flower head bracts and achenes remaining on old stems can aid with species identification when plants are overwintering as rosettes. Arizona prohibited noxious weed.

Iberian knapweed pre-bloom flower head
© CDFA

Iberian knapweed basal rosettes
© CDFA

Iberian knapweed flower head
© CDFA

Iberian knapweed flower heads
© CDFA

Meadow Knapweed

Centaurea debeauxii Gren. & Godr. (excluded)
(Aster family, Asteraceae)

Description

Multi-stemmed, warm-season, perennial forb, 20 to 40 inches tall; stems are branched with one flower head at each tip; taprooted.

Leaves: Basal rosette leaves are lance-shaped, up to 6 inches long and 1-1/4 inches wide, slightly pubescent, and may be pinnately cut or have wavy margins; lower leaves are long-stalked, entire, coarsely lobed, or toothed; upper stem leaves are small, stalkless, unlobed, and almost bract-like.

Flowers: Flowers May to July; flower heads are solitary, rose to purple in color, occasionally white, and almost globe-shaped 5/8 inch in diameter; underneath the flower head are distinctive roundish, light to dark-brown bracts with papery, fringed margins.

Fruits: Fruit is an achene; seeds are about 1/8 inch long, ivory-white to light brown in color, and sometimes bearing a row of short hairs.

Habitat

Cultivated areas and disturbed or degraded sites in meadows, grassland and riparian communities, and roadsides; establishes in many soil types within elevations that generally range from 3,000 to 8,000 feet.

Propagation/Phenology

Reproduces primarily through seed production; plant can also re-sprout from root and crown fragments that have been disturbed.

Comments

Native to Europe; meadow knapweed is considered to be a hybrid between brown knapweed (C. jacea L.) and black knapweed (C. nigra L.); meadow knapweed is not very palatable to animals; once established, infestations are difficult to remove. New Mexico Watch List species.

Meadow knapweed flower head
© CR

Meadow knapweed flower head
© EC

Meadow knapweed plant (left)
© CR

Meadow knapweed infestation (below)
© EC

Musk Thistle

Carduus nutans L. (Aster family, Asteraceae)

Description

Erect, single-stemmed annual or biennial forb; 1 to 7 feet tall; often forming dense patches; stems glabrous to wooly, spiny-winged from leaf bases; taprooted.

Leaves: Basal and cauline, alternate, lance-linear to elliptic, 4 to 16 inches long, 1/4 to 8 inches wide; upper blades smaller, surfaces glabrous above, undersides furry—primarily along main veins, margins 1 to 2 pinnately lobed and spiny-toothed; basal leaves taper to winged petioles while cauline leaves are sessile.

Flowers: Flowers June to September; purple flower heads spherical 3/4 to 2-3/4 inches in diameter, nodding, solitary on stalks more than 3/4 inch long; flower head bracts glabrous to sparsely wooly, tips erect to spreading; flower head receptacles flat, densely covered with cream-colored bristles.

Fruits: Glossy golden to brown achenes elliptic, greater than 1/8 inch long; curved, slightly compressed; cream-colored, 1/2 to 1 inch long, pappus bristles are numerous; united at the base to form a ring, and are deciduous as a unit.

Habitat

Moist cultivated and disturbed or degraded sites in meadows, grassland, chaparral, woodland, forest, and riparian communities, and roadsides within elevations that generally range from 4,200 to 8,100 feet.

Propagation/Phenology

Plants appear to require a period of chilling to induce flowering; first flower heads can produce large numbers of seeds, sometimes 1,500 or more seeds per head; later flower heads produce fewer seeds. Most seeds are dispersed within 165 feet of the parent plant; typically, seeds are dispersed 1 to 3 weeks after flowering. Seeds typically germinate during the winter/spring months and exist as a rosette until flowering in the spring/summer of the following year.

Comments

Native to Europe; serious infestations are often associated with sandy, fertile soils. This species and spiny plumeless thistle readily hybridize with one another, and plants with intermediate characteristics may be found where their ranges overlap. New Mexico Class B noxious weed and Oklahoma noxious weed.

Musk thistle flower heads
© SD

Musk thistle flower heads
© RL

Musk thistle stems and foliage (above)
© MEH

Musk thistle basal rosette
© LTK

Purple Loosestrife

Lythrum salicaria L. (Loosestrife family, Lythraceae)

Description

Erect, single- or multi-stemmed, clump or patch-forming perennial forb or subshrub; 6 to 8 feet tall, taprooted; rose-purple flowers are showy; flowers are borne on elongated dense or open raceme, with an erect or drooping tip.

Leaves: Stems are typically covered with short hairs; leaves lanceolate, 2 to 5-1/2 inches long; bases slightly lobed (cordate), covered with short hairs or glabrous, mostly opposite or whorled; upper leaves sometimes alternate.

Flowers: Flowers June to September; flowers showy, bright pinkish-purple, with 5 to 7 rough margined petals, 3/8 to 9/16 inch long; ovary superior but appears inferior, surrounded by and not fused to calyx tube.

Fruit: Capsules oblong-ovoid, 3/16-1/4 inch long, surrounded by persistent calyx tube, open into halves at tip; seeds numerous, reddish-brown, flattened, sometimes 3-angled in cross-section, often concave on 1 side, less than 1/16 inch long.

Habitat

Cultivated and disturbed or degraded sites in perennial and seasonal wetlands, including marsh and pond edges, streambanks, canals, and ditches; within elevations that generally range from 4,500 to 6,800 feet.

Propagation/Phenology

Reproduces primarily by seed; however, stem fragments can develop roots under favorable conditions; large plants can produce more than 2 million viable seeds in one season; seedlings can mature and flower within 8 to 10 weeks.

Comments

Native to Europe; plants often form dense colonies that displace native vegetation and wildlife. Arizona prohibited noxious weed, New Mexico Class A noxious weed, and Texas noxious plant.

Purple loosestrife flowers
© NER

Purple loosestrife flowering inflorescence
© EC

Purple loosestrife foliage
© SD

Purple loosestrife plants (above)
© SD

Purple Starthistle

Centaurea calcitrapa L. (Aster family, Asteraceae)

Description

Multi-branched annual, biennial or perennial forb; 3 feet tall, with spiny or comb-like flower head bracts; stoutly taprooted plants exist as basal rosettes until erect, highly branched flowering stems are produced in late spring/summer.

Leaves: Cotyledons spatulate to oval; rosette leaves pinnate-divided with straw-colored spines at their centers; leaves alternate, resin-dotted, lower stem leaves deeply 1 to 2 pinnate-lobed, 4 to 8 inches long; upper stem leaves wingless, mostly pinnate-divided, 3/8 to 3/4 inch long. Foliage variously covered with short to medium interwoven gray hairs; new leaves densely covered with gray hairs.

Flowers: Flowers July to October; 1/4 to 3/8 inch diameter flower heads solitary or several with 25 to 40 purple flowers per head, 5/8 to 1 inch long; greenish or straw-colored flower head bracts overlapping in several rows, 5/8 to 3/4 inch long, tips variously spiny or comb-like; central spine stout, 3/8 to 1 inch long.

Fruit: White achenes oblong, 1/8 to 3/16 inch long, often brown streaked, apex flattened and tapered to a rounded, laterally notched base, often brown-streaked; pappus usually lacking.

Habitat

Cultivated and disturbed or degraded fertile soil sites in meadows, grassland, woodland, and forest communities, and roadsides within elevations that generally range from 3,300 to 8,000 feet.

Propagation/Phenology

Reproduces by seed, up to 40,000 per plant; germination occurs over a broad range of environmental conditions; plants produce fewer viable seeds in dry years; infestation density correlates with the age of the population and degree of disturbance; plants seldom persist in shaded places.

Comments

Native to southern Europe; purple starthistle is a very competitive and aggressive plant with allelopathic effects; stands of purple starthistle may persist indefinitely once established. Arizona

Purple starthistle flower head (left)
© BR

Purple starthistle flower head spines (right)
© BR

Purple starthistle plants (left)
© BR

Purple starthistle basal rosette (right)
© SD

Red Clover

Trifolium pratense L. (Pea family, Fabaceae)

Description

Red clover is a cool-season biennial or short-lived perennial with a number of leafy erect or ascending stems arising from the woody root crown, 4 to 8 inches long. Leaves and stems are pubescent. Plants have hollow, hairy stems and branches.

Leaves: The alternate leaves are composed of three leaflets (trifoliate), which may or may not have a "crescent" or "watermark" on the upper surface; stipules ovate, conspicuously veined, 3/8 to 15/16 inch long; leaf stalks long; leaflets obovate or oval, 3/4 to 2 inches long, entire or finely toothed; flowering heads sessile.

Flowers: Flowers June to October; the flower heads, each consisting of 40 to 100 or more flowers, are borne in compact clusters or heads; flowers rose-pink to purple; flower stalks to 1-3/16 inches long; flower heads spherical, 7/8 to 1-3/8 inches in diameter; flower stems less than 1/8 inch long; flowers 1/2 to 3/4 inch long; calyx 5/16 to 1-1/32 inches long, hairy; corolla 13/32 to 13/16 inch long, rose-pink to purple.

Fruit: The fruit is a legume, less than 3/16 inch long, with 1 to 2 kidney-shaped seeds that vary in color from yellow to deep violet; produces roughly 272,000 seeds per pound.

Habitat

Red clover grows best on well drained loam soil, in wet to dry meadows, open forests, and forest margins within elevations that are generally below 8,500 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to Europe; red clover has an extensively branched and deeply penetrating (8 feet or more) taproot and makes its best growth on rich, deep, well-drained soil. Red clover may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed, making it a concern in

riparian and moist meadow habitats. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Red clover trifoliate leaves
© RO

Red clover plants
© TH

Red clover flowers and foliage
© F&KS

Red clover flowers and foliage
© JM

Redstem Filaree

Erodium cicutarium (L.) L'Hér. ex Ait.
(Geranium family, Geraniaceae)

Description

Spreading or erect, winter annual or biennial forb, 4 to 24 inches long, generally from a basal rosette; covered with partially glandular hairs; stems are often tinted red in color; small taproot with a fibrous root system; it often carpets large areas.

Leaves: Basal rosette leaves are up to 8 inches long and 2-1/2 inches across; odd-pinnate and have long petioles; both the central stalk of these compound leaves and their petioles are reddish green or reddish brown and covered with long white hairs, like the stems; hairy leaflets are up to 1 inch long and 1/2 inch wide, pinnately cleft with both shallow and deep lobes, margins ciliate; cauline leaves similar basal leaves, but smaller in size with shorter petioles; base of each cauline leaf, there is a pair of small stipules that are ovate in shape.

Flowers: Flowers February to May; stems bear 2 to 8 bright pink to purple, 5-petalled flowers, 1/2 inch wide, arranged in loose cluster of 2 to 12, usually with dark spots on the bases; each flower occurring on a relatively long flower stalk up to 1 foot tall.

Fruit: Each flower develops into a seed capsule in the form of a long narrow beak (stork's bill) up to 2 inches long; at maturity, capsule splits apart into 5 narrow linear segments; each segment has a single seed at the bottom; seed linear in shape, somewhat broader at the top and tapering to a point at the bottom; as the attached segment dries, it forms an irregular spiral that can drill the seed into the ground.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland and woodland communities, and roadsides; it grows in well-drained, clayey, loamy, or sandy soil within elevations that generally range from 3,000 to 8,100 feet.

Propagation/Phenology

Reproduces by seed; some estimates of total seed produced per plant are more than 5,000.

Comments

Native to Europe; redstem filaree colonizes easily and quickly forms dense monocultures on disturbed habitats. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Redstem filaree flowers and foliage (left)
© RO

Redstem filaree flowers and foliage (below)
© JB

Redstem filaree plants (left)
© F&KS

Redstem filaree flowers and fruit (right)
© BM

Russian Knapweed

Acroptilon repens (L.) DC (Aster family, Asteraceae)

Description

Multi-stemmed perennial forb, 9 to 39 inches tall; openly branched stems covered with cobwebby, matted hairs; creeping rhizomes scaly, dark brown to black; root system branches frequently with individual roots reaching 25 feet in depth; stems with numerous branches; Russian knapweed is similar in appearance to other knapweeds and star-thistles; however, Russian knapweed has rounded to pointed membranous margins whereas flower head bracts of other knapweeds and star-thistles are tipped or fringed with short spines.

Leaves: Basal and cauline (along the stem), simple, alternate; upper cauline leaves narrowly lanceolate to linear, 1/8 to 1/2 inch long, margins entire or toothed; lower cauline leaves often serrate; basal leaves lobed and gray pubescent.

Flowers: Flowers June to September; pink to purplish flower heads range from one to numerous, rising at the end of branches, arranged in a flat-topped to panicle-like inflorescence; flower head bracts arranged in 6 to 8 rows.

Fruits: Oblong achene (fruit), 1/8 to 1/4 inch long; deciduous pappus (tuft-like appendage) at end of achene, whitish bristles unequal, 1/8 to 3/8 inch long, barbed toward the base, feathery toward the tip.

Habitat

Cultivated areas and disturbed or degraded sites in meadows, grassland and riparian communities, and roadsides; establishes in many soil types within elevations that generally range from 3,000 to 8,000 feet.

Propagation/Phenology

Reproduces primarily by vegetative shoots from rhizomes although individual plants can produce small quantities of viable seed. Seed can remain viable 2 to 3 years. Severed roots can produce new shoots from a depth of up to 6 inches.

Comments

Native to central Asia; Russian knapweed is a very competitive and aggressive plant with allelopathic effects; stands may persist indefinitely once established. Arizona prohibited/restricted noxious weed and New Mexico Class B noxious weed.

Russian knapweed flower heads and foliage (above)
© JMR

Russian knapweed flower heads
© SD

Russian knapweed foliage (right)
© BM

Russian knapweed plants (left)
© SD

Scotch Thistle

Onopordum acanthium L. (Aster family, Asteraceae)

Description

Vigorous biennial or short-lived warm-season perennial forb with coarse, spiny leaves and conspicuous spiny-winged stems; 1-1/2 to 12 feet tall.

Leaves: Stems wings, spiny, continuous, and conspicuous, 3/4 to 1-1/4 inches wide; leaves alternate, spiny; leaves covered with gray-white woolly hairs, with the lower surface more densely covered than the upper; leaves 4 to 20 inches long, broadly elliptic; margins spiny-toothed to shallow spiny-lobed.

Flowers: Flowers June to September; flower heads are numerous mostly solitary but sometimes in clusters of 2 to 7, 1 to 2 inches in diameter, flowers white to purple; flower head bracts spine-tipped, less than 1/8 inch.

Fruit: Achenes narrowly obovate, more or less 4- or 5-angled, glabrous, and mottled brown to blackish; surface roughened with wavy transverse ridges, less than 1/8 inch long; pink to reddish pappus bristles equal, numerous, minutely barbed, fused into a ring at the base which separates as a unit, 5/16 to 7/16 inch long.

Habitat

Cultivated and disturbed or degraded moist sites in meadows, grassland, woodland, and riparian communities, and roadsides; within elevations that generally range below 7,500 feet.

Propagation/Phenology

Reproduces only by seed; plants can produce an average of 20,000 to 40,000 seeds; most seeds germinate in fall after the first rains, but some seeds can germinate year round under favorable moisture and temperature conditions; buried seed can remain viable in the soil seed bank for at least 7 years and possibly to 20 years or more; yearly seed production and seed dormancy are highly variable depending on environmental conditions.

