What can we do to control this weed?

It is important to establish goals to manage Eurasian watermilfoil, including:

- Eradicating populations whenever possible.
- Reducing the mass of plant growth during the summer.
- Supporting native and beneficial plant populations to help reestablish high quality habitat and help compete with the weed after eradication.
- Implementing prevention programs to stop the spread of the plant into waterbodies that are currently weed-free.

There are a number of techniques currently used to decrease populations of Eurasian watermilfoil. In most cases, it may not be possible to completely eradicate the weed. For this reason, a comprehensive prevention program is essential. The top growth of Eurasian watermilfoil can be killed by emptying and drying the lake or pond for several weeks. Unfortunately, this often is not a realistic option. This does not kill the root system easily, and if the plants are re-wetted too soon, growth may resume. Drying will also have an undesirable effect on other plant and animal species. Other methods, including harvesting, dredging, or chemical applications, may be more practical.

Mechanical Harvesting

Mechanical harvesting is used to reduce the plant mass to allow boat traffic and recreational uses. Harvesting rigs on boats cut through and gather plant material to about the six foot depth. The plants quickly regrow, and the process must be continually repeated, much like mowing a lawn. In the Tahoe Keys, three harvesters are at work from May through September to keep the marina accessible to boats. By removing the biomass, some of the accumulated nutrients can also be removed. Unfortunately, because a lot of cut plant material is moved, the potential for spreading the

weed is high, especially to downstream locations. For this reason, it is wise to apply systemic herbicides prior to harvest so plant fragments do not grow new plants.

Diver-Assisted Dredging

Diver-assisted dredging is used to physically remove Eurasian watermilfoil from small infestations in marinas, generally under one acre in size. Dredging and hand-pulling are not too difficult, and can result in the removal of the entire plant, including the roots and shoots. Dredging disturbs the sediments and produces turbid water. Dredging operations should be contained and isolated from the surrounding water using suitable management measures such as silt containment curtains. Dredging may be regulated by public agencies such as the California Regional Water Quality Control Board, Lahontan Region (in California); the Nevada Division of Environmental Protection (in Nevada); and the Tahoe Regional Planning Agency at Lake Tahoe. Contact these agencies to determine the permitting requirements and conditions that may apply to dredging.

Chemical Control

Herbicides (chemicals that kill plants) have been used to control Eurasian watermilfoil. Systemic herbicides, those taken up and distributed throughout the plant, kill the entire plant. These are preferable to contact herbicides that only kill the above ground plant, but do not affect the roots and prevent regrowth. Aquatic herbicides labeled for use with Eurasian watermilfoil include copper compounds, fluridone (Sonar□) and 2,4-D. Because copper compounds may be toxic to fish and may accumulate in sediments, it is unlikely they will ever be used in Lake Tahoe, but may be effective in closed ponds.

Fluridone is a systemic herbicide that affects the ability of plants to photosynthesize. It is used at extremely low rates (10 to 20 parts per billion), but requires a long contact time of four to six weeks. Triclopyr currently has an experimental use permit

only for aquatic applications. This chemical is selective for broadleafs like Eurasian watermilfoil, has no effect on native pond weeds, and has little effect on aquatic invertebrates. It requires a short contact time, 48 hours, and is used in higher concentrations of 1.5 to 2.5 parts per million.

Milfoil weevil (Euhrychiopsis lecontei) on Eurasian watermilfoil
Biological Control

In the long term, probably the best chances for effective, non-toxic control of Eurasian watermilfoil involve the use of insects that specialize in eating only this weed. To be successful, the insects must become established, reproduce, and cause damage only to this weed. A disease specific to Eurasian watermilfoil would have to have the same specific action.
Efforts are underway to identify insects which are native to Nevada or California that prey on the plant and help control it. A North American native milfoil weevil, *Euhrychiopsis lecontei*, has been identified in several studies in other states and Canada. The weevil completes all life stages fully submersed, and the larvae are stem miners. The eggs are laid on milfoil meristems, and the larvae eat and bore down through the stem, suppressing plant growth. So far, it has been successful only at certain sites, and is in use only in the eastern part of the United States, although it has been found in Washington state.