

## **Appendix D: Outreach and Planning Materials**

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## Perennial Pepperweed and Herbicide—Frequently Asked Questions

### 1. What is Pepperweed and why is it a problem?

Perennial Pepperweed (*Lepidium latifolium*) is a non-native invasive species. It is invading New England salt marshes and spreading rapidly. Pepperweed does not have any checks on its growth in its new environment so it is spreading quickly in the salt marsh ecosystem. We are trying to control pepperweed to protect the valuable salt marsh ecosystem and all the plants and animals which use it.

### 2. Why do we want to use herbicide on Pepperweed?

We have two proven control techniques to remove and reduce pepperweed. We can hand pull pepperweed and dry it or use herbicide to kill the plant and roots. Sites chosen for herbicide treatment tend to be larger, denser or more remote. In some sites, we see great results from pulling; in others there is little change.

### 3. What herbicide do you use? What safety measures do you take?

We use a 0.03% solution of Escort applied to individual plants by certified Massachusetts Pesticide Applicators. Escort has proven very effect in controlling pepperweed with only 10% growing back the next year.

Our applicators work within Massachusetts pesticide regulations, target the pepperweed (avoiding native vegetation), and apply during calm wind conditions.

### 4. Is it safe for me, my children and my pets to be in the area?

The pesticide applicators target only pepperweed plants so other vegetation and objects are avoided. Do not enter the pepperweed patch for 4 hours after spraying. The pesticide is drawn into the plant through the leaves and is moved down to the roots. The other vegetation and soil are unharmed by the herbicide.

## Pepperweed Timetable

(Expected in Massachusetts)

	Jan				Feb				March				April			
Week #	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Outreach						x				x						
Planning	Meeting/Grant writing															
Mapping on Foot									x	x	x	x	x	x	x	x
Mapping By Boat																
Permitting	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Landowner Permission	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

	May				June				July				August			
Outreach						Train	Train	x								
Week #	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Pepperweed growing	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Greenheads									x	x	x	x	x	x		
Flowers developing							x	x	x	x	x	x	x	x	x	x
Seeds developing											x	x	x	x	x	x
Seeds dropping															x	x
Pepperweed Pulling/weed whacking				x	x	x	x	x	x	x	x					
Pulling Recheck													x	x	x	x
Herbicide Use: <b>Non Rainy Days needed.</b>							x	x	x	x						
Extended Herbicide use  (late-flowering sites, or pretreated sites)											x	x				
Mapping on Foot	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Mapping By Boat									x	x	x	x	x	x	x	x

	Sept				October				November				December			
Week #	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Reporting													Reporting			
Outreach											x		x			
Pepperweed growing	x	x	x	x												
Flowers developing	x	x	x													
Seeds developing	x	x	x	x												
Seeds dropping	x	x	x	x	x	x										
Pepperweed Pulling/weed whacking	Repull sites															
Pulling Recheck	x	x	x	x												
Herbicide Use																
Extended Herbicide use																
Mapping on Foot	x	x														
Mapping By Boat	x	x														

# Perennial Pepperweed ID Sheet

## New Plant Invaders to Watch For Perennial Pepperweed (*Lepidium latifolium*)



**The Threat:** Perennial pepperweed is a serious invasive plant problem in the western United States. In the east, it has recently become established in coastal marshes in Massachusetts from northern Plymouth County to New Hampshire. A number of populations have been found inland along highways. Perennial pepperweed can alter soil conditions in a manner that enhances its ability to outcompete and displace native plants and can spread by means of both seeds and root fragments.



Photo: Lou Wagner, Mass Audubon

Flowers are small, white, have four petals, and are borne in dense clusters. Flowering usually occurs in late spring or early summer.

Plants are upright, usually 2 to 5 feet tall, and have alternate branches and leaves.

Leaves are lance-shaped and progressively smaller higher on the stem. The leaf edges are slightly serrated and the leaves are somewhat waxy in appearance.



Photo: Mary Ellen (Mel) Harter, Bugwood.org

**What to do :** Learn to recognize the distinguishing features of perennial pepperweed shown in the images on this page. If found, immediately report the finding to Lou Wagner, Mass Audubon Regional Scientist, at 978-927-1122 Extension 2705, or [hwagner@massaudubon.org](mailto:hwagner@massaudubon.org).

Perennial pepperweed plants begin growth in spring as a basal rosette.



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

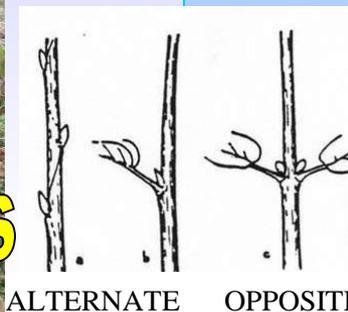


Photo: Steve Dewey, Utah State University, Bugwood.org



Perennial pepperweed can form dense stands that displace native plants, most commonly at the upper edges of coastal wetlands.

# Perennial Pepperweed (*Lepidium latifolium*)



- Herbaceous perennial plant, (dead stems remain from past years growth.)
- Leaves are alternate.
- Leaves entire (smooth) or weakly serrate (toothed.)
- Plant remains as a rosette for several weeks before stem grows.

**Help remove this invader!**



Photo by Leslie J. Mehrhoff



Photos by Elizabeth B. Duff

# Marsh Elder (*Iva frutescens*) High Tide Bush



**Help protect this native plant!**

**Be careful! Don't confuse us!**

Common Plantain  
(*Plantago major*)

•Plantain has long parallel veins and a trough-like stem.



**Plantain**



**Pepperweed**