Comments

Native to Europe and the Mediterranean region; severe infestations can form tall, dense, impenetrable stands, especially in fertile soils. Arizona prohibited/restricted noxious weed, New Mexico Class A noxious weed, and Oklahoma noxious weed.

Scotch thistle flower head and winged stems (left)
© BM

Scotch thistle flower heads
© SD

Scotch thistle foliage
© RV

Scotch thistle plant (right)
© SD

Spiny Plumeless Thistle

Carduus acanthoides L. (Aster family, Asteraceae)

Description

Multi-stemmed biennial (or winter annual) forb to 5 feet tall; openly branched stems erect, spiny-winged from leaf bases; taprooted; plants exist as basal rosettes until flowering shoots develop at maturity.

Leaves: Basal leaves opposite, elliptic to lanceolate, pinnately lobed, with prickly-toothed margins; stem leaves alternate, with bases that extend down the stem forming spiny wings (decurrent); stems strongly winged, glabrous to lightly woolly; leaves 1-pinnate lobed, typically sparsely hairy, lower leaves mostly 4 to 8 inches long.

Flowers: Flowers May to August; purple flower heads spherical 3/8 to 1-1/8 inches in diameter, one to numerous on stalks less than 3/4 inch long; flower head bracts glabrous to pubescent, tips erect to spreading; flower head receptacles flat, densely covered with cream-colored bristles.

Fruits: Glossy golden to brown achenes elliptic, less than 1/8 inch long; curved, slightly compressed; cream-colored, 3/8 to 1/2 inch long, pappus bristles are numerous; united at the base to form a ring and are deciduous as a unit.

Habitat

Dry, well drained, cultivated and disturbed or degraded sites in meadows, grassland, chaparral, woodland, forest, and riparian communities, and roadsides within elevations that generally range from 4,200 to 8,800 feet.

Propagation/Phenology

Reproduces by seed; seeds appear to lack an after ripening period. Seeds typically germinate late summer through spring, depending on environmental conditions. Seeds can germinate in constant heavy shade, but seedlings seldom reach maturity under this condition; additionally, viable seeds rarely persist in the soil seed bank due to decomposition and seed predation by insects, mammals, and birds.

Comments

Native to Europe; serious infestations are often associated with sandy, fertile soils; this species and musk thistle readily hybridize with one another, and plants with intermediate characteristics may be found where their ranges overlap. Arizona prohibited noxious weed.

Spiny plumeless thistle flower heads, winged stems, and foliage
© TP

Spiny plumeless thistle flower heads
© GLP

Spiny plumeless thistle plants (above)
© TP

Spiny plumeless thistle basal rosette
© TP

Spotted Knapweed

Centaurea stoebe L. ssp. micranthos (Gugler)
Hayek (Aster family, Asteraceae)

Description

Multi-branched biennial or short-lived perennial forb, 39 inches tall, with spiny or comb-like flower head bracts; stoutly taprooted; plants exist as basal rosettes until erect, highly branched flowering stems are produced in late spring/summer.

Leaves: Cotyledons spatulate to oval; rosette leaves pinnate-divided without straw-colored spines at their centers; leaves alternate, resin-dotted, lower stem leaves deeply 1 to 2 pinnate-lobed, 4 to 8 inches long; upper stem leaves wingless, mostly pinnate-divided, 3/8 to 3/4 inch long. Foliage variously covered with short to medium interwoven gray hairs; new leaves green and covered with minute bristly hairs.

Flowers: Flowers June to October; 1/4 to 1/2 inch diameter flower heads, solitary or several with 30 to 40 white, pink or purple flowers per head, 1/2 to 1 inch long; pale green or pink-tinged flower head bracts overlapping in several rows, 5/8 to 3/4 inch long, tips dark, comb-like, not spine-tipped.

Fruit: Pale brown achenes oblong, 1/8 to 3/16 inch long, finely hairy, apex flattened and tapered to a rounded, laterally notched base; pappus bristles less than 1/8 inch long.

Habitat

Cultivated and disturbed or degraded sites in meadows and grasslands within elevations that generally range below 7,000 feet.

Propagation/Phenology

Reproduces by seed, up to 40,000 per plant; germination occurs over a broad range of environmental conditions; in addition to seeds, spotted knapweed can reproduce vegetatively from lateral roots just below the soil surface.

Comments

Native to Europe; spotted knapweed is a very competitive and aggressive plant with allelopathic effects; stands of spotted knapweed may persist indefinitely once established. Arizona prohibited/restricted noxious weed and New Mexico Class A noxious weed.

Spotted knapweed flower head
© JC

Spotted knapweed dried bracts and flower heads (below)
© SD

Spotted knapweed plants (above)
© SD

Spotted knapweed foliage (right)
© OSWL

Squarrose Knapweed

Centaurea virgata Lam. ssp. squarrosa (Willd.)
Gugler (Aster family, Asteraceae)

Description

Erect, multi-branched perennial forb with a woody base, 20 inches tall, with spiny or comb-like flower head bracts; stoutly taprooted; plants exist as basal rosettes until erect, highly branched flowering stems are produced in late spring/summer.

Leaves: Cotyledons spatulate to oval; rosette leaves pinnate-divided; leaves resin-dotted; upper stem leaves entire, linear or bract-like, mostly lacking at flowering, 3/8 to 3/4 inch long.

Flowers: Flowers June to August; flower heads solitary or several; pink to pale purple flowers average 4 to 8 per head, 1/4 to 3/8 inch long; flower head bracts roughly 1/4 inch long, pale green to straw colored sometimes purple-tinged, spine-tipped; central spine usually reflexed downward to 1/8 inch long.

Fruit: Pale brown achenes oblong, 1/8 to 3/16 inch long, apex flattened and tapered to a rounded, laterally notched base, finely hairy, roughly 2 to 4 per head, pappus bristles less than 1/8 inch long or lacking.

Habitat

Cultivated and disturbed or degraded rangelands and roadsides within elevations that generally range below 8,000 feet.

Propagation/Phenology

Reproduces by seed, germination can occur over a broad range of environmental conditions; seedling emergence is typically highest after the first fall rains; mortality of seedlings that emerge in spring can be high when conditions become dry after emergence; most seedlings emerge from seeds at or near the soil surface; plants produce fewer viable seeds in dry years; infestation density correlates with the age of the population and degree of disturbance.

Comments

Native to Asia; squarrose knapweed is a very competitive and aggressive plant with allelopathic effects; stands of squarrose knapweed may persist indefinitely once established. Arizona prohibited noxious weed.

Squarrose knapweed flower heads (left) © SD

Squarrose knapweed flower heads (right) © SD

Squarrose knapweed plants (above) © SD

Squarrose knapweed foliage (right) © JMD

Tall Morning-glory

Ipomoea purpurea (L.) Roth
(Morning-glory family, Convolvulaceae)

Description

Tall morning-glory is a warm-season trailing or climbing annual vine, capable of reaching 6-1/2 feet in length. The stems twine in a dextral (having the whorls coiling clockwise) fashion.

Leaves: Leaves are often heart shaped, sometimes three lobed (both leaf types can occur on the same plant); from 3/8 to 4-5/16 inches long and 3/8 to 4-3/4 inches wide; alternate along the stem; minute flattened hairs usually cover the leaf surface, but sometimes leaves are nearly hairless; petioles range from 3/8 to 5-1/2 inches long.

Flowers: Flowers June to November; flowers grow singly or in clusters of two to five showy, funnel-shaped, stalked, purple, blue, pink, white, or bi-colored; 1 to 3 inches long by 1 to 2 inches wide; sepals at the base of the flower approximately 3/8 to 5/8 inch long.

Fruit: The fruit is a subglobose to ovoid dark brown to black capsule that is approximately 3/8 inch in diameter and up to 1 inch long; contains 3 to 6 wedge-shaped seeds, 3/16 to 5/16 inch long, dull with a granular surface.

Habitat

Cultivated and disturbed or degraded sites in moist meadows and riparian communities, and roadsides within elevations that generally range from below 7,500 feet.

Propagation/Phenology

Reproduces by seed; one plant can produce up to 26,000 seeds; germinating at depths of 4 inches or more, much deeper than most annuals.

Comments

Native to Central America; once established, tall morning-glory is difficult to control. Arizona prohibited noxious weed.

Tall morning-glory
funnel shaped flower
© PJA

Tall morning-glory flowers
and foliage (both heart-
shaped and lobed leaves)
© RRB

Tall morning-glory flowers
and foliage
© JHM&TB

Tall morning-glory flower and foliage
© PTL

Teasel

Dipsacus fullonum L. (Teasel family, Dipsacaceae)

Description

Erect, stout, biennial forb, 3 to 6 feet tall; stem striate, angled, prickly on the angles and becoming more so upward; large taproot.

Leaves: Basal and stem leaves opposite, simple, blades may be prickly, especially on the midnerve below, otherwise glabrous; basal leaves oblong to oblanceolate, margins crenate, apex obtuse to acute; cauline leaves 1/2 to 1-1/4 inches long, the lower blades crenate to serrate, becoming entire upward, often ciliate; stem leaves are perfoliate (each pair of opposite leaves is joined at the point where they attach to the stem, giving the appearance of a single leaf pierced by the stem).

Flowers: Flowers July to October; inflorescence an erect, flower heads are ovoid to cylindrical, 1-1/4 to 4 inches long, flowers numerous; peduncles long, prickly; flower head bracts curving upward, linear, elongate, unequal, the longer ones often surpassing the heads; prickly, the apex spine-tipped; bracts of the receptacle tapering to an acuminate, stout, straight awn that surpasses the flowers; slender flowers lavender, pale purple or sometimes white, 4-lobed, 1/2 to 3/4 inch long.

Fruit: Achenes 1/4 inch long, 4-angled and appressed-hairy.

Habitat

Cultivated and disturbed or degraded sites in moist meadows and riparian communities, and roadsides within elevations that generally range from 4,700 to 8,700 feet.

Propagation/Phenology

A single teasel plant can produce over 2,000 seeds; up to 30 to 80 percent of the seeds may germinate or may remain viable for at least 2 years; typically seeds do not disperse far; most seedlings will be located near the parent plant.

Comments

Native to Europe; teasel flowers open in an unusual pattern; a band of flowers opens first around the middle of the head, then the blooms progress both up and down and eventually form two bands; the fusion of the two leaf bases at the stem forms something of a "cup" that catches and holds rainwater. New Mexico Class B noxious weed.

Teasel flower head
© LR

Teasel flower heads, stems, and foliage (below)
© LR

Teasel basal rosettes
© SD

Teasel stem and leaf arrangement
© BR

Carolina horsenettle © OSWL

Bigleaf Periwinkle

Vinca major L. (Dogbane family, Apocynaceae)

Description

Bigleaf periwinkle is a perennial, deep-rooted vine with non-flowering, scrambling, or trailing stolons up to 3 feet long and flowering vertical stems 1-1/2 feet high. The succulent stems, with milky juice, are dark green and become somewhat woody at the caudex.

Leaves: Leaves are semi-evergreen, in pairs opposite each other along the stems, have a waxy cuticle, and are heart shaped to triangular, 1-1/2 to 3 inches long.

Flowers: Flowers March to June; flowers solitary in the leaf axils, on long pedicels; calyx divided nearly to the base, the 5 lobes linear, with short bristles on the margins; corolla purplish-blue, with long, narrow tube and 5 widely spreading, truncate lobes, 1-1/8 to 2 inches wide; corolla tube about 3/4 inch long, crested and hairy in the throat.

Fruit: Fruits are slender, cylindrical follicles up to 2 inches long; follicles dry, split, and release 3 to 5 seeds.

Habitat

Bigleaf periwinkle occurs in riparian areas, forests, and grasslands; it is also associated with sites linked to human activities, including old homesteads, roadsides, waste places, and other highly disturbed areas, within elevations that generally range below 7,500 feet.

Propagation/Phenology

Reproduces primarily by vegetative regeneration and limited seeding.

Comments

Native to Mediterranean Europe, Asia Minor, and northern Africa; bigleaf periwinkle is most problematic to managers in riparian or canyon bottom habitats. The tendency of bigleaf periwinkle to form dense mats under woody canopies may lead to the exclusion of native species. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Bigleaf periwinkle foliage
© LR

Bigleaf periwinkle flower
© LR

Bigleaf periwinkle flower
and foliage
© ML

Bigleaf periwinkle flower and foliage
© LR

Carolina Horsenettle

Solanum carolinense L. (Potato family, Solanaceae)

Description

Erect to sprawling perennial herb to subshrub with deep creeping roots, and yellowish prickles on the stems, to 39 inches tall.

Leaves: Stems usually prickly, openly branched; leaves are alternate, simple, dull green, ovate to lanceolate, 2 to 6 inches long, usually with wavy to 5 to 7 coarse-lobed margins; foliage is covered with minute star-shaped hairs, typically yellowish to straw-colored.

Flowers: Flowers May to September; flower clusters are modified cymes that are raceme-like, with 5 to 20 pale violet or white star-shaped, 5-lobed flowers, 3/4 to 1-1/8 inches in diameter.

Fruit: Fruit is a yellow 5/16 to 3/4 inch diameter berry with 40 to 170 seeds; seeds are yellowish to orange-brown; small 1/16 to 1/8 inch in diameter; smooth and glossy.

Habitat

Cultivated and disturbed or degraded sites in grassland and woodland communities, and roadsides; grows best on sandy, well-drained soils within elevations that generally range from 4,000 to 5,000 feet.

Propagation/Phenology

Reproduces by seed and vegetatively from creeping roots and root fragments; one plant can produce up to 5,000 seeds; most seed is dormant at maturity and requires a cool, moist period to germinate spring through summer; roots generate new shoots in spring.

Comments

Native to the central and eastern United States and northern Mexico; once established, Carolina horsenettle colonies are difficult to control or eliminate. Arizona prohibited noxious weed.

Carolina horsenettle flowers and foliage
© TB

Carolina horsenettle flowers
© OSWL

Carolina horsenettle fruit and stem
© TB

Carolina horsenettle plant
© OSWL

Chicory

Cichorium intybus L. (Aster family, Asteraceae)

Description

Chicory is a deeply rooted erect, branching, biennial or perennial, warm-season forb, from 1 to 6 feet tall with milky sap. Basal rosette of leaves arise from a long fleshy taproot. Stem color is green or reddish.

Leaves: Basal leaves in rosette; basal and cauline leaves are alternate, clasping, and hairy, 2 to 10 inches long and 1/2 to 2-3/4 inches wide; basal leaves spatulate in outline, irregularly saw toothed or pinnately incised, with the lobes or teeth hooked backward; stem leaves become reduced, sessile, entire to toothed.

Flowers: Flowers June to August; blue, rarely white or pink, flower heads are relatively large, 1 to 1-9/16 inches in diameter, borne in widely spaced sessile clusters (1 to 3) along the branches or at the apex of short branches; ray flowers are blunt and 5 toothed at the apex. Involucre 3/8 to 5/8 inch high, the bracts in two series, the outer about half as long as the inner; pappus of narrow, minute scales.

Fruit: Achenes weakly 5-angled, 1/16 to 1/8 inch long, tipped with a crown of minute scales.

Habitat

Waste places and disturbed sites, especially along roadsides typically within elevations that generally range from 4,000 to 8,000 feet.

Propagation/Phenology

Reproduces by seed; can produce as many as 425,000 seeds per pound.

Comments

Native to southern and central Europe and western Asia; chicory has beautiful flowers and a very attractive growth habit; however, it is a good example of a nonnative species that remains sparsely scattered during early population establishment and then within a few years can show up in masses far and wide; New Mexico Class B noxious weed.

