

Idaho's Statewide Pre-release Monitoring Guidelines for White-top (Hoary Cress) Stem-galling Weevil:



Overview:

A critical part of successful weed biological control programs is monitoring the impact of biological control agents on the target weed. Monitoring should be conducted on an annual basis for a number of years to show trends. Gathering baseline monitoring information before a new biological control agent is released is critical to determining impacts. The Idaho State Department of Agriculture, in conjunction with the University of Idaho, Nez Perce Biocontrol Center, and federal land management agencies, has developed the Standard Impact Monitoring Protocol (SIMP) to enable land managers to take a more active role in pre-release monitoring in preparation for the new biological control agent, *Ceutorhynchus*

cardariae (CECA), a stem-galling weevil, and its target weed, white-top (*Lepidium draba*). This monitoring protocol was designed to be implemented by land managers in a timely manner and to provide pre-release monitoring data which will enable land managers and researchers to accurately quantify the impact of CECA once it is released.



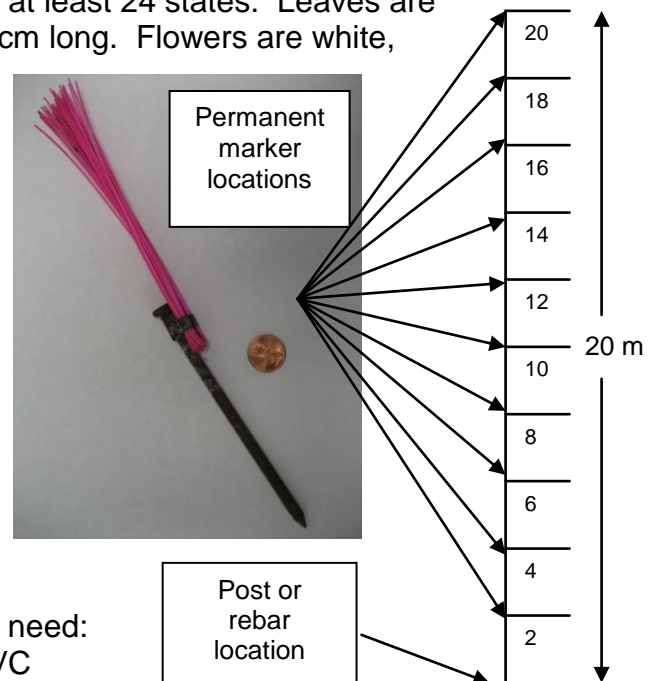
White-top:

White-top is a perennial mustard that reproduces both vegetatively and by seed. This deep-rooted, creeping plant can grow to 90 cm tall and invade crops, riparian areas, and rangelands. After its introduction into North America from Eurasia in the late 19th century, white-top has spread aggressively and is now listed as “noxious” in at least 24 states. Leaves are grayish-green, lance-shaped, clasping, and up to 10 cm long. Flowers are white, 0.5 cm across and bloom from April to May. The conspicuous dense flower clusters appear flat-topped early in the season, but this characteristic disappears as the stem elongates. Flowering stems contain an average of 2,300 seed pods. Seed pods are heart-shaped and contain two small, flat seeds that can remain viable for at least 3 years. A Hoary Cress Consortium of land managers from ID, UT and WY was established in 2001 in conjunction with CABI Bioscience Switzerland and the University of Idaho to investigate potential candidates for biological control of hoary cress.

Permanent Site Set-up:

To set up the vegetation monitoring transect, you will need:

- 1) a 25 x 50 cm Daubenmire frame made from PVC (preferred) or rebar,



- 2) a 20 m tape measure for the transect line and plant height,
- 3) 10 permanent markers (road whiskers and 16-penny nails – see above picture),
- 4) a post (stake or piece of rebar) to monument the starting point at the site (see pictures for examples of field equipment), and
- 5) 30-45 minutes at the site during the **first week of May**.

To set up the transect, place the 20 m tape randomly within the infestation. Mark the beginning of the transect with a post. Place permanent markers every 2 m (for a total of 10 markers) beginning at the 2 m mark and ending with the 20 m mark on the tape measure. Place the Daubenmire frame parallel to the tape on the 50 cm side with the permanent marker in the upper left corner starting at 2 m (see pictures). **Refer to the data sheet for how to conduct monitoring.** Repeat the frame placement at 2 m intervals for a total of 10 measurements (one at each permanent marker).

