

## Invasion of Alien Plants

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As land and resource managers, golf course superintendents are among the most environmentally responsible. Our integrated pest management programs include herbicide use as a last choice. With all the attention focused on environmental responsibility and awareness, most golf course superintendents are thinking of ways to reduce or eliminate herbicide use.

Invasion of Alien Plants! Doesn't it sound like a great title for a Steven Spielberg movie?

Most of us have a weed management plan in our integrated pest management program to control undesirable turfgrass weeds, such as dandelions (*Taraxacum* spp.), clover (*Trifolium* spp.), chickweed (*Cerastium* and *Stellaria* spp.), etc. The plan includes (a) a well balanced nutritional strategy to maintain a dense, healthy turf, (b) proper water management, and (c) the selective, responsible use of herbicides as a last resort.

As land managers, superintendents have more than bluegrass (*Poa*), bentgrass (*Agrostis*) and flowers to manage. Most golf courses have from a few to a few hundred non-turf acres which are part of the golf course property that usually are under our management. **Noxious weed control on those non-turf acres is almost always our responsibility.** Too frequently the control of these very destructive, nonnative plants is near the bottom of our priority list.

Financial and labor resources are almost never adequate to do a good job of off-course weed management. At the time of year when we need to be spraying Canada and musk thistle (*Cirsium* and *Carduus* spp.) and diffuse, Russian, and spotted knapweed (*Centaurea* and *Acroptilon* spp.), we are very busy mowing grass that is growing at warp speed, and cultivating greens, tees and fairways.

While we are busy keeping the green, and chemophobic environmental organizations such as

the Northwest Coalition for Alternatives to Pesticides are marching to stop the use of herbicides on public lands, alien plants are devouring 4,500 acres (1,823 hectares) per day. During the late 1980s I watched noxious weeds like knapweed, leafy spurge (*Euphorbia esula*), and thistle get a toe-hold along public roads in our national forests, along rivers and streams that I frequently fished, and on my non-irrigated acres at The Yellowstone Country Club. Each summer I go back, and **despite the most aggressive and comprehensive noxious weed management program in the West, Montana has lost over 4 million acres (1.6 million hectares) to spotted knapweed (*Centaurea maculosa*) alone.**

At Fox Hollow, Lakewood, Colorado, we have 250 non-turf acres (101 hectares). Many of these acres have been designated as high-quality wildlife habitat and environmentally sensitive. Golfers must stay out. In 1992 through 1994 we spent as much time as possible in mechanical removal of knapweed and thistle. In 1995 we implemented a selective herbicide spray program, combined with mechanical removal, and have stepped up the acres sprayed each spring.

By the 4th of July, 1997 I decided we were losing ground at an alarming rate. After seeking help from weed control specialists Kevin Galligher of Cornbelt Chemical and Jim Lyle, Jefferson County Noxious Weed Control Coordinator, we are **developing a new "Noxious Weed Management Plan."**

We have learned that (a) spring is not the only time to effectively eradicate these weeds, and (b) better long-term control results can be obtained with wiser herbicide choices.

We still have lots to learn at Fox Hollow, but come autumn we will be ready to fight the "Invasion of Alien Plants."