Chicory plant(s) flowering stems and foliage
© RAH

Chicory flower head and foliage
© AV

Chicory flower head
© BR

Chicory plant basal foliage
© RV

Oxeye daisy © MEH

African Rue

Peganum harmala L. (Creosote-bush family, Zygophyllaceae)

Description

Bushy, much-branched perennial forb with short creeping roots to 32 inches tall; stems stiff, erect, branches angled above, glabrous.

Leaves: Leaves are alternate, fleshy, bright green, 3/4 to 2 inches long, irregularly divided 3 times or more into linear segments; stipules bristle-like.

Flowers: Flowers April to September; flowers have 5 white petals, about 1 inch in diameter and solitary on stalks 3/4 to 2 inches long or more in the leaf axils; the 5 sepals are linear, about 9/16 inch long; the 5 petals are oblong, also about 9/16 inch long.

Fruit: Capsules spherical, leathery, 5/16 to 9/16 inch in diameter, orange-brown at maturity; 3-chambered, and opening by 3 valves at the apex to release numerous dark brown to black angular seeds, 1/8 to 3/16 inch long.

Habitat

Cultivated and disturbed or degraded dry open sites in meadows and grassland communities, and roadsides within elevations that generally range below 4,500 feet.

Propagation/Phenology

Reproduces primarily by seed, but roots can produce new shoots, especially when severed; most seed falls near the parent plant; seeds can germinate under fairly saline conditions.

Comments

Native to the Mediterranean region and Middle East; heavy infestations of African rue are difficult to control. Arizona prohibited noxious weed and New Mexico Class B noxious weed.

African rue flower
© GAC

African rue
foliage
© JMT

African rue fruit
and leaves
© DB

African rue
plants in
flower
© GAC

Broadleaved Pepperweed

Lepidium latifolium L. (Mustard family, Brassicaceae)

Description

Erect perennial forb 1 to 6-1/2 feet tall, with white flowers and extensively creeping roots; plants are highly competitive and typically form dense colonies that displace native vegetation.

Leaves: Root crown and lower stems weakly woody; bright green to gray-green foliage is glabrous; leaves are alternate, lanceolate to elliptic or oblong in shape; basal leaves to 12 inches long and 3-3/16 inches wide, with serrate margins and on long stalks 1-3/16 to 5-7/8 inches long; stem leaves reduced, sessile, tapered at the base, margins entire to weakly serrate.

Flowers: Flowers May to September; flowering inflorescences pyramidal to rounded on top; 4 spoon-shaped petalled flowers are white and in dense clusters; less than 1/16 inch long; sepals oval, also less than 1/16 inch long, covered with long simple hairs; stamens 6, 4 long and 2 short.

Fruit: Pods (silicles), 2-chambered, round to slightly ovate, slightly flattened, lacking a notch at the apex, 1/16 inch long, covered with long simple hairs; stigma sessile, persistent with the pod; stalks much longer than pods, glabrous or sparsely pubescent; seeds 2 per fruit, ellipsoid, slightly flattened, less than 1/16 inch long or wide; reddish-brown, with a shallow groove on each side and minutely granular surface.

Habitat

Cultivated and disturbed or degraded moist open sites in meadows, grassland, woodland, forest, and riparian communities, and roadsides within elevations that generally range from 4,100 to 7,900 feet.

Propagation/Phenology

Reproduces vegetatively from vigorously creeping long, thick roots, root fragments and by seed; plants usually produce abundant, often highly viable seed.

Comments

Native to Eurasia; heavy infestations of broadleaved pepperweed are difficult to control; roots do not hold soil together very well, allowing erosion of riverbanks and streambanks. New Mexico Class B noxious weed.

Broadleaved pepperweed flowers (left) © MEH

Broadleaved pepperweed plants (right) © SD

Broadleaved pepperweed roots © SD

Broadleaved pepperweed foliage © PTL

Field Bindweed

Convolvulus arvensis L.
(Morning-glory family, Convolvulaceae)

Description

Vine-like perennial forb, 1 to 4 feet long, with an extensive system of deep creeping roots and rhizomes; stems twine around and over other plants or trail along the ground, often forming dense tangled mats; roots are cord-like, white, fleshy and brittle.

Leaves: Leaves are alternate, simple, short-stalked, arrowhead-shaped to oblong or round, tips often rounded, typically 3/4 to 1 inch long and 3/8 to 1-3/8 inches wide, glabrous or sparsely covered with short hairs, dull green, sometimes covered with a whitish powdery bloom; basal lobes more or less pointed, often flared outward; leaf size and shape vary greatly depending on environmental conditions such as light intensity, soil moisture, and frequency of defoliation.

Flowers: Flowers April to October; flowers axillary, solitary or in cymes of 2 to 4, on stalks 3/4 to 2-3/8 inches long; white or pinkish corollas funnel-shaped, 9/16 to 1-3/16 inches long, pleated and spiraled in bud; calyx bell-shaped, usually less than 3/16 inch long; flowers open for 1 day.

Fruit: Capsules spherical, inflated, 5/16 inch in diameter; seeds few per capsule, variable in shape, but typically obovate, slightly compressed, more less 3-sided in cross-section, less than 3/16 inch long, dull dark gray-brown, covered with small, rough, irregular bumps.

Habitat

Cultivated and disturbed or degraded sites in grassland, chaparral, woodland, forest, and riparian communities, and roadsides within elevations that generally range from 3,500 to 10,000 feet.

Propagation/Phenology

Reproduces by seed and vegetatively from deep creeping roots and rhizomes; undisturbed patches can expand their radius up to 33 feet per year; root fragments as small as 2 inches can generate new shoots.

Comments

Native to Europe; once established, field bindweed infestations

are very difficult to control. Arizona prohibited/regulated noxious weed and Texas noxious plant.

Field bindweed foliage (left)
© MEH

Field bindweed flower, stem, and leaves (below)
© TH

Field bindweed plants in bloom (left)
© TH

Field bindweed plants
© MEH

Hairy Whitetop

Cardaria pubescens (C. A. Mey) Jarmolenko
(Mustard family, Brassicaceae)

Description

Multi-stemmed perennial forb, 18 to 20 inches tall; erect stems sparse to densely covered with simple short hairs; seed production is prolific; new shoots arise from buds on lateral roots or root fragments; establishes dense stands that exclude other vegetation.

Leaves: Gray-green, alternate, obovate, lanceolate, and oblong to elliptic; surfaces, especially lower, sparsely to densely covered with simple, short white hairs, margins irregularly toothed to entire; basal leaves short-stalked 3-1/2 inches long and 3/4 inch wide or less; sessile upper leaves are densely hairy with rounded to acute-lobed bases that clasp the stem.

Flowers: Flowers April to October; inflorescences often flat-topped; small (1/8 inch long), fragrant, white, 4-petaled flowers are numerous; sepals are covered with simple short hairs.

Fruits: Pods strongly inflated, spherical to ovoid in outline, 1/8 to 5/16 inch long and wide, covered with short hairs; style persistent, 1/16 to 1/8 inch long at the apex; seeds 1 to 2 per chamber, ovoid, slightly flattened, reddish-brown, less than 1/8 inch long and 1/16 inch wide.

Habitat

Cultivated and disturbed or degraded moist sites in meadows, grassland, chaparral, woodland, forest, and riparian communities, and roadsides; generally grows on alkaline to saline soils, but tolerates many soil types and moisture conditions within elevations that generally range from 3,000 to 8,000 feet.

Propagation/Phenology

Reproduces vegetatively from creeping roots and less importantly by seed; this species is an aggressive weed; mature plants develop extensive systems of persistent, deep vertical and horizontal roots to depths of 6-1/2 feet or more; root fragments generate new plants, but regeneration is poor in dry soils.

Comments

Native to central Asia; this species is difficult to distinguish from lens-podded hoarycress and whitetop in the seedling and vegetative states; hairy whitetop competes poorly with shrubs in natural communities. Arizona prohibited noxious weed and New Mexico Class A noxious weed.

Hairy whitetop clasping leaves and stem (left)
© MEH

Hairy whitetop fruit
© RO

Hairy whitetop flowers, clasping leaves, and stems (left)
© JMT

Hairy whitetop plants
© JMT

Horehound

Marrubium vulgare L. (Mint family, Lamiaceae)

Description

Horehound is an upright bushy, cool-season, perennial forb or subshrub, 9 to 30 inches tall. It has dense, white woolly 4-angled stems branching from a somewhat woody base. Both the stems and leaves are very aromatic and have a bitter taste.

Leaves: The opposite leaves are petioled 3/16 to 1-15/16 inches long, round to oval in outline, corrugated (wrinkled), 9/16 to 1-15/16 inch long and wide; pale green above and white woolly beneath, with coarsely-toothed margins.

Flowers: Flowers March to October; flowers small, white, tubular, 1/4 to 5/16 inch long, crowded into very dense, compact, round clusters around the stem in the leaf axil; flower clusters also occur at the ends of all the branches, and often extend for more than a foot on the stem; calyx is also tubular, with 10 spinelike teeth which curve downward and are hook tipped in age, calyx persistent, and encloses the 4-parted fruits.

Fruit: Fruit is a burlike, 4-parted nutlet, egg shaped, brown or dark gray, about 1/12 inch long, and somewhat 3-angled, surface has scattered dark granules; 1 seed per nutlet, less than 1/16 inch long.

Habitat

Cultivated and disturbed or degraded sites in deserts, uplands, mountains, and riparian habitats within elevations that generally range below 8,500 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to Europe; although somewhat bitter and possessing a unique, pungent flavor, the fresh or dried leaves are edible and can be used as a seasoning or flavoring, made into pleasant tasting and medicinal tea. Horehound is often included in herbal cough drops. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Horehound plant(s)
© LR

Horehound flowers and foliage
© KAR

Horehound flowers and foliage
© PJA

Horehound flowers and foliage
© PJA

Lens-podded Hoarycress

Cardaria chalepensis (L.) Hand.-Maz.
(Mustard family, Brassicaceae)

Description

Multi-stemmed perennial forb (may take on the appearance of a shrub), 8 to 25-1/2 inches tall; seed production is prolific; new shoots arise from buds on lateral roots or root fragments; establishes dense stands that exclude other vegetation.

Leaves: Gray-green, alternate, obovate, lanceolate, and oblong to elliptic; surfaces, especially lower, sparsely to densely covered with short white hairs, margins irregularly toothed to entire; basal leaves short-stalked; upper leaves sessile, with rounded to acute-lobed bases that clasp the stem, 3 inches long and 1 inch wide or smaller.

Flowers: Flowers April to August; inflorescences often flat-topped; small (3/16 inch long), fragrant, white, 4-petaled flowers are numerous; sepals are glabrous.

Fruits: Pods disc-shaped, round to broadly (ob)ovate or barely kidney-shaped in outline, 1/8 to 3/8 inch long, 1/8 to 1/4 inch wide, glabrous; style persistent, 1/16 to 1/8 inch long at the apex; seeds 1 to 2 per chamber, ovoid, slightly flattened, reddish-brown, less than 1/8 inch long and 1/16 inch wide.

Habitat

Cultivated and disturbed or degraded moist sites in meadows, grassland, chaparral, woodland, forest, and riparian communities, and roadsides; generally grows on alkaline to saline soils, but tolerates many soil types and moisture conditions within elevations that generally range from 3,300 to 6,000 feet.

Propagation/Phenology

Reproduces vegetatively from creeping roots and less importantly by seed. This species is an aggressive weed; mature plants develop extensive systems of persistent, deep vertical and horizontal roots to depths of 6-1/2 feet or more. Root fragments generate new plants, but regeneration is poor in dry soils.

Comments

Native to central Asia; this species is difficult to distinguish from hairy whitetop and whitetop in the seedling and vegetative states; lens-podded hoarycress competes poorly with shrubs in natural communities. Arizona prohibited noxious weed and New Mexico Class A noxious weed.

Lens-podded hoarycress flowers (below)
© TNC

Lens-podded hoarycress fruit (below)
© JMD

Lens-podded hoarycress plants
© MEH

Lens-podded hoarycress plants
© SM

Onionweed

Asphodelus fistulosus L. (Lily family, Liliaceae)

Description

Onionweed is a tufted, dark green annual or short-lived perennial monocot herb with hollow stem up to 27-1/2 inches tall. The root system has a series of tuberlike parts at the base of the stem.

Leaves: Leaves are basal; the plant takes the form of a large tuft of onionlike rounded or slightly flattened hollow leaves, 4 to 12 inches long; 3/16 inch in diameter; glabrous except on margins.

Flowers: Flowers February to May; the flowering inflorescence is a simple raceme or open panicle, 5-7/8 to 27-1/2 inches long, with widely spaced flowers; 3/16 to 1/2 inch wide with 6 tepals (petals and sepals) which are generally white or very pale pink with a neat central longitudinal stripe of brown to reddish-purple; flowers are diurnal, closing at night and in overcast or low light weather conditions.

Fruit: The fruit is a rounded capsule, 3/16 to 1/4 inch long, containing 6 seeds.

Habitat

Dry sandy or rocky disturbed sites such as waste places, pastures, and along roadsides and railroad rights-of-way within elevations that generally range below 4,600 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to Eurasia and North Africa; onionweed seeds prolifically and can establish large populations quickly and is drought resistant. Onionweed could be confused with some native onions (Allium L.); Federal (U.S.) noxious weed.

Onionweed plant(s)
© USDA1

Onionweed plant
© LR

Onionweed flowers (below)
© LR

Onionweed flowering inflorescence
© ST

Oxeye Daisy

Leucanthemum vulgare Lam. (Aster family, Asteraceae)

Description

Prostrate, shallow-rooted, perennial forb with stems that sprout laterally from creeping root stock; when in flower, height ranges from 12 to 36 inches tall and little branched. The root system is densely fibrous and forms offsets from short rhizomes.

Leaves: The central stem is glabrous to slightly hairy and often angular or furrowed; small tuft of basal leaves develops at the base of the plant, spatula-shaped, broadly toothed, and 2 to 5 inches long and 2 inches wide; while alternate leaves occur sparingly along the central stem, up to 5 inches long and 3/4 inch wide, becoming smaller as they ascend the stem, dark green on both sides, smooth, and glossy; lower leaves are often oblanceolate with slender petioles, while the middle to upper leaves are more oblong and often clasp the stem. Their margins are coarsely dentate, and some of the alternate leaves are often pinnatifid toward the base.

Flowers: Flowers May to August; 1 to 40, nearly naked stems end in a single daisy-like flower head, 1 to 2 inches across, with 15 to 35 white, oblong petalled ray flowers surrounding numerous tiny yellow, 5-lobed disk flowers; flower head receptacle noticeably flattened; at base of the flower head are several series of green floral bracts with membranous, brown margins that are brown and membranous.

Fruit: Fruit is a dark, oblong achene with 10 lighter colored ribs, less than 1/16 inch long; pappus lacking.

Habitat

Cultivated and disturbed or degraded sites on well-drained, but moist soils in meadows, grassland, woodland, and forest communities, and roadsides within elevations that generally range from 5,000 to 9,500 feet.

Propagation/Phenology

Reproduces both vegetatively and by seed; some estimates of total seed production per plant range from 1,300 to 4,000.

