

Perennial Pepperweed

Lepidium latifolium



FAMILY Brassicaceae- mustard & cabbage

ORIGIN Eurasia

LIFE CYCLE Perennial

OTHER NAMES Tall whitetop, broadleaved pepperweed, peppergrass

QUICK FACTS

- Perennial pepperweed is an herbaceous perennial that produces **thousands of seeds** and grows from existing roots. It competes with desired vegetation for water and space. This weed threatens many riparian and wetland ecosystems and, while edible, is undesirable to most domestic and wild animals.
- Native to the Eurasian continent, this weed can grow in a variety of soil types and sun exposure. It creates thick **monocultures** that prevent other plants from growing. Additionally, it increases soil salinity and exacerbates **erosion** in infected areas.
- Perennial pepperweed can grow up to **8 feet tall**, has grey-green leaves and live stems, and tan colored dead stems around the base of the plant. Flowers appear around May or June and have small, white petals arranged in a cross shape, forming bunches at the top of the stems.

A spicy, small-flowered weed that produces billions of seeds per acre..

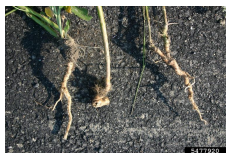
Perennial pepperweed is a perennial forb native to Europe and Asia. It invades areas with moisture, like grasslands and river valleys. While its seeds have low germination rates, individual plants can produce thousands of seeds and can also grow from roots. In New Mexico, perennial pepperweed takes over riparian areas, irrigation ditches, floodplains, and wetlands. Its dense stands displace desired vegetation, increase soil salinity, and reduce forage quality.

What does it look like?

Perennial pepperweed is a tall forb with green stems and leaves, has a deep, creeping root, and bunches of small white flowers at the end of branches. It usually has dead, tan stems at the base from previous years. Perennial pepperweed is often confused with hoary cress (also called whitetop), but can be distinguished by size and leaves. Perennial pepperweed is taller (3-8 feet tall), and hoary cress is less than 3 feet tall. Additionally, Perennial pepperweed does not clasp the stem, while hoary cress does.



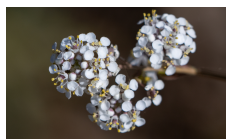
Joseph M. DiTomaso, University of California - Davis, Bugwood.org



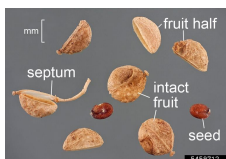
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



Jugal Patel, inaturalist.org



Andrea Carpio, inaturalist.org



D. Walters and C. Southwick, Table Grape Weed Disseminule ID, USDA APHIS PPQ, Bugwood.org

Plant: Perennial pepperweed is a perennial forb that germinates from winter to early spring, and can flower within its first year. Stems are green when alive, usually grow to about 3 feet tall, but can reach 8 feet in high-moisture areas. They are hairless, stiff, and branching. Perennial pepperweed stems die back each year and turn a light tan. The stem base is semi-woody.

Roots: Perennial pepperweed has a creeping root system that grows deeply to reach the water table and spreads horizontally up to 10 feet per year. Most of the root mass is found in the upper 2 feet of soil, but it can reach depths of over 10 feet, down to the water table. They have a fleshy color and mostly coarse roots, with very few root hairs.

Leaves: Leaves can be grey-green to bright green. Perennial pepperweed has basal rosette leaves up to 12 inches long and 0.5-3 inches wide. Basal leaves are entire with toothed margins, and can be ovate to oblong. Stem leaves are smaller, do not clasp the stem, lance-shaped, and have a leathery texture.

Flowers: Flowers are small, white, and cross-shaped. Each flower has 4 petals, less than 3mm long, and six stamens. Flowers are bunched at the ends of branches, and can be found from early summer to fall.

Seeds: Seeds are found in pod-like fruits called silicles that grow from flowers. Silicles are about 2mm long, round, and fleshy colored. Each fruit holds 2 reddish-brown seeds. Pods stay on plants and drop irregularly through winter. Each plant can produce thousands of seeds, survive flooding for over a month, and withstand drought for about 2 years.

Impact and Management

Soil Degradation

Perennial pepperweed threatens agriculture by competing for resources and reducing land productivity. It contributes to soil degradation in New Mexico by altering natural soil composition and structure. This plant also uses large amounts of water, gradually drying out the soil and increasing its susceptibility to erosion. Soil erosion affects water quality in nearby water bodies, as eroded soil particles can carry nutrients and pollutants into streams and rivers. The dense growth of perennial pepperweed can hinder the regeneration of native vegetation, leading to long-term soil health issues and further degradation.

Economic

Perennial pepperweed will become a monoculture through aggressive seed production and vegetative growth. While edible, it can reduce the available forage nutrients for domestic livestock and depreciate land value and hay quality. Additionally, cattle tend to avoid stands of pure pepperweed.



John M. Randall, The Nature Conservancy, Bugwood.org

Wildlife Habitat

The continued spread of perennial pepperweed harms wildlife by reducing faunal diversity in affected areas. It displaces native plants that birds, insects, and mammals rely on as food and shelter.

Ecosystem Health

Once established, perennial pepperweed often creates monocultures that displace native plants, resulting in a notable loss of floral and faunal biodiversity. This reduces food for wildlife and makes surface soils saltier.

Preventative measures are most effective at preventing infestations of perennial pepperweed. Do not disturb soils unnecessarily, do not intentionally plant for landscaping, and prevent seed dispersal by cleaning equipment. If infestation occurs, using both chemical and mechanical methods can help prevent its spread. Mechanical methods such as hand-pulling and mowing can be effective at preventing further spread if done before flowering. Hand pulling can kill plants if the entire or most of the root is removed. Perennial pepperweed can regrow from root fragments as small as 1 inch, making it difficult to remove. Herbicides can effectively kill roots and prevent plant growth.

DO's

- Maintain healthy vegetation of native or desired plants in at-risk areas, such as riparian areas or areas with high water tables.
- Pull as much of the root out as possible to prevent further growth.
- Clean equipment to avoid spreading roots or seeds, and dispose of pulled plants in the garbage.

DON'Ts

- Allow the plant to flower and seed, as this helps spread the seeds.
- Mow after flowering has occurred, as this gives seeds more opportunity to spread.
- Allow it to become widespread, it is easier to manage as an individual or small infestation



For more information on managing perennial pepperweed, please visit www.nmweeds.org

