

Real examples of the risks when pesticides are used only as a “last resort” and the benefits of using appropriately timed pesticides as part of an integrated pest management program.

THE PEST	Eurasian watermilfoil (<i>Myriophyllum spicatum</i>)
THE PLACE	Lake Tahoe
THE DECISION	To use mechanical controls instead of the herbicide fluridone
THE OUTCOME	Small fragments produced by the mechanical controls spread the weed throughout the lake.
NEXT STEPS	Fluridone now will likely be used, but on a much larger area due to the size of the infestation.

THE PEST	Pinyon (<i>Pinus spp.</i>), juniper (<i>Juniperus spp.</i>) and other highly flammable woody vegetation
THE PLACE	145,000 acres of public lands in the Pecos District of New Mexico
THE DECISION	One-time treatment with an herbicide
THE OUTCOME	Acceptable weed control
NEXT STEPS	As a result of the early intervention, land managers now are able to maintain the treated land with controlled burning.

THE PEST	Hydrilla (<i>Hydrilla verticillata</i>)
THE PLACE	166 acres of an inlet adjoining Cayuga Lake, one of the New York Finger Lakes
THE DECISION	A brief attempt at hand-harvesting
THE OUTCOME	Hydrilla fragmented during harvesting, threatening further spread of this highly invasive plant.
NEXT STEPS	An aquatic herbicide will be used to kill the plants and halt production of the tubers and vegetative buds it uses to spread. Washing stations will be used to avoid movement of plant fragments by watercraft. The lake will be monitored for new infestations.

THE PEST	Leafy spurge (<i>Euphorbia esula</i>)
THE PLACE	Siskiyou County, Northern California
THE DECISION	Manual weed control
THE OUTCOME	The technique was ineffective, and the weed spread quickly.
NEXT STEPS	Herbicides will be used. A far greater quantity will be required now that the weed has spread.

THE PEST	Mixed weed population, high pressure
THE PLACE	Northern Iowa Research and Demonstration Farm, Kanawha, Iowa
THE DECISION	To test the impact of competition for 22, 36 and 43 days after planting corn
THE OUTCOME	Average daily yield loss of 0.5 bushels/day the first 22 days of competition, 1.1 bushels/day the next 14 days, and 17.2 bushels/day the next 7 days
NEXT STEPS	Researchers recommend diversified programs that include preemergence herbicides to protect crop yields from early-season competition by reducing the number of weeds emerging with the crop.

THE PEST	Various weeds
THE PLACE	North Texas, along the Ogallala Aquifer, where rapid depletion of groundwater threatens the long-term sustainability of irrigated agriculture
THE DECISION	To test the impact of replacing tillage with herbicides, since tillage promotes water loss from the soil due to evaporation.
THE OUTCOME	An estimated water savings of 1.75 inches per acre per year. Of seven options evaluated, herbicides were also the least costly.

THE PEST	Spotted knapweed (<i>Centaurea maculosa</i>) and Russian knapweed (<i>Acroptilon repens</i>)
THE PLACE	Sheridan County, Wyoming
THE DECISION	The county assisted landowners with the cost and application of the herbicides needed to control 120 hectares of this invading plant.
THE OUTCOME	Knapweed is now under control in Sheridan County. Experts estimate that without quick intervention, it might have covered as many as 2,000 hectares in two years and, with no action, doubled every five years.
NEXT STEPS	With help from local landowners, the county monitors all known sites. Any new infestations are quickly treated.

THE PEST	Milfoil (<i>Myriophyllum spp.</i>)
THE PLACE	Natick, Massachusetts
THE DECISION	Used a mechanical harvester, with divers to hand-pull weeds along beaches
THE OUTCOME	Costs of \$8,000 to \$25,000 per acre, with weeds returning. By comparison, an adjoining town using an herbicide <i>eradicated</i> milfoil for \$400 per acre.