Comments

Native to Eurasia where it is allowed to grow undisturbed; oxeye daisy often forms dense colonies. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Oxeye daisy flower heads (below)
© MEH

Oxeye daisy plants (above)
© MEH

Oxeye daisy roots (above)
© SD

Oxeye daisy upper stems and foliage (left)
© PTL

Poison Hemlock

Conium maculatum L. (Carrot family, Apiaceae)

Description

Poison hemlock is a much branched, warm-season, biennial forb 5 to 8 feet tall; stems smooth, green to blue-green, hollow; stems usually spotted or streaked with red or purple on the lower half; large taproot, roots are long, forked, white to pale yellow and 1/2 to 3/4 inch in diameter; when crushed, the leaves and root emit a rank, unpleasant odor sometimes compared to that of parsnips or celery; extremely poisonous.

Leaves: Leaves are shiny green, finely pinnately divided 3 to 4 times; leaflets are segmented and 1/8 to 1/4 inch long; lower leaves on long stalks stem-clasping; upper leaves on short stalks.

Flowers: Flowers May to August; white flowers borne in many umbel-shaped clusters, each supported by a stalk; umbels 1-1/4 to 2 inches broad; flowers lack sepals.

Fruit: Fruit is small, about 1/8 inch long; contains 2 concave, light brown, ribbed seeds; prominent wavy ribs and absence of oil cells between the ribs are important characters for distinguishing this fruit from others of the same natural order of plants.

Habitat

Found on poorly drained soils, particularly near streams, ditches, and other surface water. It also appears on roadsides, edges of cultivated fields, and waste areas within elevations that generally range from 4,000 to 10,000 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to the Mediterranean region; poisonous property occurs in all parts of the plant, including the large taproot. New Mexico Class B noxious weed.

Poison hemlock flowering umbel © JDB

Poison hemlock fruit © JS

Poison hemlock plant © JS

Poison hemlock spotted main stem © JS

White Clover

Trifolium repens L. (Pea family, Fabaceae)

Description

White clover is a cool-season perennial with a prostrate, stoloniferous growth form, 5 to 8 inches long. Leaves and roots develop along the stolon at the nodes. It also develops a taproot.

Leaves: The alternate leaves are composed of 3 leaflets (trifoliate), which may or may not have a "crescent" or "watermark" on the upper surface; membranous stipules lanceolate to ovate, 5/32 to 13/16 inch long; leaf stalk long; leaflets obovate or oval, 3/16 to 13/16 inch long, finely toothed; flowering stalks 2 to 12 inches long.

Flowers: Flowers June to September; the flower heads, each consisting of 40 to 100 flowers, are borne on long stalks from the leaf axils; flowers white but may have a pink hue; flower stalks 2 to 12 inches long; flower heads spherical, 9/16 to 1 inch in diameter; flower stems less than 1/8 inch long, reflexed in age; flowers 3/16 to 3/8 inch long; calyx 1/8 to 3/16 inch long, tube white, teeth green; corolla 1/8 to 3/8 inch long, white, sometimes with pink tinge.

Fruit: The fruit is a legume, less than 3/16 inch long, with 4 to 5 seeds.

Habitat

White clover adapts only to soil with moderate to good moisture within elevations that generally range from 3,500 to 8,500 feet.

Propagation/Phenology

Reproduces by seed and by stoloniferous stems. White clover produces roughly 776,000 seeds per pound.

Comments

Native to Europe; white clover rapidly develops a deep fleshy taproot. Mature plants have roots 1 to 1-1/2 inches in diameter and 5 to 8 feet deep. Many large and numerous smaller branches, all well supplied with laterals, spread rather widely and penetrate deeply, furnishing the plant with an excellent absorbing system. White clover may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed making it a concern in riparian and moist meadow habitats. This species

generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

White clover plants (above)
© F&KS

White clover flowers, both fresh and mature (below)
© F&KS

White clover flowers (below)
© PJA

White clover flowers and foliage
© F&KS

White Sweetclover

Melilotus albus (L.) Lam. (Pea family, Fabaceae)

Description

Taprooted, erect, branched, annual, biennial, or short-lived perennial forb, 2 to 7 feet tall; larger plants branch frequently and are somewhat bushy in appearance, while shorter plants are less branched and rather lanky; stems are glabrous, furrowed, and angular; sometimes the lower stems are ribbed light red.

Leaves: The alternate compound leaves are trifoliate (cloverlike) and hairless; each leaflet is about 3/4 inch long, and 1/4 inch wide, oblong, oblanceolate, or obovate in shape, and dentate along the middle or upper margin; terminal leaflet has a short stalk at its base, while the lateral leaflets are nearly sessile; petiole of each compound leaf is about 1/2 inch long; there are a pair of small linear stipules at its base.

Flowers: Flowers April to September; spikelike racemes of white flowers are abundantly produced; each raceme is up to 6 inches long and has dozens of yellow to cream-colored flowers; flowers about 5/16 inch long; when fully open, it has a pealike floral structure with an upper standard and lower keel.

Fruit: Fruit is a small seedpod, less than 3/16 inch long, conspicuously cross-ribbed and contains 1 to 2 seeds; seeds are tannish-yellow and somewhat flattened and kidney shaped.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, and forest communities, and roadsides within elevations that generally range from 5,000 to 10,500 feet.

Propagation/Phenology

Reproduces by seed; well-developed plants may produce more than 1,000 seeds.

Comments

Native to Eurasia; white sweetclover is very similar to M. officinal (yellow sweetclover), which is another weedy species native to Eurasia; yellow sweetclover stems are glabrous, furrowed,

and angular; sometimes the lower stems are ribbed light red, and its slightly reticulated seedpods lack conspicuous cross ribs; otherwise, these two species are nearly identical; USDA Plants Database considers them synonymous. White sweetclover generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

White sweetclover trifoliate leaf
© G&AD

White sweetclover flowers
© EB

White sweetclover
plant(s)
© G&AD

White sweetclover
flower inflorescences
© JN

Whitetop

Cardaria draba (L.) Desv. (Mustard family, Brassicaceae)

Description

Multi-stemmed perennial forb, 18 to 20 inches tall; erect stems sparse to densely covered with simple short hairs; seed production is prolific; new shoots arise from buds on lateral roots or root fragments; establishes dense stands that exclude other vegetation.

Leaves: Gray-green, alternate, obovate, lanceolate, and oblong to elliptic; surfaces, especially lower, sparsely to densely covered with simple, short white hairs, margins irregularly toothed to entire; basal leaves short-stalked 3-1/2 inches long and 1-1/2 inches wide; sessile upper leaves are sparsely to densely hairy with rounded to acute-lobed bases that clasp the stem.

Flowers: Flowers March to July; inflorescences often flat-topped; small (3/16 inch long), fragrant, white 4-petaled, flowers are numerous; sepals are glabrous.

Fruits: Pods upside-down, heart-shaped to broadly ovate in outline, 1/8 to 3/16 inch long, 1/8 to 1/4 inch wide, glabrous; style persistent, 1/16 to 1/8 inch long at the apex; seeds 1 to 2 per chamber, ovoid, slightly flattened, reddish-brown, less than 1/8 inch long and 1/16 inch wide.

Habitat

Cultivated and disturbed or degraded moist sites in meadows, grassland, chaparral, woodland, forest, and riparian communities, and roadsides; generally grows on alkaline to saline soils, but tolerates many soil types and moisture conditions within elevations that generally range from 3,000 to 8,000 feet.

Propagation/Phenology

Reproduces vegetatively from creeping roots and less importantly by seed. Seedlings develop tap roots to a depth of 10 inches or more and lateral roots with shoot buds within 1 month. This species is an aggressive weed; mature plants develop extensive systems of persistent, deep vertical and horizontal roots to depths of 6-1/2 feet or more. Root fragments generate new plants, but regeneration is poor in dry soils.

Comments

Native to central Asia; this species is difficult to distinguish from lens-podded hoarycress and hairy whitetop in the seedling and vegetative states. Arizona prohibited/restricted noxious weed and New Mexico Class A noxious weed.

Whitetop flowers
© BR

Whitetop plant
© BR

Whitetop plants
© CE

Whitetop fruit
© JMD

Tansy ragwort © MS

Black Medick

Medicago lupulina L. (Pea family, Fabaceae)

Description

Shallow, taprooted, low, trailing winter annual or short-lived perennial forb, with prostrate or ascending stems up to 30 inches long; where thick stands develop, stems may become erect, obtaining heights of 18 to 24 inches; 4-angled stems are typically purple at the base, hairless or more rarely with some short hairs, although older stems become less hairy; they branch occasionally.

Leaves: Alternate, compound leaves are trifoliate (cloverlike); younger leaves, toward the stems tips, have short hairy petioles; older leaves have longer petioles (up to 1-3/16 inches long); paired stipules at petiole base are lanceolate to ovate and variable in size; leaflets are up to 9/16 inch long and about half as wide; medium to dark green, wedge shaped or obovate, hairy or nearly hairless, finely toothed with prominent veins.

Flowers: Flowers February to December; 2 to 8 small, bright yellow flowers are borne in clusters about 1/2 to 3/4 inch long; each flower is about 1/8 inch long; when fully open, it has a pealike floral structure with an upper standard and lower keel.

Fruit: Fruit is a spirally twisted, thick-walled pod; each pod is black, about 1/8 inch long and contains a single dark seed that is somewhat flattened and kidney shaped, less than 1/8 inch long.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, and forest communities, and roadsides within elevations that generally range from 4,000 to 8,000 feet.

Propagation/Phenology

Reproduces by seed; one well-developed, vigorous, plant may produce more than 1,000 seeds.

Comments

Native to Eurasia and Africa; black medick easily spreads and can form large colonies and where it is allowed to grow undisturbed, black medick may displace native species. Prior to fruiting, black medic could be confused with burclover. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Black medick flowers and foliage
© KAR

Black medick trifoliate leaf
© PJA

Black medick flowers
© RHM

Black medick plant(s)
© F&KS

Black Mustard

Brassica nigra (L.) W.D.J. Koch (Mustard family, Brassicaceae)

Description

Erect annual, taprooted forb, 2 to 8 feet tall; stems usually glabrous and glaucous, sometimes with scattered stiff hairs toward the base; upper stems terminate in narrow racemes of yellow flowers.

Leaves: The alternate leaves are 2 to 10 inches long, 1 to 6 inches wide, becoming smaller as they ascend the stems; lower leaves are pinnately lobed and obovate in outline, tapering to a long and rather stout petiole (not clasping), terminal lobe much larger than the lateral lobes, upper surface, often bristly with scattered hairs that are stiff, short, and white, lower surface usually glabrous, except for a few hairs along the central vein; upper leaves often lanceolate, broadly elliptic, or some other odd shape, 1 to 2 lobed or none.

Flowers: Flowers May to July; narrow racemes of yellow flowers, 6 to 24 inches long when fully mature; flower up to 5/16 inch across, consisting of 4 sepals and 4 yellow petals. The sepals are initially green, but become yellow while the flower blooms. The petals are well rounded toward their tips.

Fruit: Fruit is a silique, 5/8 inch long, tapering to a conical beak, appressed against the stalk of the raceme as it matures; petiole of silique (or flower) is about 5/16 inch long; seeds are dark brown or black.

Habitat

Black mustard occurs in dry disturbed sites such as waste places, pastures, and along roadsides and railroad rights-of-way within elevations that generally range below 7,000 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to Eurasia; black mustard seeds and foliage have a pungent taste. Black mustard grows profusely and produces allelopathic chemicals that prevent germination of native plants; in addition, the seeds contain an alkaloid and the sinapina the glucoside sinigrin. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Black mustard plant(s)
© F&KS

Black mustard plants (below)
© F&KS

Black mustard flowers
© F&KS

Black mustard fruit
© JMD

Burclover

Medicago polymorpha L. (Pea family, Fabaceae)

Description

Shallow, taprooted, low, trailing annual or short-lived perennial forb, with prostrate or ascending stems up to 30 inches long; where thick stands develop stems may become erect, obtaining heights of 18 to 24 inches; 4-angled stems are light green or reddish green, hairless or more rarely with some short hairs, although older stems become less hairy; they branch occasionally.

Leaves: Alternate, compound leaves are trifoliate (clover-like); younger leaves, toward the stems tips, have short hairy petioles; older leaves have longer petioles; paired stipules at petiole base are lanceolate to ovate and variable in size; leaflets are up to 9/16 inch long and about half as wide; medium to dark green, wedge-shaped or obovate, hairy or nearly hairless, finely toothed with prominent veins.

Flowers: Flowers April to September; 2 to 8 small, bright yellow flowers are borne in clusters about 1/2 to 3/4 inch long; each flower is about 1/8 inch long; when fully open, it has a pealike floral structure with an upper standard and lower keel.

Fruit: Fruit is a spirally twisted, hooked-spined, thick-walled pod; each pod is dark colored, about 1/8 inch long and contains a single dark seed that is somewhat flattened and kidney shaped, less than 1/8 inch long.

Habitat

Cultivated and disturbed or degraded sites in meadows, grasslands, woodlands, and forest communities, and roadsides within elevations that generally range from 4,000 to 8,000 feet.

Propagation/Phenology

Reproduces by seed; well-developed plants may produce more than 1,000 seeds.

Comments

Native to southern Europe; where it is allowed to grow undisturbed, burclover may displace native species. Prior to fruiting, burclover could be confused with black medic. Arizona prohibited/regulated noxious weed.

Burclover flower, stem, foliage, and fruit
© AD

Burclover flowers and foliage
© SM

Burclover fruit
© SM

Burclover flowers
© SM

Curveseed Butterwort

Ceratocephala testiculata (Crantz) Roth
(Buttercup family, Ranunculaceae)

Description

Decumbent to erect, cool-season annual, rarely branching at the base, usually less than 4 inches tall; covered with woolly hairs.

Leaves: Grayish-green leaves are attached at the base on petioles less than 1-3/16 inches long, leaf blades broadly spatulate in outline, 3/16 to 1-3/16 inches long; however, blades are divided into 2 to 3 linear segments.

Flowers: Flowers April to June; solitary yellow flowers on peduncles as long as or shorter than leaves; receptacle covered with densely matted hair; 5 green sepals 3/32 to 5/16 inch long, spreading, persistent in fruit, also covered with densely matted hair; 5 yellow petals 3/32 to 5/16 inch long, 3/16 inch wide or less, nonpersistent.

Fruit: Fruit is an achene; achene clusters ovoid to spheric in shape, 3/8 to 1-1/16 inch long, 5/16 to 3/8 inch wide; achenes plump, 1/16 to 3/32 inch long, less than 3/32 inch wide, finely covered with matted hair or glabrous; spinelike persistent beak 1/8 to 3/16 inch long, straight; when dry the seed pods are very prickly.

Habitat

Curveseed butterwort occurs in dry disturbed sites such as waste places, meadows and pastures, and along roadsides especially in semidesert and Great Basin grasslands, and in woodland and shrubland communities within elevations that generally range from 1,300 to 9,000 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to Eurasia; curveseed butterwort often occurs in dense mats which cover large areas of the ground making it highly competitive. Curveseed butterwort contains ranunculin, which changes into a highly toxic compound, protoanemonin, when the plant is crushed; it is highly toxic to sheep. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Curveseed butterwort plant
© GAM

Curveseed butterwort flower
© GAM

Curveseed butterwort fruit
© BM

Curveseed butterwort fruit
© DWT

Dalmatian Toadflax

Linaria dalmatica (L.) Mill. ssp. dalmatica
(Figwort family, Scrophulariaceae)

Description

Erect, single or multi-stemmed, clump or patch-forming perennial forb; 16 to 36 inches tall; with creeping roots and showy yellow flowers; flowers are borne in axils of an elongated dense or open raceme, with an erect or drooping tip.

