Frequently Asked Questions About
Controlling Eurasian Watermilfoil with Milfoil Weevils

1. How was the relationship between milfoil weevils and Eurasian watermilfoil discovered?

Dr. Sallie Sheldon of Middlebury College, Vermont, found the milfoil weevil, *Euhrychiopsis lecontei*, associated with the collapse of Eurasian watermilfoil (*Myriophyllum spicatum*) infestations in some of her study lakes. After 10 years of research, biological control field trials proved effective in reducing the milfoil. Marty Hilovsky of EnviroScience worked with Dr. Sheldon and Middlebury College to establish the commercial application of milfoil weevils. Since 1998, EnviroScience has continued large-scale stocking projects and has achieved success in lakes across the United States and Canada. In addition, EnviroScience supports university research at institutions in both countries.

2. Are weevils an exotic species?

No. The milfoil weevil is native and widespread across the northern United States and Canada. Its original host plant is the native Northern watermilfoil (*Myriophyllum sibiricum*); however, once Eurasian watermilfoil was introduced, weevils switched preference to the exotic species over the original host plant.

3. If weevils already occur in a lake, why do more need to be added?

Native populations are typically sparse and unable to keep up with the rapidly growing milfoil.
By stocking large numbers of weevils all the same age in close proximity, the newly emerged adults will easily find each other to mate. Those adults can lay eggs for the next generation or two, which will hatch and begin damaging nearby healthy milfoil. This enables more rapid lake wide expansion of the weevil population.

4. Will the weevils become a nuisance?

No, the weevils are specialists on Eurasian and Northern watermilfoils and the hybrid cross of the two. The weevils not only rely exclusively on milfoil for their food, but also for completion of their life cycle. The last generation of adults goes to shore in late fall to hibernate during the winter.

5. How many weevils are needed per acre of milfoil?

Weevils are not stocked on a per acre basis but rather on the size of the milfoil infestation, and to some extent how rapidly control is desired. Each water body is different, but once a self-sustaining population is achieved, management costs drop significantly and only occasional monitoring of the weevil and milfoil levels should be necessary. Long-term monitoring is an important component for any milfoil management program and should be considered when deciding on a management strategy.

6. What is defined as long-term control of milfoil?

Visible signs of long-term control are a vast decrease in milfoil density and abundance, maintenance of any remaining stems below the lake surface at a non-nuisance level, and the increase in native plant species where milfoil once dominated. Milfoil can never be entirely eradicated from a water body, only managed. However, as the natural predator of milfoil, the weevil will return every spring and continue to damage and eliminate milfoil.

7. How long will it take to achieve lake-wide milfoil control?

Many factors play a role in determining the time needed for control, including lake size, quantity and density of the milfoil, and the number of weevils stocked. However, in most stocked lakes, lake-wide control (not eradication) has been achieved in three to five years.

8. What time of the year is best for stocking?

June through early August is best. Stocking weevils by midsummer allows for production of an additional one to three generations before the weevils move to shore for overwintering.

9. When the levels of the Eurasian watermilfoil weed collapse because of predation by the weevils, what will the weevils eat?

Just like all predator/prey relationships, the weevil population in the lake will decrease naturally as the quantity of its food (milfoil) decreases. A low population of weevils will remain on scattered stems. If environmental factors favour milfoil resurgence, the weevil population increases and regains control within one to two seasons.

10. Does fish predation affect weevils?

No. Studies in New York and Michigan in the last five years found that milfoil weevils are not a preferred food choice and only incidentally found in the stomachs of bluegills. One recent project, a three-year study of pan fish gut analysis from five reservoirs, with high weevil densities in northern Michigan, confirmed that less than five percent of blue gills contained a milfoil weevil.

11. Do weevils work in lakes with developed shoreline or high recreational activity?

Yes. EnviroScience has augmented successful long-term control programs in a variety of lakes with heavily developed shoreline and recreational traffic. Prior to installing weevils, it is recommended that the community be informed and educated about the use of weevils. EnviroScience marks the stocking areas with buoys during the first season to minimize propeller damage in the immediate area for a few weeks after stocking while the weevils become established. In addition, there are ways to encourage weevil populations through cultivating a more natural shoreline buffer zone.

12. Does someone need to visit the lake before the stocking?

No. The most important first step is to have a positive identification that the problem plants are Eurasian watermilfoil. Secondly, there needs to be dense milfoil areas for stocking the weevils. Any recent vegetation survey map is useful when designing a plan and choosing stocking areas. However, through discussion with an interested lake resident**,** sufficient information can be usually obtained to develop a project plan. It is sometimes possible for one of the Lake Management Division staff to visit the lake when traveling in the area.

13. Are any permits required for stocking weevils?

EnviroScience maintains USDAAPHIS permits for all states that allow the use of biological control of exotic weeds. Some state environmental agencies prefer to be notified of any projects in advance. Based on location, regional approval from Ontario Parks or Parks Canada may be necessary for Canadian water bodies. We advise local Department of Fisheries and Oceans Canada offices to make them aware of our work and obtain a “Letter of Advice” from them.