

EW'S GUIDE TO SPRING GARDENING

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Sow AND YE SHALL Reap

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elcome to the end of Winter and the beginning of Spring!



Your patch of ground is anxious for the

lush, green growth this valley is famous for, ready to be tilled, prepared for the dropping-in of seeds and tucking in of starter plants.



Are you ready to get some dirt under your fingernails? If so, read on.



In honor of the

beginning of the gardening season, EW offers a bouquet of ideas, perspectives and insights into the earthiest of pastimes.



(Can't you already taste those fresh tomatoes, zucchini and big sweet onions straight from your garden??)

Invasion of the Valley

Scotch broom and purple loosestrife may be pretty. But you don't want them anywhere near your yard or garden.

BY MAYA MUIR

Just about now, sandy hillsides in the Highland Butte area near Estacada are bursting out into brilliant yellow bloom of the gorse plant. Though a passer-by might be attracted by the bright color, Claire Hibler, Bureau of Land Management noxious weed coordinator, knows better. Though pretty, gorse is an alien invader from Scotland, and its dense thickets easily displace native plants. Not only is gorse nearly impossible to remove, but it has such a high creosote content that the plant is highly flammable—gorse was partly responsible for the Bandon burn of the 1930s.

Hibler says the gorse plant, which relishes sandy, gravelly soils and mild winters, has taken over vast areas of Oregon's south coast and in fact has just about reached its "ecological potential" on the coast. "We have it up by Portland, too," she says, "so all the ground in between is fair game. I'm really concerned."

The suffocation of native land and native plants by bushes, shrubs and trees brought in from different countries concerns many scientists, who say that Oregon will be sacrificing huge chunks of real estate unless invasive plant life can be curbed.

Gorse is just one of these invaders. Scotch broom, a close relative, competes with gorse in

Lane, Douglas, Coos and Clackamas counties, as well as along the coast.

Purple loosestrife has taken over 25,000 acres in one Washington state county alone. Tansy ragwort caused losses close to \$4 million dollars in western Oregon before it was stopped. In the Willamette Valley, Himalayan blackberries dominate innumerable riparian areas. English ivy is also becoming a problem. "There are areas it pretty much owns," says Tim Rhay of the city's public works department.

Another invader is knapweed, which is flooding the entire West. One particular variety of the plant, spotted knapweed, blankets over 4.7 million acres of Montana rangeland, and, says Jenny Dimling, botanist for the Willamette National Forest, it now lines each of the major roads over the Oregon Cascades into the West.

Where knapweed takes hold, nothing else grows; ecosystems simply unravel. Once complex and dynamic communities of

algae, lichens and plants, with their own particular growth cycles and nutrient requirements, disappear. More importantly, the pollination upon which bugs, birds and mammals depend also vanishes.

Ed Alverson, who manages the 325-acre Willow Creek Preserve in Eugene for The Nature Conservancy, is struggling to keep Scotch broom from spreading to the part of the preserve designated as upland prairie, a remnant of a habitat that used to be widespread in the valley. Now broom encroaches on several of the six rare, threatened, or endangered species in the preserve. At this point, Alverson says, Scotch broom is shadowing out



Yellow Starwort



Scotch Broom

the grasses and forbs that Fenders Blue—a very rare butterfly—depends on.

At the same time, Dimling is battling invasive St. Johnswort on Iron Mountain, one of the state's more important botanical areas.

Not all introduced plants become weeds. Of the 4,500 species of all types that have been introduced in this country, only around 15 percent are harmful. To thrive, the invaders must land in a region similar to the ones they came from, and have no predators. To really cause trouble, invaders must also have particularly successful reproductive or competitive strategies.

Purple loosestrife—with its striking 8-foot spires—manufactures up to 2.7 million seeds in a single year. The early bird spotted knapweed shoots out its leaves early, getting a jump on space, moisture and available nutrients. Scotch broom is able to use aluminum- and iron-bound phosphorus in otherwise phosphorus-deficient soils, improving its competitive edge.