Leaves: Leaves primarily alternate, but crowded and often appearing opposite or whorled, especially near the bases of stems; margins entire, sessile, linear; 7/8 to 1-5/8 inches long and 1/2 to 3/4 inch wide; palmately veined with an acute apex; upper leaves are conspicuously broad-based and clasping the stem.

Flowers: Flowers May to September. Flowers showy, bright yellow (sometimes white), snapdragon-like, 2-lipped, 5-lobed, with a long, straight, downward pointing spur near the base of the lower corolla tube; 1-3/8 to 2-1/8 inches long, including spur; throat and lower lip white- or orange-hairy; flowers in bud often purplish at apex.

Fruit: Round, 2-chambered capsule, 1/8 to 3/8 inch long; opening by irregular slits at the apex to release numerous black to brown, 1/16 inch long, ridged, pyramidlike seeds.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, and riparian communities, and roadsides within elevations that generally range from 4,400 to 10,000 feet.

Propagation/Phenology

Reproduces by seed (up to 500,000) and vegetatively from creeping lateral roots; plants develop an extensive system of vertical and lateral roots that produce new shoots; root fragments can produce new plants; plants can rapidly colonize a site by vegetative reproduction from creeping roots.

Comments

Native to southeast Europe; an extensive root system makes this plant difficult to control; Dalmatian toadflax and yellow toadflax can hybridize. Arizona prohibited/restricted noxious weed and New Mexico Class A noxious weed.

Dalmatian toadflax flowers (below)
© USU

Dalmatian toadflax flowers (above)
© LW

Dalmatian toadflax plants (right)
© BM

Dalmatian toadflax foliage
© BM

Dyer's Woad

Isatis tinctoria L. (Mustard family, Brassicaceae)

Description

Erect, multi-stemmed biennial, sometimes winter annual or short-lived perennial forb, 12 to 48 inches tall; immature taprooted plants exist as basal rosettes until flowering stems develop at maturity.

Leaves: Leaves are opposite, simple, petiolate, bluish-green, often covered with a powdery white bloom; midnerve conspicuously pale; rosette leaves oblanceolate to elliptic, 1-1/4 to 7 inches long and 1/2 to 1-5/8 inches wide, tips rounded, bases gradually tapered to stalk, 1/2 to 3/4 the length of the blade; margins weakly toothed to wavy. Stem leaves alternate, sessile, and broad to narrowly arrowhead-shaped with smooth margins, sometimes broadest near the tip; with short basal lobes clasping the stem.

Flowers: Flowers April to June; yellow 4-petaled, 1/4 inch wide flowers in flat-topped or umbrella-shaped clusters.

Fruit: Fruits are flat, teardrop shaped, 3/8 to 3/4 inch long and 1/4 to 5/16 inch wide, black to blue- or purplish-black at maturity, pendulous, and each contains a single seed.

Habitat

Cultivated and disturbed or degraded sites in grassland and woodland communities, and roadsides; often growing on dry, rocky, or sandy soils within elevations that generally range from 4,300 to 7,000 feet.

Propagation/Phenology

Reproduces by seed; most seed falls near the parent plants; seeds mature about 8 weeks after flower stem initiation.

Comments

Native to Europe; plants cut above the root crown can grow new shoots and may persist as short-lived perennials. Arizona prohibited noxious weed and New Mexico Class A noxious weed.

Dyer's woad flowers, immature (middle) and mature (bottom) fruit
© SD

Dyer's woad flowers
© SD

Dyer's woad plants
© SD

Dyer's woad plants
© JMD

Floating Primrose-Willow

Ludwigia peploides (Kunth) P.H. Raven ssp. montevidensis (Spreng.) P.H. Raven (Evening Primrose family, Onagraceae)

Description

Floating primrose-willow is a prostrate, glabrous to sticky villous, aquatic, perennial forb, rooting at the nodes, 20 to 120 inches long to 32 inches tall.

Leaves: Leaves are alternate, more or less clustered, 1/8 to 4 inches long, dark shiny green, net-veined (lateral veins 7 to 11 per side); leaf base narrowly wedge shaped; leaf apex acute to acuminate or obtuse, tip glandular; early growth consists of rosette-like clusters of rounded leaves on water surface; at flowering leaves lengthen to lanceolate or elliptic shape; petiole 3/16 to 1-3/8 inches long.

Flowers: Flowers May to October; yellow flowers solitary; five green sepals hairy, less than 1/16 inch long; five yellow petals; anthers in two whorls; ovary truncate at apex, dense pubescent with dry, short white hairs, sometimes restricted to the apex of the ovary; style yellow, densely long-hairy in lower half or higher; stigma lemon yellow.

Fruit: Fruit is a capsule 3/8 to 1-1/2 inches long, 1/16 to 3/16 inch in diameter, woody with thick walls, sometimes almost glabrous or sparsely or densely villous with short hairs often somewhat curved, somewhat five angled, scarcely narrowed at apex, abruptly narrowed at base, irregularly and tardily opening; seeds rectangular, wrinkled, dull brown less than 1/16 inch long.

Habitat

Wet sites such as ponds and creeks within elevations that generally range below 6,400 feet.

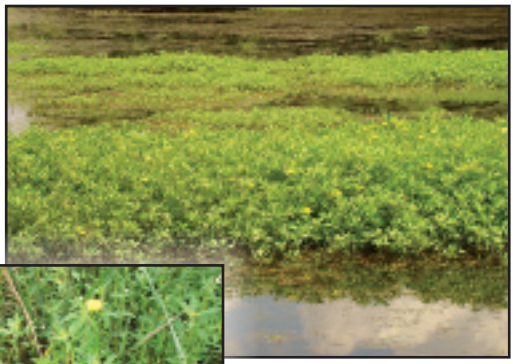
Propagation/Phenology

Reproduces vegetatively by stem fragmentation and by seed.

Comments

Native to South America; floating primrose-willow has two types of roots: one type absorbs nutrients and attaches the plant to the soil, and the other type is adventitious, located along the stems which

ensure oxygen uptake and favor rooting of plant fragments. Floating primrose-willow occasionally forms masses that can obstruct navigation. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.



Floating primrose-willow infestation
© GL

Floating primrose-willow plant(s)
© GL

Floating primrose-willow flower and foliage
© BB

Floating primrose-willow flower and foliage
© BB

Globe Chamomile

Oncosiphon piluliferum (L.f.) Källersjö
(Aster family, Asteraceae)

Description

Annual, taprooted forb, 12 to 24 inches tall; herbage has a very displeasing odor.

Leaves: Opposite, deeply lobed, 3/4 to 1-3/8 inches long, ultimate lobes linear to spatulate or oblanceolate, less than 1/16 inch wide, sparsely puberulent or set with stiff, slender bristles, minutely gland-dotted (in pits).

Flowers: Flowers March to May; yellow inflorescence is globelike, approximately 1/8 to 1/2 inch in diameter; flower heads borne singly or two to four in corymbiform arrays; peduncles 3/8 to 3-1/8 inches long; pappus is a very small crown of white scales to 1/32 inch long.

Fruit: Fruit is an achene, less than 1/16 inch long, less than 1/32 inch wide, curved, ribbed on the inner face.

Habitat

Globe chamomile occurs in dry disturbed sites such as waste places, pastures, and along roadsides within elevations that generally range below 3,500 feet.

Propagation/Phenology

Reproduces by seed. It is a prolific seeder and appears to germinate in all but the summer months.

Comments

Native to South Africa; foliage has a pungent odor. Globe chamomile shows weedy tendencies by invading especially disturbed areas and cultivated fields. Being an annual, globe chamomile is clearly a pioneer species of disturbed sites. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Globe chamomile flower head
© RS

Globe chamomile foliage
© X

Globe chamomile plant(s)
© G&AD

Globe chamomile flower heads
© LM

Leafy Spurge

Euphorbia esula L. (Spurge family, Euphorbiaceae)

Description

Erect, clump or patch-forming perennial with milky white latex juice, 12 to 36 inches tall; plants develop extensive creeping root systems and are highly variable; stems are more or less woody at the base; stems erect, glabrous or hairy.

Leaves: Leaves sessile, glabrous, mostly alternate (some may be opposite or whorled just below the inflorescence branches); leaves linear to narrowly oblanceolate, 7/8 to 4 inches long and typically about 1/4 inch wide, with acute or rounded tips, margins smooth; yellow-green inflorescence bracts opposite, heart to kidney-shaped, sessile, glabrous, shorter and broader than leaves; stipules absent.

Flowers: Flowers June to September; flowers are yellowish-green, small, arranged in small clusters and subtended by paired heart- or kidney-shaped yellowish-green bracts.

Fruit: Round, 3-chambered capsules, 1/8 to 1/4 inch long, smooth to granular with 1 yellow-brown to gray or mottled, smooth seed per chamber. Seeds ovoid to oblong, round in cross-section, 1/16 to 1/8 inch long.

Habitat

Cultivated and disturbed or degraded sites in fields, pastures, rangeland and riparian communities, and roadsides within elevations that generally range from 4,600 to 9,500 feet.

Propagation/Phenology

Reproduces by seed and vegetatively from extensively creeping roots; develops an extensive system of vigorous, spreading, rhizome-like long horizontal roots, short horizontal feeder roots, and short and long vertical roots; long horizontal roots and crowns produce many pink scaly buds from which new shoots can develop; most root buds develop within 1 foot of the soil surface, but a few can develop as deep as 10 feet.

Comments

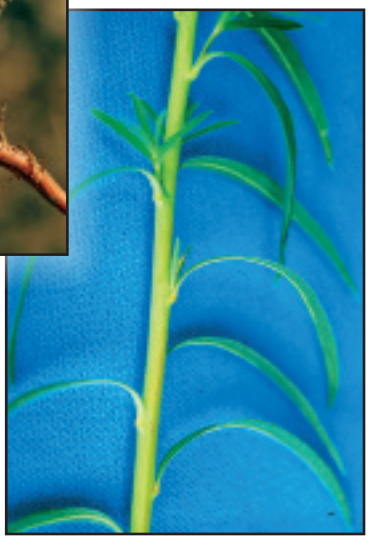
Native to southwestern Europe; mature capsules rupture and forcefully eject seeds up to 16 feet from the parent plant; infestations

are usually initiated by seed, but population expansion is mostly vegetative. Arizona prohibited noxious weed and New Mexico Class A noxious weed.

Leafy spurge plant
© JMR

Leafy spurge flowers
© USDA1

Leafy spurge rhizomes with characteristic pink nodes (above)
© SD



Leafy spurge stem and foliage (right)
© SD

Little Hogweed

Portulaca oleracea L. (Purslane family, Portulacaceae)

Description

Annual plant forms a spreading mat up to 6 inches tall and 2 feet across, branching frequently at the base in a radiating pattern from a taproot; stems are round, thick, and succulent; stems range in color from light green to reddish brown.

Leaves: The leaves are rather thick and succulent; shiny green; somewhat teardrop-shaped, up to 1 inch long and 1/2 inch wide, are alternate or nearly opposite and sessile along the stems.

Flowers: Flowers April to September; five yellow petalled flowers occur singly or in small terminal clusters, flowers about 1/4 inch across, consisting of floppy petals that open up for a few hours during bright sunny mornings.

Fruit: Each flower is replaced by a seed capsule that splits open around the middle to release the numerous small seeds; seeds dark brown or black, somewhat flattened, and nearly round or kidney-shaped; surface is granular, appearing somewhat coiled.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, and forest communities, and roadsides in practically any kind of soil containing loam, sand, or gravelly material within elevations that generally range from 4,000 to 8,500 feet.

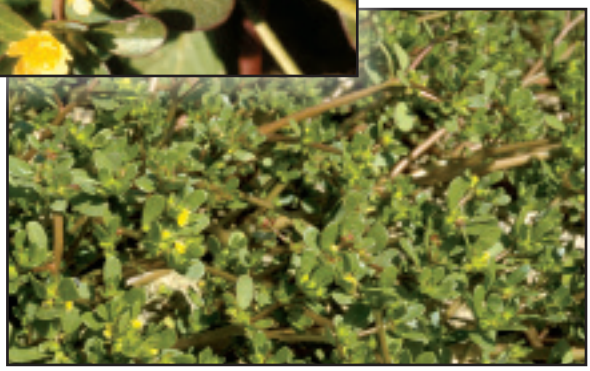
Propagation/Phenology

Reproduces by seed or vegetatively, as the broken-off stems can form rootlets to establish new plants.

Comments

Native to Europe; the fleshy stems and leaves provide this plant with a distinctive appearance; tolerance to heat and drought is excellent. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant. Arizona prohibited/regulated noxious weed.

Little hogweed flowers and foliage (left)
© USU



Little hogweed flowers, stems, and foliage
© PW2

Little hogweed seedlings (above)
© USU

Little hogweed plants
© F&KS

Malta Starthistle

Centaurea melitensis L. (Aster family, Asteraceae)

Description

Erect multi-branched annual or biennial forb to 39 inches tall, with spiny or comb-like flower head bracts; taprooted plants exist as basal rosettes until erect, highly branched flowering stems are produced in late spring/summer.

Leaves: Stem leaves alternate, mostly linear or narrowly oblong to oblanceolate, margins smooth or wavy; leaf bases extend down the stems and give stems a winged appearance; wings to 3/16 inch wide; foliage grayish-green; leaves evenly covered with thick stiff hairs and minute resinous dots, and sparsely covered with fine white cottony hairs that do not hide the stiff hairs and resinous dots; new leaves are often densely covered with fine cottony hairs.

Flowers: Flowers April to December; heads ovoid, spiny, solitary on stem tips, consist of numerous yellow 7/16 to 9/16 inch flowers; flower head bracts palmately spined, with one long central spine and three to four pairs of short lateral spines; sparsely covered with cottony hairs or with patches at the spine bases; central spine 1/4 to 5/8 inch long, slender, purple to brown tinged.

Fruit: Achenes barrel-shaped, compressed, laterally notched at the base, 1/16 to 1/8 inch long, finely pubescent, grayish to tan with slightly darker stripes, bases deeply notched, narrow, hook-like; pappus bristles pale tan, slender, stiff, unequal, less than 1/8 inch long.

Habitat

Cultivated and disturbed or degraded sites in grassland and woodland communities, and roadsides within elevations that generally range below 7,200 feet.

Propagation/Phenology

Reproduces by seed, production is highly variable, can produce 1 to 60 or more seeds per head and 1 to 100 heads or more per plant.

Comments

Native to southern Europe; Malta starthistle is a very competitive and aggressive plant with allelopathic effects; stands of Malta starthistle may persist indefinitely once established; looks very similar to yellow starthistle. New Mexico Class B noxious weed.

Malta starthistle
flower heads (left)
© JMR

Malta starthistle
flower head (right)
© JMR

Malta
starthistle
flower heads
and foliage
© JMD

Malta starthistle
basal rosette
© JMD

Mediterranean Sage

Salvia aethiopis L. (Mint family, Lamiaceae)

Description

Erect, coarse, herbaceous, warm-season, biennial or short-lived perennial forb with square stems and stout taproot, up to 3 feet tall; fine, woolly hairs cover the stems; aromatic (sage-like) when crushed.

Leaves: Rosette leaves petiolate and 4 to 12 inches long, ovate, coarsely toothed on the margins; densely covered with woolly grayish-white hairs; rosettes can be 1 to 4 feet in diameter; stem leaves are opposite, becoming smaller toward the stem tip.

Flowers: Flowers July to August; flowering stems are highly branched, with whorls of 5 to 10 flowers; flowers pale yellow to whitish and strongly 2-lipped, 5/8 to 3/4 inch long; sepals about 3/8 inch long; lobes spine-tipped, and covered with fine white woolly hairs.

