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THINGS THAT GO

THEY MAY BE CUTE, BUT CRITTERS CAN BE TOUGH TO CONTEND WITH IN A NURSERY SETTING: A LOOK AT YOUR RANGE OF CONTROL OPTIONS

By Chip Bubl

As any Pacific Northwest grower can tell you, deer pose significant challenges to the nursery industry. Don Vandenberg of the North Willamette District wildlife biologist for the Oregon Department of Fish and Wildlife, noted that just over 25 percent of his deer damage management assessments involved nurseries, by far the top affected crop.

Vineyards came in second with 11 percent. Vandenberg's territoryMany new nurseries (and vineyards) are on ground that had been in grain or grass seed production until recently. Often, nursery production areas abut good deer and elk habitat. In addition, the creation of small parcels of land for mini-farms and subdivisions has changed localized deer and elk travel patterns. There is some debate among long-term nursery operators I spoke with about the relative number of deer now and in the past. Several are sure that suburban encroachment is not the issue, at least in terms of moving the deer toward the nurseries. They contend there are simply more deer.

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a real treat. Heavily munched first-year trees are often

What is clear is that the public perception of deer has changed. Many people who don't farm or actively garden enjoy watching the deer in their landscape. Hunting may be restricted in those areas. These rural residential parcels can provide protected habitat that allows the development of larger deer populations adjacent to farming operations.

Deer nibble field-grown, bare-root deciduous stock with particular relish. Favorite include *Malus*, *Prunus*, some *Acer* (Norway maples were eaten, but red and sugar maples were left untouched in one large Washington County nursery) and *Cornus*. Most growers indicated that 1-year-old was preferred. Freshly pushing bud grafts are

vation, wasting all the money invested in them up to that point. One grower ruefully commented that "deer never go for the dogs, they always take your best plants." Older trees can be damaged by antler rubbing.

As deer wander into an area that has none of their clear preferences, they will sample a number of species. Sometimes they find a new favorite. Then they will graze those rows intensely. Deer are known to respond to changes in the nutritional content of browse over a growing season and adjust their choices accordingly. What they find in a nursery is subject to the same sensory evaluations. Some conifers may be browsed anytime, but new growth is preferred. Herbaceous perennial plant nurseries

MUNCH IN THE NIGHT



have lists of deer-preferred plants.

One grower reported that deer browsed pulled orders prior to loading. Many report deer in hoop houses. While container operations are less affected, they are by no means immune if there is good cover and desirable plant material nearby.

When growers detect field-location patterns in deer damage and plant choices, some choose to plant the most vulnerable crops as far away from the deer travel itinerary as possible. The challenge for the grower is to adapt this to their planting, management and harvest operations without causing a lot of aggravation. Small nurseries generally don't have these options, since

the deer are usually all over everything.

A range of options

The Oregon Department of Fish and Wildlife recognizes the role of the agricultural community in providing habitat. They are interested in longterm cooperative relationships with growers. When a deer-damage call from a nursery comes in to an ODFW district office, the biologist will assess the situation and visit with the nursery grower about options. These options can escalate relative to the severity of the situation. Ultimately, the goal is to craft a set of

will provide long-term solutions that are economically feasible.

Nonlethal approaches include hazing with "cracker" shells, repellents and deer fencing. You can use cracker shells with a free agricultural fireworks permit from the Oregon State Fire Marshall's office (www.sfm.state.or.us). To download the form, go to the Web site, click on "How do I find" and then scroll down to "pyrotechnics." Midway down that page, you will find the links to the agricultural fireworks permits. The form requires information about the location and problem, the fire district that would respond in case of a fire and the signature of the state or federal wildlife biologist certifying the need. The permits are issued for two years. Hazing with cracker shells requires a lot of attention to deer encroachment — starting with early detection — to have any impact on changing deer foraging patterns. It is a relatively labor-intensive tool but, in the right location, can be effective.

Some growers of field-grown, bare-root stock have used repellents with success. The approach seeks to change deer's foraging behavior and send them to the neighbor's field.

VERTEBRATE PESTS



Many growers report that deer prefer to browse 1-year-old nursery stock, such as these deciduous trees.

Fences—either electric (above) or woven wire (below) are effective at keeping deer out, but gates are often the weak link.

ers. Common active ingredients include "putrescent egg solids" (also known as rotten eggs), blood meal and capsaicin derived from hot peppers. Some growers pick one repellent and stay with it; others use them in rotation. Repellents must be applied in the spring, when new shoots are pushing, and should be repeated several times at three- to four-week intervals. Success is a reduction of foraging losses to an acceptable level.

Physical barriers: effective but expensive

Deer fences can be a near-permanent solution but can also be expensive to install, challenging to maintain (if you go the electric route) and difficult to work around.

All fences must be tight to the ground. Deer are very clever at finding small gaps at the bottom of the fencing and going through them. Uneven ground can make good fence installation more challenging. Growers can

fence installers or do the project with their own crews.

Gates need to be deer-proof, and field staff must be trained to keep them closed when not in immediate use. Deer will move through gates day or night. This is often the weakest link in a deer fence system.

Woven wire deer/elk fences should be between 72 and 84 inches tall. Our western black-tail deer is a great jumper, so the taller fence is usually the best bet. Corners should be strong to stand elk rubbing and the strain of fence stretching. A well-built woven wire fence will last 25 years or more.