Still, these weeds couldn't have gone far without humans. The plants are all opportunists that hitch rides with people, then drop seeds onto soil that's been stripped bare.

Raked over land, says Dimling, is the invader plants' favorite landing place. "Road cuts and clearcuts are the perfect habitat." And the plants easily spread from one disturbed area to another. Up to 90 percent of the spotted knapweed showing up on the west side, says Dimling, has been transported to clearcuts on the tires of logging trucks and 4-wheel drive vehicles.

Resigned to what has already happened, Dimling, like most land managers, is focusing on those patches

of land not yet dominated by invasive weeds.

Early detection and fast action are the keys, say land managers. BLM's Hibler rejoiced last spring when she discovered a few road systems not yellow with Scotch broom. "If we can keep road maintenance equip-



Blackberry

ment clean, and wash it off if it does get contaminated, those systems will be all right."

The Forest Service is attempting to add into contracts the stipulation that vehicles crossing from the east side to the west side of the state be washed down thoroughly.

Meanwhile, land managers are using what they call "integrated weed management"—hand-pulling, pesticides, changed management techniques and biocontrol—to protect crucial botanical areas.

Biocontrol, which uses invasive plants' native predators to beat populations back, may make the biggest difference. Before predators from another land can be introduced in the U.S., however, scientists must spend three to five years studying the insects to make sure they only eat the desired plant. The analysis costs around \$250,000 per insect, and that's even before the bugs leave the lab.

Eric Coombs heads the entomology division of Oregon's Weed Control Program. On the walls of his Salem office framed photographs show Oregon's 21 most unpopular weeds. The pictures are complemented by displays of 57 bugs he's brought in to decimate invader plants. The goal,



Spotted Knapweed

Coombs says, is to look for a handful of insects that will attack different parts of the plant. "We like to give [the invaders] a one-two-three punch," he says. "That approach weakens the plant from top to bottom."

Coombs says the decline of tansy ragwort represents the greatest biocontrol success in Oregon. Several years after release of two control agents in the late 1940s, the plant ceased to be a serious problem.

J However, despite six introduced predators, knapweeds are still leapfrogging over Oregon hillsides. But Coombs calls for patience, saying it can take from five to 20 years for results to manifest.

Beyond biocontrol, land managers are left with few choices. One is pulling weeds by hand—time-intensive and hard work—but sometimes the only way to protect

populations of nearby rare or threatened species. Still, it's often hard to convince land managers that it's worth the time. As one Montana weed-puller explains: "I found it difficult to recruit volunteers for a second try, and the weeds seemed amused by the effort."

Less amusing, at least to many concerned people, are the effects of pesticides. Agents at the state level, the Bureau of Land Management and the Forest Service

all say that pesticides, used sparingly and correctly, are a vital and safe weapon in a battle where land managers are distinctly outgunned.

But researchers such as Joy Belsky, ecologist with the Oregon Natural Resources

Council, say the invaders are just not worth the use of such measures. "Why are we poisoning Americans and our wildlife with toxic chemicals?" she asks. "Why aren't we talking about the real causes?" Belsky points out, for instance, that cattle on the east side have caused ideal conditions for invaders, as have



logging roads and clearcuts.

What does the future hold? More of the same. Meadow knapweed has recently popped up in the Hamilton Creek Watershed and in the Coast Range, Dalmatian toadflax has been found near Sweet Home and south of Oakridge.

Chuck Fairchild of the Eugene BLM, for one, is discouraged. On the east side of the Cascades, he says, agencies are aware of the problems and working well together to tackle them. "But here on the west side, people don't see the problem as big yet." He fears the agencies will wait until it's too late.

Others point out that, despite the extent of the problem, heavily infested areas remain at around only 5 percent of federal

Willamette Valley's Six Least Wanted Plants

GORSE ULEX EUROPAEUS
Evergreen shrub to 10 feet tall, with yellow pea-like flowers and 2 inch spines

From: Scotland

Problem: Spiny & flammable. Few other plants dominate so completely. Spreads prolifically.