Fruit: Fruit is an egg-shaped, smooth, brown nutlet, about 3/16 inch long; four nutlets per flower, enclosed by the persistent sepals; each nutlet produces four brown seeds about 1/8 inch long, with dark nerves.

Habitat

Cultivated and disturbed or degraded well drained sites in meadows, grassland, woodland, and riparian communities, and roadsides within elevations that generally range below 8,500 feet.

Propagation/Phenology

Reproduces by seed; single plant can produce 50 to 100,000 seeds; flowering stems typically break off at a point below the panicle and disperse seed by tumbling with the wind.

Comments

Native to Europe; mature Mediterranean sage plants do not resemble any native sages and are unlikely to be confused with them, however, rosettes of Mediterranean sage may be confused with wooly mullein rosettes. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Mediterranean sage flowers
© EL

Mediterranean sage in bloom
© LLB

Mediterranean sage rosette
© LA

Mediterranean sage infestation (below)
© EC

Perennial Sowthistle

Sonchus arvensis L. (Aster family, Asteraceae)

Description

Vigrous herbaceous perennial, with hollow stems, milky sap and creeping roots that produce new shoots, 2 to 3-1/2 feet tall, branching occasionally in the upper half; the bluish-green stems; lower stems leafy, upper stems can be glabrous or glandular-hairy; plants are highly competitive, persistent, and can rapidly colonize new sites by vegetative reproduction.

Leaves: Leaves alternate, highly variable, entire to deeply pinnate-lobed, 3/4 to 12 inches long, 3/4 to 4 inches wide, clasping the stem at the base with rounded basal lobes; lobes triangular, often curved backwards, usually 2 to 7 per side; terminal lobe typically longer, broader than lateral lobes; margins with small, spiny teeth; upper leaves sessile, often unlobed, lower leaves short-petioled, lobed.

Flowers: Flowers June to October; flower heads 1-3/16 to 2 inches wide, consisting of numerous bright yellow to orange-yellow 5-lobed ray flowers at the stem tips. Pappus bristles fine, soft, white, numerous, 5/16 to 7/16 inch long; flower head stalks and flower head bracts typically covered with stiff glandular hairs; bracts about 3/4 inch long; flower heads open about 2 to 3 hours after sunrise and close near noon.

Fruit: Fruit is an oblong, flattened, 3 to 4 angled achene, with two minutely wrinkled longitudinal ridges between angles, less than 1/8 inch long and less than 1/16 inch wide, light to dark brown.

Habitat

Cultivated and disturbed or degraded moist sites in grassland, woodland, and riparian communities, and roadsides in any type of non-compacted, fine, rich, and slightly alkaline to neutral soils within elevations that generally range from 5,000 to 6,000 feet.

Propagation/Phenology

Reproduces by seed and vegetatively; stoutly taprooted to depths of 9 feet, it also produces long spreading rhizomes.

Comments

Native to Europe; an extensive root system makes field sowthistle difficult to control. Arizona prohibited noxious weed.

Perennial sowthistle leaf base and stem
© MS

Perennial sowthistle plants
© SD

Pedrennial sowthistle mature and immature flower heads
© TH

Perennial sowthistle fruit
© DC

Perennial Wallrocket

Diplotaxis tenuifolia (L.) DC. (Mustard family, Brassicaceae)

Description

Erect, perennial subshrub or forb that forms a dense, bushy rosette with erect branched stems usually 12 to 48 inches tall, large taproot; foliage is aromatic when crushed.

Leaves: Basal rosette leaves are succulent, bluish to dark green, lance shaped, up to 2-3/4 to 5-7/8 inches long and 1-1/4 inches wide with irregular lobes, slightly pubescent; mainly confined to the lower parts of the stems and rosette; lower leaves are long-stalked, entire, coarsely lobed, or toothed; upper stem leaves are small, stalkless, unlobed, and almost bract-like.

Flowers: Flowers May to October; bright yellow flowers, 9/16 to 11/16 inch across; on long peduncles two to three times the length of the flowers; four rounded petals each about 5/16 to 3/8 inch long.

Fruits: Pod (silique) straight, flat, 3/8 to 2 inches long by 3/16 inch in diameter with a small beak-shaped end; seeds arranged in two rows; up to 60 seeds per fruit.

Habitat

Cultivated areas and disturbed or degraded sites in meadows, grassland and riparian communities, and roadsides; preferring shallow, porous calcareous soils within elevations that generally range below 4,000 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to Eurasia; edible, branches often used as an ingredient for salads. New Mexico Watch List species.

Perennial wallrocket flowers
© LR

Perennial wallrocket flower and fruit (above)
© LR

Perennial wallrocket foliage
© LR

Perennial wallrocket plants
© LR

Puncturevine

Tribulus terrestris L. (Creosote-bush family, Zygophyllaceae)

Description

Annual plant develops a mat of prostrate stems that range from 1 to 3 feet across; branches frequently at the base and occasionally elsewhere; round stems are initially green, but quickly become brown; they are densely covered with short hairs and sparsely covered with long hairs; root system consists of a stout taproot that can extend several feet into the ground.

Leaves: Compound leaves are evenly pinnate, 2 to 4 inches long, consisting of four to eight pairs of leaflets, with a hairy central stalk; dark, short petioled, green leaflets are up to 3/4 inch long and 1/4 inch wide, oblong, smooth along the margins, and sparsely to moderately hairy.

Flowers: Flowers April to October; flowers occur individually from the axils of the compound leaves on hairy pedicels about 1/2 to 3/4 inch long; each bright yellow 5-petalled flower is about 1/2 inch across, with five triangular green sepals; the petals are well rounded and longer than the sepals.

Fruit: Fruit is a stout-spined bur that divides into five wedge-shaped segments, gray to yellowish-tan, hairy, to 3/8 inch in diameter, flattened, lobed, with two stout spines 1/8 to 1/4 inch long and several prickles; seeds usually three to five per segment, remain enclosed within burs.

Habitat

Cultivated and disturbed or degraded moist sites in grassland, woodland, and riparian communities, and roadsides growing best on dry, sandy soils, but tolerates most soil types within elevations that generally range below 7,000 feet.

Propagation/Phenology

Reproduces by seed; plants typically bear numerous burs (average 200 to 5,000) and often forms colonies at favorable sites.

Comments

Native to the Mediterranean region; puncturevine is unlikely to be confused with other weeds. Arizona prohibited/regulated noxious weed.

Puncturevine flower and foliage
© F&KS

Puncturevine flower, foliage, and immature fruit (right)
© USU

Puncturevine mature fruit (left)
© USU

Puncturevine plants (below)

Rush Skeletonweed

Chondrilla juncea L. (Aster family, Asteraceae)

Description

Erect, multi-stemmed perennial (sometimes) biennial forb to 39 inches tall, with rigid, wiry flowering stems, milky sap; plants exist as basal rosettes until flowering stems develop at maturity and rosette leaves whither; taproot slender, deep, persistent, with short lateral branches along the length.

Leaves: Rosette leaves oblanceolate, 3/16 to 7/16 inch long and 3/8 to 2 inches wide, prostrate, typically lacking hairs; margins often purple-tinged and irregularly shallow-lobed, with lobes often pointing backward toward the leaf base, terminal lobe more or less sharp-pointed; upper stems mostly lack hairs, but typically have dense, bristly, downward pointing hairs at the base; stem leaves often absent or bract-like, but when present resemble reduced rosette leaves.

Flowers: Flowers July to November; flower heads axillary or terminal, sessile or short-stalked, and solitary or in interrupted spike-like clusters of 2 to 5; flower head consists of 7 to 12 bright yellow flowers 9/16 to 3/4 inch long (strap-shaped with 5-lobed corollas); flower head bracts cylindrical and in two unequal rows, the outer much smaller than the inner.

Fruit: Achene body oblong tapered at both ends, hairless, pale to dark brown, 3/16 inch long, with many lengthwise ribs, up to six small scales at the apex, surrounding the point of beak attachment; beak slender, 1/4 inch long, not including the pappus which consists of many equal, fine, white bristles about 1/4 inch long.

Habitat

Cultivated and disturbed or degraded sites in grassland and woodland communities, and roadsides on well-drained, sandy or gravelly soils within elevations that generally range below 5,500 feet.

Propagation/Phenology

Reproduces only by clones produced vegetatively from adventitious buds on roots and asexually by apomictic (without fertilization) seed; a single plant can produce 15,000 to 20,000 seeds per season.

Comments

Native to southern Europe; tolerates a wide variety of environmental conditions; immature plants look similar to dandelion and chicory. Arizona prohibited noxious weed.

Rush skeletonweed flower heads
© RO

Rush skeletonweed flowering stem
© SD

Rush skeletonweed plants
© USU

Rush skeletonweed basal foliage similar to dandelion and chicory
© JMD

Saharan Mustard

Brassica tournefortii Gouan (Mustard family, Brassicaceae)

Description

Erect, herbaceous, winter annual forb with a well developed, stout taproot, 4 to 46 inches tall; simple to many branched, especially above.

Leaves: Green leaves pinnately lobed to lyrate-pinnatifid with 8 to 14 pairs of lobes, basal leaves having more than 3 pairs; lower leaves petiolate, pinnately lobed to lyrate-pinnatifid, 3 to 22 inches long, margins serrate-dentate, tapered base; hirsute with stiff, white hairs, especially lower surfaces along midrib, veins, and margin; usually forming rosettes; somewhat persistent; upper leaves reduced, short petiolate to sessile, oblong to linear, base tapered, uppermost leaves bract-like.

Flowers: Flowers December to May; flowering inflorescences can range from 4 to 40 inches in height; inflorescences consist of anywhere from 6 to 20 flowers; flowers small, dull yellow, making them inconspicuous; petals consist of two pairs (cross-like shape), generally 1/4 inch wide by 1/8 inch long.

Fruit: Fruit are siliques, 1-1/4 to 2-9/16 inches long with an obvious beak at the tip of the pod; pods contain 14 to 30 very small red seeds.

Habitat

Especially common in areas with windblown sediments and disturbed sites in desert grasslands, desert scrub, and roadsides within elevations that generally range below 2,600 feet.

Propagation/Phenology

Reproduces by seed; single plant can produce 750 to 9,000 seeds.

Comments

Native to the Mediterranean region; Saharan mustard appears to suppress native wildflowers by monopolizing available soil moisture as it builds canopy and matures seed long before many native species have begun to flower. New Mexico Watch List species.

Saharan mustard flowers
© G&AD

Saharan mustard plants
© JMD

Saharan mustard rosette
© JMD

Saharan mustard downward turning hairs at base of stem
© JMD

Sicilian Starthistle

Centaurea sulphurea Willd. (Aster family, Asteraceae)

Description

Erect, multi-branched winter annual forb to 39 inches tall, with spiny or comb-like flower head bracts; taprooted plants exist as basal rosettes until erect, simple to highly branched flowering stems produced in late spring/summer.

Leaves: Stem leaves alternate, mostly linear or narrowly oblong to oblanceolate, margins toothed, or wavy; leaf bases extend down the stems and give stems a winged appearance; largest stem wings usually 1/4 to 5/16 inch wide; foliage yellowish-green, sparsely covered with stiff hairs.

Flowers: Flowers May to July; heads ovoid, spiny, solitary on stem tips, consist of numerous yellow 1 to 1-1/2 inch flowers; flower head bracts palmately spined, with one long central spine and three to five pairs of short lateral spines; glabrous; central spine 1/2 to 1 inch long, stout, yellowish to straw-colored at tip blackish to dark brown near base.

Fruit: Achenes barrel-shaped, compressed, laterally notched at the base, 1/4 to 3/8 inch long, glossy dark brown with faint tan stripes, bases deeply notched, narrow, broad, hook-like; pappus bristles dark brown to black, 1/4 to 5/16 inch long.

Habitat

Cultivated and disturbed or degraded sites in grassland and woodland communities, and roadsides within elevations that generally range below 3,300 feet.

Propagation/Phenology

Reproduces by seed, seeds fall near the parent plant or are dispersed to short distances with wind and to greater distances with human activities, animals, water, and soil movement; most seeds germinate after the first fall rains; plants exist as basal rosettes through winter and early spring until flowering stems develop in late spring or early summer.

Comments

Native to Europe; Sicilian starthistle is a very competitive and aggressive plant with allelopathic effects; stands of Sicilian starthistle may persist indefinitely once established. Arizona prohibited noxious weed.

Sicilian starthistle flower heads, stems, and foliage
© GFH

Sicilian starthistle flower head
© TF

Sicilian starthistle flower heads
© DD

Sicilian starthistle basal rosette
© CDFA

Spiny Sowthistle

Sonchus asper (L.) Hill (Aster family, Asteraceae)

Description

Spiny sowthistle is a taprooted, unbranched or branched, erect annual, or biennial that may reach 6 feet in height with bluish-green foliage. Stems are pentagonal in cross section and contain a milky sap.

Leaves: First leaves are egg shaped, approximately 1/8 to 5/16 inch long, and occur on petioles; young leaves form a basal rosette and have a whitish coating; older leaves alternate, from 2-1/2 to 12 inches long, 1/2 to 6 inches wide; deep shiny green above, glaucous below; generally hairless, egg shaped in outline and have undulating prickly margins; leaves on the flowering stem are alternate and have rounded lobes that clasp the stem; leaves contain a milky sap.

Flowers: Flowers May to October; yellow flowers occur in loose clusters at the ends of stems; flowers range from 1/2 to 1 inch in diameter, vase shaped.

Fruit: Fruit is an achene approximately 3/16 inch long, brown, wrinkled; mature seed have a white feathery pappus that collectively form a white orb similar to dandelion.

Habitat

Equally likely to occur in wetlands or nonwetlands; waste ground, disturbed sites, roadsides, and riparian areas within elevations that generally range below 8,900 feet.

Propagation/Phenology

Reproduces by seed; as many as 23,000 seeds can be produced per plant.

Comments

Native to Eurasia and North Africa; because of the long pappus on the fruit, spiny sowthistle can spread easily and quickly become established. Spiny sowthistle is somewhat variable in appearance because its leaves may be lobed or unlobed along the margins. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Spiny sowthistle flower heads and foliage (below)
© CE

Spiny sowthistle foliage
© SD

Spiny sowthistle flower head, mature flower heads, and immature flower heads
© JHM2

Spiny sowthistle flower heads and immature flower heads
© SD

Tansy Ragwort

Senecio jacobaea L. (Aster family, Asteraceae)

Description

Erect, yellow-flowered herbaceous biennial, perennial, or winter annual, taprooted, with alternate, pinnately lobed leaves; stems single or branched from the root crown to 5 feet tall.

Leaves: Foliage glabrous to lightly covered with long, wavy to cottony hairs, especially along midveins and on lower leaf surfaces and new growth; leaves highly variable evenly spaced on stems; lower leaves taper into indistinct petioles; upper leaves reduced, clasp stem; leaves deeply 1- or 2-pinnately dissected, mostly 2 to 8 inches long.

Flowers: Flowers July to September; showy yellow flower heads are numerous (20 to 60) in dense flat-topped clusters; flower heads are less than 1 inch across, ray flowers number 10 to 13, 5/16 to 1/2 inch long; flower head bracts are very small, 1/8 to 3/16 inch long, often with a black tip.

Fruit: Achenes cylindrical with shallow ribs, 1/16 to 1/8 inch long, light brown, often pubescent; pappus bristles numerous, soft, white, about twice the achenes' length; ray flower achenes glabrous with deciduous pappus, disk flower achenes pubescent on ribs, with persistent pappus.

