

## Weevil Rearing Tips for Lakeshore Homeowners

Vermont Department of Environmental Conservation

**There are three laws that regulate weevil importation and introduction in Vermont. Please refer to the [www.vtwaterquality.org/lakes/htm/ans/lp\\_ewm-weevilregs.htm](http://www.vtwaterquality.org/lakes/htm/ans/lp_ewm-weevilregs.htm) for more information.**

- Keep your tank clean. Always wash your tank before and between weevil additions. Do not use any chemical detergents as they may leave a residue. Rinse the tank *thoroughly*.
- Do not use chlorinated tap water to fill your tank. Lake water (from your lake) relatively free of suspended sediment and debris, is fine. Aerating the tank is a good idea, but is not absolutely essential. *Keep in mind that most air pumps are not designed for outdoor use. Get recommendations from the pump manufacturer or dealer before using this type of equipment outside.*
- Bright light, but not full sun, is best. Water temperature should remain between 75 and 80 degrees F (approximately). If your only location is in full sun, use a shade cloth or screen to cover the tank.
- Use good quality milfoil in your tank. Plants should be healthy, green, and free from insect or other damage on the stems and leaves. Do not use flowering plants, and if possible, remove any attached insects before you add weevils to the tank. About 50 milfoil stems will fill a 20-gallon tank. Group plant material into bundles of approximately 15 stems, securing them loosely at the end with a rubber band. The bundles may be weighted to the tank bottom with small stones secured by rubber bands. This will allow the milfoil to remain upright in the tank. Milfoil stems should be long enough to extend to the water surface (or close to it) when the tank is full.
- Add the weevils to your tank as soon as you receive them. Do not touch the weevils directly as this can stress them. Move them around on milfoil fragments instead. They are awkward swimmers and cling to milfoil very readily. Twenty weevils per tank is recommended. Adding fewer weevils is fine, but don't crowd the weevils by adding more than 30 adults per 20 gallon tank.
- Once weevil adults have been added, observe your tank over the next 12 to 14 days. If you watch your tank closely, you will be able to see weevils feeding, mating and laying eggs! Observe damage to milfoil in your tank so you can familiarize yourself with its appearance. This may help you notice any weevil damage when it occurs in the field.
- After about 2 weeks, there should be enough eggs and larvae to introduce to your lake. Carefully remove milfoil stems with weevil eggs, larvae and any remaining adults from the tank. To the best of your ability count and record the numbers of each life stage. A light and magnifying glass may help with this task. Place the extracted weevils and milfoil in large ziplock plastic baggies filled with lake water for transport to the introduction site(s). Release the weevils the same day you extract them from the tank. Research has shown that reproduction rates are lower when adult weevils are reused for rearing. It is best to use Afresh@ weevils if you are doing a second round of rearing.

- Weevil introductions into the lake should be done with care. Gently hand tie milfoil fragments with weevils to the tops of existing milfoil plants in an area where there is dense growth. This can be done by snorkeling, or from a boat if the plants are close to the water surface. If you are snorkeling, be very careful not to disturb the milfoil plants with your fins as you swim. The idea is to keep the fragments with weevils attached to the tops of milfoil in the release area, rather than having them sink to the lake bottom where they are less likely to survive. Choose an area that is away from heavy boat traffic and is a reasonable distance from where other control projects are being conducted.
- Please keep accurate and detailed records of how many eggs, larvae and adults you place into your lake. Keep track of the location(s) of the introduction sites and the date(s) on which the introductions were made. All introductions should occur by the end of August since weevils begin to leave the lake for their shoreline overwintering areas in September.
- There are three laws which regulate weevil importation and introduction in Vermont. Please refer to the section on state regulatory and management issues for more information.
- If you have any questions about rearing or introducing weevils, or about using the weevil for biological control of Eurasian watermilfoil, call Ann Bove at (802) 241-3777.

### **Equipment**

- 20 gallon tank
- screen or shading material
- air pump (optional)
- thermometer (optional, but useful to monitor tank temperature)
- small stones (for weighting down milfoil stems)
- rubber bands (for making milfoil bundles and attaching stones to milfoil stems)
- large ziplock bags (for transporting weevils during introductions)
- five gallon bucket (for transporting bags of weevils)
- magnifying glass (optional, but useful for observing and counting weevils in the tank)
- small boat, mask, fins, snorkel and wetsuit (all optional, but very useful for introductions)
- notebook to record weevil rearing and introduction data