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## Perennial Pepperweed

### General Information

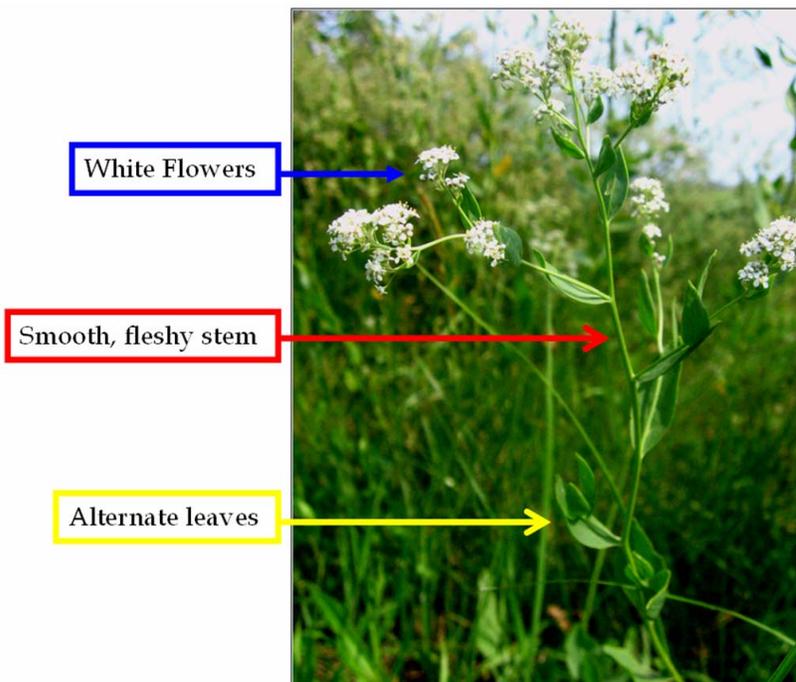
Perennial pepperweed (*Lepidium latifolium*) is an aggressive non-native plant of the mustard family that is notorious for creating dense stands, out-competing native plant species, and destroying habitat for many species of animals. Pepperweed is a major agricultural nuisance in western states and is threatening the ecological integrity of salt marshes throughout southern New England. It is essential to prevent this invasive from colonizing and degrading New Hampshire's estuarine habitat.

### What Does Pepperweed Look Like?

Juvenile pepperweed grows in rosette form, with long leaves, lying close to the ground. Leaves are approximately 6 inches long and 2 inches wide with long petioles (stems) and serrated edges. The mature plant can reach up to 4 feet in height with a smooth, fleshy stem. Leaves are lancelet shaped with prominent white veins and smooth or finely serrated edges. The leaves are alternate; one leaf grows from each point along the stem, alternating the side of the stem it grows from. Pepperweed flowers in July, producing small white flowers in dense clusters.

### What is the Range and Distribution?

Pepperweed is native to Eurasia and northern Africa. It is a major agricultural nuisance in the western United States and is prevalent in southern Canada, Australia and throughout Europe.



## How was Perennial Pepperweed Introduced?

Perennial pepperweed seeds were likely brought to the United States mixed with a shipment of sugar beet seeds in the 1930s. According to the U.S. Fish and Wildlife Service, the plant was first cited in Peabody, Mass. in 1924 and Norton, Conn. in 1933, but did not begin its rapid spread through New England until the early 1990s. The U.S. Fish and Wildlife Service confirmed its presence in New Hampshire in 2006. On the West Coast, however, pepperweed quickly began to spread soon after its introduction in the 1930s and has continued its rapid proliferation throughout the western states.

## Where Does Perennial Pepperweed Invade?

Perennial pepperweed commonly invades disturbed areas. It can be commonly found in roadside ditches, salt marshes and estuaries, irrigation channels, riparian areas, rangeland habitats, wetlands and floodplains.

## What Makes Perennial Pepperweed a Good Invader?

Pepperweed prefers wet, saline or alkaline conditions, which can stress many native plants. Perennial pepperweed is a very hardy plant, able to tolerate high salinities, moderate drought conditions and a variety of soil types, making it a very successful competitor.



## How Does Perennial Pepperweed Spread?

Pepperweed has the ability to spread through seed distribution as well as through rhizome spreading. The substantial root system (rhizome) of pepperweed is able to extend and re-sprout. Even small fragments of root are able to re-sprout, creating new populations. Perennial pepperweed plants produce thousands of seeds annually. These seeds are dispersed by wind, water, and possibly by waterfowl.

## Why Is Perennial Pepperweed a Problem?

Once established, pepperweed creates dense, single-species stands, excluding native species. These stands are able to secrete salts into the soils, raising the salinity to a point where most species are unable to grow. In addition, pepperweed creates a poor habitat for native birds, insects and mammals. Once these species are displaced, with no other suitable habitat, they can be lost forever. The reduction in habitat size results in a negative impact on local fish and waterfowl populations.

### How to Identify Pepperweed

#### ***Rosette (Juvenile) Form:***

Leaves 6" long, 2" wide  
Long petioles  
Serrated edges

#### ***Mature Plant:***

Smooth, fleshy stem  
Flowers in July

- White flowers
- Flowers form in dense clusters
- Four spoon-shaped petals

Leaves

- Alternate
- Prominent white veins
- Smooth or finely serrated edges
- Lance-shaped (tapered at base)

In addition, pepperweed poses a risk to salt hay, a native weed-free agricultural commodity with a rich historical legacy in New Hampshire. Pepperweed is toxic to most livestock, and if it invades pasturelands, becomes a major agricultural and economic nuisance.

### **What Are Some Solutions to the Perennial Pepperweed Problem?**

**Physical Control:** While hand-pulling has not proved to be effective on the west coast, recent hand-pulling efforts in New England have yielded some success. It is important, however, to follow these guidelines when pulling pepperweed:



- DO NOT pull in August when pepperweed goes to seed.
- Pull from the base of the plant, trying to get as much of the root as possible.
- Disturb the soil as little as possible, keeping native plant communities intact.
- Pull out rosettes, too.
- If pepperweed resprouts, pull it again. Research in New England has shown that pulling a site twice in a summer for two consecutive years significantly reduces or eliminates pepperweed.

**Biological Control:** There are many species in the perennial pepperweed family that are currently listed as threatened or endangered in the United States. Methods of biological control are currently not focused enough to introduce due to the danger of harming these closely related species.

**Chemical Control:** Herbicide applications have been widely successful in the West. In the Northeast, however, due to its prevalence in coastal areas and near wetlands, special permitting is usually required to apply herbicides.

### **How Do I Dispose of Perennial Pepperweed?**

To ensure that pepperweed is not spread, it is important to follow a few precautions in its disposal. Pepperweed can be dried in the sun on asphalt for seven days or left to decompose in a contractors-grade garbage bag for one to two months. After this point, the plant is safe to be either composted or burned.

### **What Can I Do to Help?**

If you notice an infestation of perennial pepperweed, call the New Hampshire Coastal Program immediately at (603) 559-1500.

Sources: Alaska Natural Heritage Program, University of Alaska Anchorage,  
[http://akweeds.uaa.alaska.edu/pdfs/potential\\_species/bios/Species\\_bios\\_LELA.pdf](http://akweeds.uaa.alaska.edu/pdfs/potential_species/bios/Species_bios_LELA.pdf)

2006 Annual Report: Perennial Pepperweed Control Project (Parker River National Wildlife Refuge, Mass.), U.S. Fish and Wildlife Service.