Where now: Across Washington State to Mendocino, California

In Oregon: Douglas and Clackamas Counties

SCOTCH BROOM CYSTITUS SCOPARIUS

Evergreen shrub to 10 feet tall, with yellow pea-like flowers in spring

From: Scotland

Problem: Forms monoculture, pushing out native plants. Spreads prolifically.

Where now: From British Colum-

bia to California

In Oregon: Lane, Douglas, Coos, Clackamas and coastal strip

PURPLE LOOSESTRIFE LYTHRUM SALICARIA

Wetland plant to 10 feet tall, with spikes of purple flowers blooming from June to September

From: Northern Europe

Problem: Takes over wetlands, fills in ponds and lakes, spreads prolifically and is very difficult to eradicate.

Where now: wetlands across most of U.S.

In Oregon: Along Snake and Owyhee Rivers, localized spots in western part of the state

SPOTTED KNAPWEED CENTAUREA MACULOSA

Biennial to 3 feet tall, with small thistle-shaped flowers pink to purple.

From: Europe

Problem: Spreads rapidly on disturbed land east of Cascades, beginning to appear West of Cas-

cades. Forms monoculture.

Where now: Widespread in West, including over 46 million acres in Montana

In Oregon: widespread east of Cascades, now spreading west along roadways

HIMALAYAN BLACKBERRY RUBUS PROCERUS

Spiny shrub with small white flowers and edible berries

From: Asia

Problem: Thorny, prolific spreader. Hard to get rid of.

Where now: In city and suburban parks and wasteland all over the west, moving into riparian areas in forests

In Oregon: Everywhere

DALMATIAN TOADFLAX LINARIA DALMATICA

Perennial with snapdragon-like flowers from May to August to 3 feet tall

From: Yugoslavia

Problem: Spreads prolifically, even in very dry conditions.

Sow AND YE SHALL Reap

Waxy leaves make it able to withstand herbicide applications.

Where now: Scattered throughout West, including much of Montana

In Oregon: south of Oakridge, and along Highway 20 from Sweet Home to Burns

—Maya Muir

Want to Help? Join a work party to help fight the invaders. Call: Jenny Dimling, Willamette National Forest. Work parties are on Iron Mountain. 541-465-6321

Ed Alverson, The Nature Conservancy Work parties are in Willow Creek Preserve. 541-687-5586

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land. Purple loosestrife has *not* become a menace yet in Oregon, due to the personal vigilance of several botanists and public maintenance crews who have ripped it up on site, sealed it in plastic and carted it away. With increased public awareness, cooperation, and support for programs to eradicate and contain these species, the invasion of our native biological communities can be slowed and controlled, if not reversed.

Nothing less than the Northwest's biological diversity and the fate of its wild lands is at stake. ■

A Valley Rich in Organic Options

Though many people prefer to eat only organic fruits, vegetables and dairy products, most of them don't have the time or expertise to grow the "clean" food themselves. So in order to promote their own health and well-being, an increasing number of consumers are purchasing organic products from local stores and farmers markets.

But just because a head of lettuce or a frozen pizza is on the shelf of a natural foods store, what's to guarantee that everything in the product is organic?

That's where Oregon Tilth comes in. The Portland-based organization whose name—"tilth"—means "that which is tilled," began with a group of farmers from the Washington/Idaho Palouse country over two decades ago. These men and women wanted to support the intention of using the land wisely, and also to encourage farmers who grew organic food. According to Yvonne Frost, who heads up Oregon Tilth, the organization spread through the west, with chapters opening up in just about every farming community. In 1987, the chapter called Willamette Valley Tilth reincorporated as Oregon Tilth. Soon after, the tilth applied to the state of Oregon to become official certifiers of organic products—it is the