



Seven Front-Line Best Practices in the Battle Against Noxious Weeds

[Noxious weeds](#) are plants designated by federal, state or local officials as injurious to public health, agriculture, recreation, wildlife or property. Once a weed is classified as noxious, authorities are empowered to take a variety of actions to contain and manage it.

At the federal level, for example, the Department of Agriculture (USDA) has [designated 112 aquatic, parasitic and terrestrial plants as noxious](#). USDA has the authority to limit the interstate transport of noxious weeds, to establish quarantines, and to inspect, seize and destroy noxious weeds discovered at ports of entry and exit, nurseries and other sites.

State and local officials who are on the front lines in the battle against noxious weeds also have broad authorities within their own jurisdiction – enabling them to designate noxious weeds and to defend against them. Together the states have designated almost 600 weed species as noxious. In addition, each state has established its own requirements for the control and movement of noxious weeds and [noxious weed seeds](#) within its borders. States can establish quarantines, seize noxious plants and require landowners to treat noxious weeds growing on their property.

WSSA recently interviewed noxious weed authorities in [Delaware](#), [Mississippi](#), [North Dakota](#) and [Wyoming](#) about their noxious weed control efforts. Seven best practices emerged from those discussions.

1. Narrow your focus.

Many states take a “less is more” approach and limit their noxious weed list to those plants that represent the greatest threat. Delaware, for example, has just six weeds designated as noxious, while Mississippi has 10, North Dakota has 11 and Wyoming has 30.

“We try to keep [our list](#) short and simple,” says Chelsey Penuel of the North Dakota Department of Agriculture. “Otherwise it’s too hard for us to manage and too easy for landowners to forget.”

2. Go local.

Since noxious weed challenges can vary widely, many states with successful control programs focus on localization, with funds and control programs tailored to reflect each community and its noxious weed challenges. Wyoming, for example, requires a local weed and pest

organization in each of the state's 23 counties – empowering them to fund control programs by levying local property taxes.

North Dakota places a similar emphasis on localization by empowering city and county weed boards to enforce noxious weed controls. [Targeted Assistance Grants](#) are available to help them fund their noxious weed management strategies.

3. Emphasize partnerships over penalties.

Without exception, the experts we interviewed say they use enforcement actions only as a last resort. Instead, they partner with landowners to help them address noxious weed infestations without incurring a significant financial burden.

- **Share costs**

Wyoming, for example, offers a cost-sharing program, with districts paying up to 80 percent of the control costs and landowners paying the remainder.

“We have quarantine authority, but seldom use it,” says Slade Franklin, state weed and pest coordinator for the Wyoming Department of Agriculture. “By offering cost sharing, we don’t often have to go down the regulatory path.”

Chelsey Penuel says North Dakota takes a similar approach, with cost-sharing programs administered by local weed boards. “As a result, local noxious weed officials are more likely to be seen as a partner than an enemy,” she says.

John Byrd, Ph.D., of the Mississippi State University Extension Service says his state’s cost-sharing strategies were instrumental in the control of noxious cogongrass. Grant monies were used to provide landowners with the herbicides they needed to treat the grassy weed. State officials even hired contract spraying teams to help with the control effort.

- **Share equipment**

Delaware has established a unique equipment loaner program to support landowners who lack the sprayers or wipers they need to treat emerging noxious weed infestations. They can simply borrow the equipment from noxious weed officials.

In Mississippi, John Byrd addressed equipment affordability by designing a low-cost applicator landowners can use to treat noxious Chinese tallow tree. He uses a simple hydration backpack available at most any sporting goods store to house the herbicide, and then attaches a large livestock syringe to deliver precise applications.

“You simply hack through the tallow tree bark and then use the syringe to inject one milliliter of herbicide into the opening,” Byrd said. “It’s a great way to kill the tree with minimal herbicide, while also protecting adjacent trees.”



*A low-cost herbicide applicator.
Photo courtesy of John Byrd,
Mississippi State University.*

4. Collaborate with other organizations.

Each of the individuals we interviewed said collaborating with other organizations, departments and divisions is fundamental to effective noxious weed management.

In Wyoming, for example, the state's noxious weed team broadens its reach by partnering with the [Greater Yellowstone Coordinating Committee](#) – a group looking at weed control on a landscape scale. Members are taking a cooperative approach to management of noxious weed species across 15 million acres of geographically contiguous, ecologically interdependent federal lands.

Mississippi has formed a similar cooperative weed management team that promotes collaboration among federal, state and local agencies and organizations. Together they focus on education and on obtaining the grant funding needed for cost-share assistance programs.

Noxious weed specialists in both Mississippi and Delaware partner closely with their respective Departments of Transportation to identify and control noxious weeds along roadsides. When DOT personnel identify infestations, they record GPS coordinates so teams can map, treat and monitor the weeds over time.

To address noxious weed management on state lands and in local parks, Delaware's noxious weed team also partners closely with the [Delaware Invasive Species Council](#).

5. Intervene early.

In Wyoming, an early detection/early response approach is helping the state battle medusahead and ventenata – two noxious grasses that threaten rangelands. “We’ve established a Wyoming Invasive Grass Working Group to guide monitoring, mapping and treatment, and it has had a very successful start,” says Slade Franklin.

Todd Davis, noxious weed specialist supervisor for Delaware, says his team also focuses on proactivity – collaborating with seed and crop protection sales reps, farmers and university extension personnel to educate, identify issues and focus on early intervention. “Each winter, we visit as many farmers as possible to discuss issues and management plans,” Davis says.

Early intervention was especially important when Delaware authorities found the state-designated noxious weed Palmer amaranth in late-season soybean crops.

“We took weed scientists with us to when we visited growers,” Davis says. “We told them what to look for, gave them a management guide and discussed how to remove Palmer amaranth plants while keeping the seeds contained. Through a lot of vigilance, communication and hard work, we’ve turned a potential disaster situation to a manageable one.”

6. Pursue a broad range of controls and prevention strategies.

State noxious weed experts encourage a fully integrated approach to weed management that goes beyond the use of herbicides. In Delaware, for example, growers are encouraged to focus

on the fundamentals, including crop rotation and the use of cover crops to shade out noxious weeds before they can become established.

North Dakota has a [longstanding and successful biocontrol program](#) to reduce the density of leafy spurge, a noxious weed that infests more than 800,000 acres in the state. Flea beetles known to feed on the weed are now established in nearly every county and are playing a major role in leafy spurge control.



Beetles feeding on leafy spurge. USDA ARS Archives.

The state also supports a [weed-free forage program](#) that allows producers to sell forage or mulch that is certified as free of weed seeds. The forage acreage must be inspected no more than 10 days before harvest and meet standards established by the [North American Invasive Species Management Association \(NAISMA\)](#). Certified products are often required for public projects such as road building and erosion control.

North Dakota also encourages broad adoption of [NAISMA's Weed-Free Gravel Standards](#).

7. Involve the public.

In Wyoming where outdoor activities are a way of life, the state's Weed and Pest Council focuses on public outreach so local residents are more aware of noxious weed risks.

Among their more visible efforts are the "boot brush" stations now posted at trail heads, fishing sites and similar outdoor gathering spots. The stations include a brush visitors can use to clean their shoes so they don't take noxious weed seeds with them when they leave. The same stations also include information on noxious weeds that is provided by [PlayCleanGo](#), a nationwide initiative to educate the public in how to stop the spread of invasive species.



Boot brush station. Photo courtesy of Slade Franklin, Wyoming Department of Agriculture.

For more information

To learn more about weeds and their control, visit the Weed Science Society of America website: www.wssa.net.