Habitat

Cultivated and disturbed or degraded moist sites in meadows, grassland, woodland, and riparian communities, and roadsides; grows best on light, well-drained soils within elevations that generally range below 4,900 feet.

Propagation/Phenology

Reproduces by seed and vegetatively from roots; seeds can remain viable for at least 6 years under field conditions; root crowns and roots can develop new root and shoot buds, especially in response to disturbance or injury; root fragments can produce new shoots.

Comments

Native to Eurasia; tansy ragwort is an aggressive species and is highly poisonous to cattle, horses, and goats. Arizona prohibited noxious weed.

Tansy ragwort plants
© RO

Tansy ragwort flower heads (below)
© MS

Tansy ragwort fruit
© LJM

Tansy ragwort plants
© FD

Texas Blueweed

Helianthus ciliaris DC. (Aster family, Asteraceae)

Description

Erect perennial forb 1 to 2 feet tall, with bluish-green foliage and woody creeping roots; new shoots arising from root buds often create dense patches; plant has a strong pungent odor, especially when crushed.

Leaves: The sessile leaves are typically glabrous or hairy on the margins, sessile, bluish-green, covered with a whitish film, mostly opposite, oblong to lanceolate, 1-1/16 to 4 inches long; margins are wavy, entire to shallowly lobed; stems often sparsely covered with short stiff hairs.

Flowers: Flowers June to November; showy composite flower heads solitary on long peduncles; flower head receptacles 9/16 to 1 inch across; group of disk flowers rounded on top, yellowish; yellow ray flower corollas about 3/8 inch long; disk flower corollas about 3/16 inch long with red lobes; receptacle chaffy bracts hairy at the tips, entire or 3-lobed.

Fruit: Similar to those of commercial sunflower; however, achenes much smaller, about 1/8 inch long; pappus scales 2 to 4, about 1/16 inch long.

Habitat

Cultivated and disturbed or degraded moist open sites in meadows, grassland, woodland, forest, and riparian communities and roadsides; grows best on alkaline or saline soils within elevations that generally range from 3,000 to 8,500 feet.

Propagation/Phenology

Reproduces by vegetative clones from root buds and by seed; seed viability is often low, about 1 percent.

Comments

Texas blueweed is an aggressive perennial sunflower that is native to the grasslands of the south central United States. It naturally persists in low densities in native grasslands, but thrives in cultivated or heavily disturbed areas. Arizona prohibited/restricted noxious weed.

Texas blueweed flower head bracts
© RET

Texas blueweed flower head (below)
© RET

Texas blueweed plants (above)
© RET

Texas blueweed plants
© RET

Wild Mustard

Sinapis arvensis L. (Mustard family, Brassicaceae)

Description

Erect winter annual, taprooted forb, 8 to 39 inches tall; stems branched and striated, with coarse spreading hairs especially near the base; upper stems terminate in narrow racemes of yellow flowers.

Leaves: All leaves bristly; basal leaves petiolate (3/8 to 1-9/16 inches long), oblong, oval, lanceolate, lyrate, pinnatifid to dentate, 1-9/16 to 7-1/8 inches long, 3/4 to 2 inches wide; upper leaves much reduced, simple, and short petiolate to sessile but not auriculate clasping.

Flowers: Flowers March to October; racemes of stalked, bright yellow flowers; flowers 3/8 to 3/4 inch across, consisting of 4 sepal, and 4 yellow petals; sepals yellow or green, 3/16 to 9/32 inch long, and less than 3/32 inch wide, spreading at various angles, usually some downturned or horizontal, not appressed to the petal tube; petals are well rounded toward their tips, 5/16 to 11/16 inch long, and 1/8 to 5/16 inch wide.

Fruit: Fruit is a silique, 1-3/16 to 2 inches long with a beak 3/8 to 3/4 inch long that is flattened-quadrangular, valves of silique are glabrous or rarely bristly, three to five nerved; seeds smooth, less than 1/16 inch in diameter, reddish brown to black.

Habitat

Wild mustard occurs in dry disturbed sites such as waste places, pastures, and along roadsides and railroad rights-of-way within elevations that generally range below 6,000 feet.

Propagation/Phenology

Reproduces by seed.

Comments

Native to Eurasia; wild mustard seeds and the foliage have a pungent taste. Wild mustard grows profusely and contains chemicals of the class glucosinolates, including sinalbin; however, the leaves are edible at the juvenile stage of the plant. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Wild mustard flowers (above)
© BA

Wild mustard fruit
© JMD

Wild mustard plant(s)
© LR

Wild mustard stems (below)
© LR

Wooly Mullein

Verbascum thapsus L. (Figwort family, Schrophulariaceae)

Description

Biennial forb; during first year, plant consists of a rosette of basal leaves about 1 to 2 feet across; during second year, flowering stalk grows to 3 to 7 feet tall, usually unbranched; occasionally, one or two side stems may develop in the upper half of the plant; foliage is covered with downy white hairs.

Leaves: Leaves, thick, alternate up to 12 inches long and 4 inches wide, becoming progressively smaller and narrower as they ascend the central stem; obovate or oblong-ovate in shape, smooth or slightly crenate along the margins; covered with fine downy hairs; lower leaves taper gradually to a narrow winged base; upper leaves are partially wrapped or have wings around the stem or petiole and extend down along the stem; dense branched hairs provide the foliage with a color that is whitish or greyish green.

Flowers: Flowers June to August; flowering stalk ends in a dense spike of pale yellow 5-petalled flowers about 1/2 to 2 inches long and 3/4 of an inch across; 5 green sepals hairy; flowering starts at the bottom of the spike and progresses irregularly upward; only a few flowers are in bloom at a time.

Fruit: Plants produce small ovoid capsules less than 1/4 inch long that split in half; each capsule contains large numbers of minute brown seeds less than a 1/16 of an inch in size, marked with longitudinal ridges.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, chaparral, forest, and riparian communities, and roadsides within elevations that generally range from 3,500 to 10,000 feet.

Propagation/Phenology

Reproduces by seed; the plant is an extremely prolific seed bearer, a single plant may produce hundreds of capsules, each containing up to 700 or more seeds; up to 180,000 or 240,000 seeds total.

Comments

Native to Eurasia and Africa; once established, wooly mullein grows more vigorously than many native species; its growth can

overtake a site in short order. It is a prolific seeder and its seeds last a very long time in the soil; an established population of wooly mullein can be extremely difficult to eradicate. Rosettes of wooly mullein may be confused with Mediterranean sage rosettes. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Wooly mullein plants
© SD

Wooly mullein flowers
© MEH

Wooly mullein basal rosette (above)
© F&KS

Wooly mullein foliage (left)
© CM

Yellow Salsify

Tragopogon dubius Scop. (Aster family, Asteraceae)

Description

Yellow salsify is an erect, branched, annual, biennial, or short-lived perennial forb, 12 to 39 inches tall with milky sap. Taproots are stout, fleshy, thick, and long. In its first year(s), yellow salsify produces an erect rosette of grasslike leaves. Plants may remain vegetative for up to 10 years before flowering; after flowering, the plant dies.

Leaves: Leaves are alternate, clasping, linear, and grasslike with straight, pointed tips; mostly glabrous but with some loose, wooly hairs in the axils; 4 to 12 inches long and roughly 1/4 inch wide.

Flowers: Flowers May to September; inflorescence a single head on a long stalk, enlarged and hollow under the heads; heads solitary at the ends of branches, 1-1/2 inches wide with pale yellow ray flowers, bracts longer than the rays; involucral bracts in a single series, equal, about 13 in number, 15/16 to 1-9/16 inches long in flower, distinctly surpassing the pale, lemon-yellow, ligulate corollas, elongating to 1-9/16 to 2-3/4 inches long in fruit; pappus of a single series of whitish, uneven length, plumose bristles.

Fruit: Achenes slender, 15/16 to 1-7/16 inches long, gradually narrowed to a stout beak; mature seed have a white feathery pappus and may reach 4 inches long; collectively form a white orb similar to dandelion but much larger.

Habitat

Given a seed source and a canopy opening, yellow salsify is a potential inhabitant of nearly any vegetation or community type within elevations that generally range from 4,500 to 8,500 feet.

Propagation/Phenology

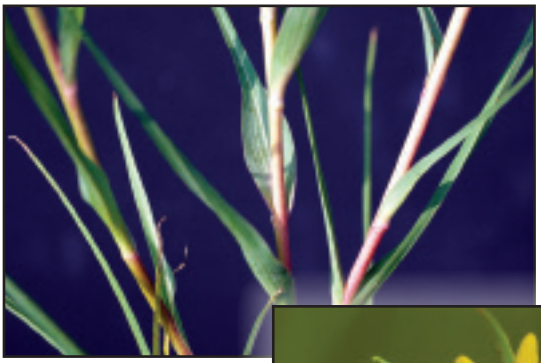
Reproduces by seed.

Comments

Native to southern and central Europe and western Asia; disturbed sites are common yellow salsify habitats, but persistence on disturbed sites is indefinite, and long distance seed dispersal from disturbed sites into relatively open, undisturbed sites is common. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

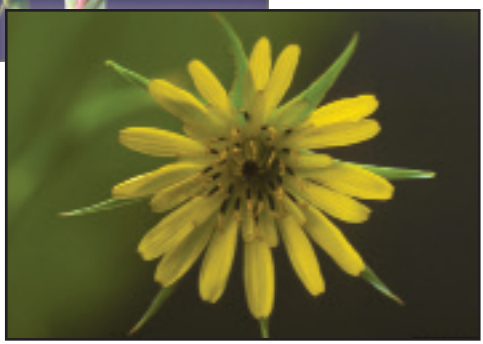
Yellow salsify plant with immature and mature flower heads
© WMC

Yellow salsify mature flower head (below)
© SD



Yellow salsify stems and foliage
© TW

Yellow salsify flower head (below)
© JC



Yellow Starthistle

Centaurea solstitialis L. (Aster family, Asteraceae)

Description

Erect, multi-branched annual (sometimes biennial) forb, to 6-1/2 feet tall, with spiny flower head bracts; stoutly taprooted plants exist as basal rosettes until erect, highly branched flowering stems are produced in late spring/summer.

Leaves: Stem leaves alternate, mostly linear or narrowly oblong to oblanceolate; margins smooth, toothed, or wavy; leaf bases extend down the stems and give stems a winged appearance; largest stem wings typically to 3/16 inch wide; lower stem leaves sometimes deeply pinnate-lobed; foliage grayish- to bluish-green, densely covered with fine white cottony hairs that partially hide thick stiff hairs and resinous dots.

Flowers: Flowers May to December; heads ovoid, spiny, solitary on stem tips, consist of numerous yellow 5/8 to 3/4 inch flowers; flower head bracts palmately spined, with one long central spine and two to three pairs of short lateral spines; bracts dense to sparsely covered with cottony hairs or with patches at the spine bases; central spine 1/2 to 1 inch long, stout, yellowish to straw-colored throughout.

Fruit: Two types of achenes, both glabrous, less than 3/16 inch long, with broad bases; outer achenes dull dark brown, often speckled with tan, lack pappus bristles, inner achenes glossy, gray or tan to mottled cream-colored and tan, with slender white pappus bristles 1/8 to 1/4 inch long.

Habitat

Cultivated and disturbed or degraded sites in grassland, forest, and woodland communities, and roadsides within elevations that generally range below 8,200 feet.

Propagation/Phenology

Reproduces by seed, up to 75,000 per plant; seed germination is closely correlated with rainfall events; can survive for up to 10 years, depending on environmental conditions.

Comments

Native to southern Europe; yellow starthistle plants are highly competitive and typically develop dense, impenetrable stands that displace other vegetation; yellow starthistle looks very similar to Malta starthistle. Arizona prohibited/restricted noxious weed and New Mexico Class A noxious weed.

Yellow starthistle flower heads
© SD

Yellow starthistle winged stem margins (right)
© SD

Yellow starthistle flower heads and stems
© BR

Yellow starthistle plant
© CR

Yellow Sweetclover

Melilotus officinalis (L.) (Pea family, Fabaceae)

Description

Taprooted, erect, branched, annual, biennial or short-lived perennial forb, 2 to 7 feet tall; larger plants branch frequently and are somewhat bushy in appearance, while shorter plants are less branched and rather lanky; stems are glabrous, furrowed, and angular; sometimes the lower stems are ribbed light red.

Leaves: The alternate compound leaves are trifoliate (clover-like) and hairless; each leaflet is about 3/4 inch long and 1/4 inch wide, oblong, oblanceolate, or obovate in shape, and dentate along the middle or upper margin; terminal leaflet has a short stalk at its base, while the lateral leaflets are nearly sessile; petiole of each compound leaf is about 1/2 inch long; there are a pair of small linear stipules at its base.

Flowers: Flowers April to September; spike-like racemes of yellow flowers are abundantly produced; each raceme is up to 6 inches long and has dozens of yellow to cream-colored flowers; flowers about 5/16 inch long; when fully open, it has a pea-like floral structure with an upper standard and lower keel.

Fruit: Fruit is a small seedpod, less than 3/16 inch long, cross-ribbed and contains one to two seeds; seeds are tannish-yellow and somewhat flattened and kidney-shaped.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, and forest communities, and roadsides within elevations that generally range from 5,000 to 10,500 feet.

Propagation/Phenology

Reproduces by seed; well-developed plants may produce more than 1,000 seeds.

Comments

Native to Eurasia; yellow sweetclover is very similar to M. alba (white sweetclover), which is another weedy species native to Eurasia; white sweetclover has white flowers, greyish-green foliage, and its slightly reticulated seedpods lack conspicuous cross-ribs; otherwise, these two species are nearly identical; USDA Plants

Database considers them synonymous. This species generally occurs as a weed in wildland areas of the Southwestern Region rather than as an invasive plant.

Yellow sweetclover leaf and fruit
© PTL

Yellow sweetclover flowering inflorescences
© TH

Yellow sweetclover flowers
© SD

Yellow sweetclover plants
© DP

Yellow Toadflax

Linaria vulgaris Miller (Figwort family, Scrophulariaceae)

Description

Erect, single or multi-stemmed, clump or patch-forming perennial forb; 12 to 24 inches tall, with creeping roots and showy yellow flowers; flowers are borne in axils of an elongated dense or open raceme, with an erect or drooping tip.

Leaves: Leaves primarily alternate, but crowded and often appearing opposite or whorled, especially near the bases of stems; leaf margins entire, sessile, linear, 7/8 to 2 inches long; soft, mostly spreading to drooping, glabrous or sparsely covered with long soft hairs.

Flowers: Flowers May to September. Flowers showy, bright yellow (sometimes white), snapdragon-like, 2-lipped, 5-lobed, with a long, straight, downward pointing spur near the base of the lower corolla tube; 1-3/8 to 2-1/8 inches long, including spur; throat and lower lip orange-hairy.

Fruit: Round, 2-chambered capsule, 3/8 to 1/2 inch long; opening by irregular slits at the apex to release numerous black to brown, 1/16 to 1/8 inch in diameter, flattened with circular or papery winged seeds.

Habitat

Cultivated and disturbed or degraded sites in meadows, grassland, woodland, and riparian communities, and roadsides within elevations that generally range from 6,400 to 9,200 feet.

Propagation/Phenology

Reproduces by seed (up to 30,000) and vegetatively from creeping lateral roots; plants develop an extensive system of vertical and lateral roots that produce new shoots; root fragments can produce new plants; plants can rapidly colonize a site by vegetative reproduction from creeping roots.