High-tensile electric fences, powered by New Zealand-style chargers, have become popular on smaller nurseries. They are easier to install and often cheaper to build than woven wire fences. Deep cycle battery or solar-driven chargers allow the fence to be installed where there is limited access to electricity. Grounding



fence to work. Most electric fences are at least 6 feet tall.

Electric fences must be maintained so that they continue to hold a charge. Vegetation under the fence needs to be removed often. The fence should be scouted after storms to look for downed limbs across the fence. If the fence is battery-powered, the batteries need to be rotated out on a regular schedule.

Elk and deer sometimes crash through electric fences when alarmed.



If not controlled, gophers can wreak havoc on roots.

Clean cultivation and low cover deter ground squirrels, or "grey diggers."

Unruly rabbits can damage both equipment and nursery stock, such as this *Liriope*.

There is good anecdotal evidence that some deer will move along a fence, apparently thinking about the great food inside, and then go through the fence, taking the charge. However, a number of growers have had excellent results with this type of fence.

Another fence option is tall plastic fencing. This UV-stabilized material is fairly easy to install and has been sufficient to change deer behavior around nurseries. The expected life of this fencing is about 10 to 15 years. It is sometimes combined with low woven wire fence or some electric hot wires to get a tight ground barrier.

When repellents fail

When these solutions are impractical, due to terrain, cost or management considerations, there are some other ways of lowering the deer pressure. The most straightforward option is to allow people to hunt on your property, as long as it is legal and safe to do so and they have the appropriate license and tag. Big games seasons, both general and controlled, run from late August through late March. Consult ODFW (www.dfw.state.or.us) for a complete description of hunting regulations and seasons.

Growers may qualify for the Landowner Preference Program (LOP), which can allow a landowner access to controlled hunting tags and options to use those tags before, during or after the hunting season to control damage. There must be presently occurring damage as verified by ODFW. Application can be made online, and tags issued are based on the acreage owned. See the ODFW Web site for complete details.

The Agricultural Damage or "Kill Permit" Program allows ODFW to issue permits and tags to landowners suffering agricultural damage outside the authorized big-game hunting seasons. This program requires an inspection from ODFW staff to identify the species, type of damage and evaluation of the property to ensure public safety if the permit is issued. It also requires that all animals harvested under the permit be donated to an ODFW-approved charitable organization.

Emergency hunts are used primarily in unanticipated situations where elk or deer move into a new area and cause damage. Emergency hunt permits require an intense review. The ODFW biologist must be able to document on-site evidence of presently occurring damage. Alternatives must be discussed. This permit is reviewed by the ODFW regional office, the director's office and the Oregon Fish and Wildlife Commission. Few permits are issued. The landowner or private hunters on a state-approved list carry out the emergency hunt. There are strict limits on timing and numbers taken. Emergency hunts are authorized only within the framework of big game hunting seasons.

Due to the lengthy review process, ODFW relies on the general hunting season and controlled hunting season (which includes the LOP Program) for the majority of population management and damage control.

pests of some concern. Voles (sometimes known as meadow mice) can migrate into can yards, especially in the winter. One grower reported that opening up the spacing and the appropriate use of baits generally took care of the situation. Visit with your chemical representative about the appropriate bait choice and application techniques. Care needs to be taken to prevent non-target injury. Bare-root nurseries can experience problems in holding beds, winter storages or sometimes in field edges. Several years ago, for unknown reasons, vole populations exploded in the Willamette Valley. Cultivation practices and raptors usually tend to keep the voles in check in the field, and baits manage them in storage/ collection locations.

Gophers are an issue in the Willamette Valley, like voles, are generally only problems at the headlands or margins of fields. Gophers can do a lot of root damage if allowed to get up a head of steam. They can damage drip systems. Cultivation discourages them. Baits or traps can be effectively used to stop a developing problem, so regular scouting will pay dividends.

Clean cultivation and low cover also deter ground squirrels, or "grey diggers." If populations build up, baits are effective, but they must be used according to the label at all times. Ground squirrels can be hunted as well.

Rabbit problems are sporadic but can be serious if their numbers are high. Generally, problems are far worse in nurseries in the southern end of the Willamette Valley, in Southern Oregon or on the east side of the Cascades. Even so, growers near Portland have



had problems with both "brush rabbit" and feral domestic rabbits. One nursery owner reported 700 1-gallon containers chewed down to 1-inch stubs overnight by feral domesticated rabbits. Reducing cover near the nursery and aggressive lethal control can help. If you are in high-pressure jackrabbit country, your problems are far more complex. Fencing is an option, but the fences have to be dug into the ground (or fanned out on the surface away from the field) as well as fastened above ground.

Beaver will sometimes travel considerable distances for a nursery meal, and there is a fairly wide range of plant material they will collect. Beaver are now classified as noxious rodents on private — not public — land and can be killed without a permit. However, wildlife biologists value beaver efforts in improving salmon smolt habitat and urge nonlethal control techniques wherever possible. A low (2.5-foot) wire fence across their access route is generally sufficient to keep them out.

Contact your district ODFW biologist, federal APHIS wildlife damage management specialists or private consultants for more details and options. A further resource is the handbook *Prevention and Control of Wildlife Damage*, available online at <http://digitalcommons.unl.edu/icwdmhandbook/>.

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