

**Vermont State Supplement [WQL01 Biological Suppression and other Non-Chemical Techniques to Manage Brush, Herbaceous Weeds and Invasive Species]  
Supplemental Information in BLUE font**

This enhancement is for the reduction of woody brush, herbaceous weeds and invasive plants using non-chemical methods. Physical methods include pulling, mowing, mulching or other similar techniques. Biological methods include use of natural enemies introduced or augmented. Use of chemicals is prohibited with this enhancement.

**Land Use Applicability**

This enhancement is applicable on rangeland and pastureland.

**Benefits**

Environmental benefits will be site specific. Benefits include but are not limited to improved water quality achieved through eliminating the use of synthetic pesticides resulting in no chemicals in surface runoff or leaching into the soil profile. Air quality will see similar impacts by eliminating chemical drift and volatilization. Controlling invasive species, brush and weeds will allow native plant communities to return and improve wildlife habitat.

**Criteria**

- 1) Develop a plan for managing invasive plants, brush and/or weeds that includes:
  - a) Assessment of existing conditions
  - b) Identify strategies for control
  - c) Control methods selected
  - d) Monitoring and evaluation process
  - e) Operation and maintenance follow up activities
- 2) Implementation of this enhancement requires the use of biological and/or physical pest suppression techniques instead of pesticides. These techniques, used individually or in combination, can include activities such as:
  - Grazing animals (primarily through the use of goats) to target undesirable vegetation.
  - Introduction of beneficial insects to attack undesirable vegetation.
  - Introduction of beneficial micro-organisms to attack undesirable vegetation.
- 3) Biological suppression techniques should be based on techniques recommended by the local Land Grant University.
- 4) Biological suppression must be preceded by an analysis to ensure the proposed biological agent is compatible with the agronomic, ecological and social objectives of the operation.
- 5) Operation and maintenance activities must be followed to ensure regrowth or resprouting is controlled. Additional treatment of individual plants or areas needing retreatment should be completed as required to effectively controlling the targeted species.

**Documentation Requirements**

Written documentation for each treatment area and year of this enhancement including:

- a. A full description of all biological suppression techniques utilized including the number of animals or insect colonies to be distributed and the planned time frame of the treatment.
- b. A map showing where the activities were applied including treatment acreage

Goats as brush control tool: To meet requirements:

1. The brush is either low growing or is reduced to low growth by mechanical means.
2. The brush species is preferred by goats
3. Goats can be concentrated in large numbers for a relatively short period, and then removed for an extended period. Three sequential graze periods each year.

Other methods:

1. Multispecies grazing using sheep and goats at proper stocking rates. This could be based on field inventory and actual sample collection methods and browse dry weights. Based on methods proposed by NRCS in Tennessee (Gregg Braun NRCS Grazing Specialist)
2. Browsing and land clearing with both dairy replacement Jerseys, Milking Shorthorn, Devons or other Rare breeds of the dual purpose type and in essence most heifers other than Holsteins... all breeds of beef animals are appropriate in VT. (Holstein heifers would work if done on grazing farm where herd has extensive grazing history.)

Best method is with goats as proposed by U North Carolina studies, a study in 1983 by a Dr. Wood at UVM; and information from "Goats in the Woods" projects at Cornell University in Ithica, NY. by Peter Smallidge and Don Schaufler