Comments

Native to southeast Eurasia; germination is highest on open sites with compacted soils and little vegetation; an extensive root system makes this plant difficult to control; yellow toadflax and Dalmatian toadflax can hybridize. New Mexico Class A noxious weed.

Yellow toadflax flowers and foliage
© MS

Yellow toadflax flowers
© RO

Yellow toadflax flowers
© SD

Yellow toadflax plants
© MS

Photography Credits

I would like to thank all of the individuals and/or organizations who so graciously granted permission and allowed the use of their photographs; they are accredited under each individual photograph used in this booklet and listed below.

© AD: Photo Courtesy of Ann Dennis, 2002 @ calphotos.berkeley.edu — burclover

© AF: Photo Courtesy of Alison Fox, University of Florida, Bugwood.org — Eurasian watermilfoil

© AS: Photo Courtesy of Al Schneider @ USDA-NRCS PLANTS Database — blue mustard

© ASUH: Photo Courtesy of Arizona State University Herbarium — Arabiangrass

© AV: Photo Courtesy of Anthony Valois and the Santa Monica Mountains National Recreation Area, USDI National Park Service — chicory

© BA: Photo Courtesy of Bruce Ackley, The Ohio State University, Bugwood.org — spiny sowthistle, wild mustard

© BB: Photo Courtesy of Barry Breckling, 2010 @ calphotos.berkeley.edu — floating primrose-willow

© B&LC: Photo Courtesy of Barbara J. and Lorence G. Collins, Thousand Oaks, CA @ www.clunet.edu/gf — African sumac

© BM: Photo Courtesy of Bonnie Million, National Park Service, Bugwood.org — curveseed butterwort, Dalmatian toadflax, halogeton, redstem filaree, Russian knapweed, saltcedar, Scotch thistle

© BR: Photo Courtesy of Barry Rice, sarracenia.com, Bugwood.org — chicory, Johnsongrass, purple starthistle, spiny cocklebur, teasel, whitetop, yellow starthistle

© CB: Photo Courtesy of Chuck Bargeron, University of Georgia, Bugwood.org — tree of heaven

© CDFA: Photo Courtesy of Staff CDFA, California Dept. of Food & Agriculture, Integrated Pest Control Branch, 2001 @ calphotos.berkeley.edu — Iberian knapweed, Sicilian starthistle

© CE: Photo Courtesy of Chris Evans, River to River CWMA, Bugwood.org — bull thistle, cheatgrass, giant reed, Russian olive, spiny sowthistle, whitetop

© CM: Photo Courtesy of Carey Minteer, University of Georgia, Bugwood.org — wooly mullein

© CR: Photo Courtesy of Cindy Roche, Bugwood.org — meadow knapweed, yellow starthistle

© CS: Photo Courtesy of Clinton Shock, Oregon State University, Bugwood.org — halogeton

© CTB: Photo Courtesy of Charles T. Bryson, USDA Agricultural Research Service, Bugwood.org — Johnsongrass

© DB: Photo Courtesy of Douglas Barbe, California Department of Food and Agriculture, Bugwood.org — African rue

© DC: Photo Courtesy of David Cappaert, Michigan State University, Bugwood.org — perennial sowthistle

© DD: Photo Courtesy of D. Dixon, California Dept. of Food & Agriculture, Integrated Pest Control Branch, 2001 @ calphotos.berkeley.edu — Sicilian starthistle

© DJM: Photo Courtesy of David J. Moorhead, University of Georgia, Bugwood.org — giant reed

© DP: Photo Courtesy of Dave Powell, USDA Forest Service, Bugwood.org — yellow sweetclover

© DWT: Photo Courtesy of Dean Wm. Taylor, 1980 @ calphotos.berkeley.edu — curveseed butterwort

© EB: Photo Courtesy of Elizabeth Bella, USDA Forest Service, Bugwood.org — white sweetclover

© EC: Photo Courtesy of Eric Coombs, Oregon Department of Agriculture, Bugwood.org — meadow knapweed, Mediterranean sage, purple loosestrife

© EL: Photo Courtesy of Eric LHOTE @ L'Atelier Artistique du Paysage, 2010, www.latelierartistiquedupaysage.com — Mediterranean sage

© EM: Photo Courtesy of Elizabeth Makings @ asu.edu — sweet resinbush

© FD: Photo Courtesy of Faith Duncan, USDA Forest Service, Bugwood.org — tansy ragwort

© F&KS: Photo Courtesy of Forest & Kim Starr, U.S. Geological Survey, Bugwood.org — crimson fountaingrass, Himalayan blackberry, little hogweed, parrot feather milfoil, puncturevine, red clover, redstem filaree, rescuegrass, ripgut brome, Russian thistle, southern sandbur, weeping lovegrass, white clover, wooly mullein

© GAC: Photo Courtesy of G.A. Cooper, USDA-PLANTS Database, Bugwood.org — African rue

© G&AD: Photo Courtesy of George and Audrey DeLange@ www.delange.org — African sumac, globe chamomile, Saharan mustard, white sweetclover

© GAM: Photo Courtesy of Gary A. Monroe @ USDA-NRCS PLANTS Database — curveseed butterwort

© GFH: Photo Courtesy of G.F. Hrusa, California Dept. of Food & Agriculture, Botany Laboratory, 2001 @ calphotos. berkeley.edu — Sicilian starthistle

© GH: Photo Courtesy of Gerald Holmes, Valent USA Corporation, Bugwood.org — alfalfa

© GL: Photo Courtesy of Graves Lovell, Alabama Department of Conservation and Natural Resources, Bugwood.org — floating primrose-willow

© GLP: Photo Courtesy of Gary L. Piper, Washington State University, Bugwood.org — spiny plumeless thistle

© HB: Photo Courtesy of Henry Brisse, @ henry.brisse@univ-cezanne.fr — sweet resinbush

© HFS: Photo Courtesy of Howard F. Schwartz, Colorado State University, Bugwood.org — alfalfa, puncturevine

© HZ: Photo Courtesy of H. Zell, 12 August 2009, Wikimedia Commons, http://en.wikipedia.org/wiki/File:Vitex_agnus-castus — lilac chastetree

© JB: Photo Courtesy of Joseph Berger, Bugwood.org — redstem filaree

© JC: Photo Courtesy of John Cardina, the Ohio State University, Bugwood.org — Johnsongrass, spotted knapweed, yellow salsify

© JCS: Photo Courtesy of J. C. Schou @ Biopix — field brome

© JDB: Photo Courtesy of John D. Byrd, Mississippi State University, Bugwood.org — poison hemlock

© JHM1: Photo Courtesy of James H. Miller, USDA Forest Service, Bugwood.org — giant reed, weeping lovegrass

© JHM2: Photo Courtesy of James H. Miller @ USDA-NRCS PLANTS Database/James H. Miller and Karl V. Miller. 2005. Forest plants of the southeast and their wildlife uses. University of Georgia Press, Athens — spiny sowthistle

© JHM&TB: Photo Courtesy of James H. Miller & Ted Bodner, Southern Weed Science Society, Bugwood.org — tall fescue, tall morning-glory

© JMD: Photo Courtesy of Joseph M. DiTomaso, University of California - Davis, Bugwood.org — African rue, Arabiangrass, buffelgrass, diffuse knapweed, Dyer's woad, field brome, field sandbur, hairy whitetop, Lehmann lovegrass, lens-podded hoarycress, Malta starthistle, Mediterranean grass, ravennagrass, rescuegrass, ripgut brome, rush skeletonweed, Saharan

mustard, squarrose knapweed, tall fescue, Uruguayan pampas grass, weeping lovegrass, whitetop, wild mustard

© JMR: Photo Courtesy of John M. Randall, the Nature Conservancy, Bugwood.org — buffelgrass, camelthorn, Canada thistle, crimson fountaingrass, Himalayan blackberry, hounds-tongue, kochia, leafy spurge, Lehmann lovegrass, Malta starthistle, red brome, Russian knapweed, saltcedar, Siberian elm, spiny cocklebur

© JN: Photo Courtesy of Jamie Nielsen, University of Alaska Fairbanks, Cooperative Extension Service, Bugwood.org — white sweetclover

© JS: Photo Courtesy of Jan Samanek, State Phytosanitary Administration, Bugwood.org — black henbane, common cocklebur, poison hemlock, tree of heaven

© JV: Photo Courtesy of Joy Viola, Northeastern University, Bugwood.org — Uruguayan pampas grass

© KAR: Photo Courtesy of Karan A. Rawlins, University of Georgia, Bugwood.org — black medick, horehound

© KW: Photo Courtesy of Keith Weller, USDA Agricultural Research Service @ bugwood.org — alfalfa

© LA: Photo Courtesy of Lloyd Andres, USDA Agricultural Research Service, Bugwood.org — Mediterranean sage

© LJM: Photo Courtesy of Leslie J. Mehrhoff, University of Connecticut, Bugwood.org — Eurasian watermilfoil, tansy ragwort

© LLB: Photo Courtesy of L.L. Berry, Bugwood.org — Mediterranean sage

© LM: Photo Courtesy of Liz Marking @ http://swbiodiversity.org/seinet — globe chamomile

© LR: Photo Courtesy of Luigi Rignanese, 2005, 2007 @ calphotos.berkeley.edu — bigleaf periwinkle, horehound, kochia, onionweed, perennial wallrocket, teasel, wild mustard

© LTK: Photo Courtesy of Loke T. Kok, Virginia Polytechnic Institute and State University, Bugwood.org — musk thistle

© LW: Photo Courtesy of Linda Wilson, University of Idaho, Bugwood.org — Dalmatian toadflax

© MEH: Photo Courtesy of Mary Ellen (Mel) Harte, Bugwood.org — black henbane, broadleaved pepperweed, common burdock, field bindweed, hairy whitetop, hounds-tongue, lens-podded hoarycress, musk thistle, oxeye daisy, Russian thistle, wooly mullein

© ML: Photo Courtesy of Max Licher @ http://swbiodiversity.org/seinet — bigleaf periwinkle, blue mustard, Malta starthistle

© MS: Photo Courtesy of Michael Shephard, USDA Forest Service, Bugwood.org — bull thistle, perennial sowthistle, tansy ragwort, yellow toadflax

© NER: Photo Courtesy of Norman E. Rees, USDA Agricultural Research Service, Bugwood.org — diffuse knapweed, purple loosestrife

© NL: Photo Courtesy of Nancy Loewenstein, Auburn University, Bugwood.org — parrot feather milfoil

© OSWL: Photo Courtesy of Ohio State Weed Lab Archive, the Ohio State University, Bugwood.org — Carolina horsenettle,Johnsongrass,quackgrass,spottedknapweed

© PB: Photo Courtesy of Patrick Breen, Oregon State University, Bugwood.org — Russian olive

© PEB: Photo Courtesy of Paul E. Berry, Wisconsin State Herbarium, University of Wisconsin-Madison — white sweetclover

© PF: Photo Courtesy of Patti Fenner, Tonto National Forest, USDA Forest Service — African sheepbush

© PJA: Photo Courtesy of Patrick J. Alexander @ USDA-NRCS PLANTS Database — black medic, tall morning-glory, white clover

© PTL: Photo Courtesy of Pedro Tenorio-Lezama, Bugwood.org — broadleaved pepperweed, oxeye daisy, Russian thistle, tall morning-glory, yellow sweetclover

© PW1: Photo Courtesy of Phil Westra, Colorado State University, Bugwood.org — common cocklebur, little hogweed

© PW2: Photo Courtesy of Paul Wray, Iowa State University, Bugwood.org — Russian olive, tree of heaven

© RAH: Photo Courtesy of R.A. Howard @ USDA-NRCS PLANTS Database — chicory

© RET: Photo Courtesy of Ruth E. Timme, Research Assistant, University of Maryland @ www.ruthtimme.com — Texas blueweed

© RHM: Robert H. Mohlenbrock, @ USDA-NRCS PLANTS Database — black medick

© RL: Photo Courtesy of Ricky Layson, Ricky Layson Photography, Bugwood.org — musk thistle

© RO: Photo Courtesy of Richard Old, XID Services, Inc., Bugwood.org — alfalfa, blue mustard, common burdock, crimson fountaingrass, diffuse knapweed, Eurasian watermilfoil, field sandbur, hairy whitetop, Himalayan blackberry, kochia, Mediterranean grass, red clover, redstem filaree, rush skeletonweed, Siberian elm, southern sandbur, tansy ragwort, tree of heaven, wild oat, yellow toadflax

© RRB: Photo Courtesy of Robin R. Buckallew @ USDA-NRCS PLANTS Database — tall morning-glory

© RS: Photo Courtesy of Richard Spellenberg, 2012 @ calphotos.berkeley.edu — globe chamomile

© RV: Photo Courtesy of Robert Vidéki, Doronicum Kft., Bugwood.org — chicory, common cocklebur, hounds-tongue, Scotch thistle, spiny cocklebur

© SD: Photo Courtesy of Steve Dewey, Utah State University, Bugwood.org — black henbane, broadleaved pepperweed, bull thistle, camelthorn, Canada thistle, cheatgrass, diffuse knapweed, Dyer's woad, jointed goatgrass, leafy spurge, musk thistle, oxeye daisy, perennial sowthistle, purple loosestrife, purple starthistle, quackgrass, rush skeletonweed, Russian knapweed, saltcedar, Scotch thistle, spiny sowthistle, spotted knapweed, squarrose knapweed, teasel, wild oat, wooly mullein, yellow salsify, yellow starthistle, yellow sweetclover, yellow toadflax

© SH: Photo Courtesy of Steve Hurst @ USDA-NRCS PLANTS Database — Arabiangrass, Mediterranean grass

© SM: Photo Courtesy of Steve Matson, 2005 @ calphotos.berkeley.edu — burclover, lens-podded hoarycress, wild oat

© ST: Photo Courtesy of Steve Thorsted, 2010 @ calphotos.berkeley.edu — onionweed

© TB: Photo Courtesy of Ted Bodner, Southern Weed Science Society, Bugwood.org — Carolina horsenettle

© TF: Photo Courtesy of T. Fuller, California Dept. of Food & Agriculture, Botany Laboratory, 2001 @ calphotos.berkeley.edu — Sicilian starthistle

© TH: Photo Courtesy of Tom Heutte, USDA Forest Service, Bugwood.org — field bindweed, perennial sowthistle, red clover, yellow sweetclover

© TNC: Photo Courtesy of the Nature Conservancy, 2000 @ tncweeds.ucdavis.edu — lens-podded hoarycress

© TP: Photo Courtesy of Todd Pfeiffer, Klamath County Weed Control, Bugwood.org — spiny plumeless thistle

© TW: Photo Courtesy of Theodore Webster, USDA Agricultural Research Service, Bugwood.org — yellow salsify

© USDA1: Photo Courtesy of USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org — jointed goatgrass, leafy spurge, onionweed

© USDA2: Photo Courtesy of USDA NRCS Archive, USDA NRCS, Bugwood.org — Siberian elm

© USU: Photo Courtesy of Utah State University Archive, Utah State University, Bugwood.org — Dalmatian toadflax, little hogweed, puncturevine, rush skeletonweed

© V: Photo Courtesy of Vilseskogen at http://www.flickr.com/photos/vilseskogen/3066876182/ and http://www.flickr.com/photos/vilseskogen/3066035257/ — parrotfeather milfoil

© WMC: Photo Courtesy of William M. Ciesla, Forest Health Management International, Bugwood.org — yellow salsify

© X: Photo Courtesy of Xenomorf, 2006 @ Dave's Gargen.com — African sumac, globe chamomile

"A weed is a plant whose virtues have not yet been discovered."

— Ralph Waldo Emerson