



New NR40 Rule Targets Invasive Species

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Origin of the Invasive Species Rule

The state Department of Natural Resources (DNR) has spent several years developing comprehensive strategies to control invasive species as authorized under Wis. Stat. § 23.22 (2). The state statute was developed in response to President Clinton's 1999 Executive Order 13112 which called for state and national efforts to control invasive species (Stier, 2000). Another statute, 15.347 (18), created the Wisconsin Council on Invasive Species. The Council's mission is to make recommendations to the DNR for classifying invasive species. Council members include a UW entomology professor and representatives from the Wisconsin Nursery Association, The Nature Conservancy, the Wisconsin Association of Lakes, and one from each of the Departments of Agriculture, Commerce, Tourism, and Transportation.

The Rule

The NR40 rule requires the development of invasive species lists for aquatic and terrestrial plants and animals. The rule has been through a public review process, which included email, mail, and on-site comments during several statewide listening sessions in August 2008. It was presented to the DNR board for approval in April 2009. Species are to be segregated into either prohibited, restricted, or non-invasive categories. Lists are compiled through various methods ranging from mail surveys to reviews of popular and scientific literature. Available information is then reviewed by a Species Assessment Group (SAG), which includes specialists in that general area, along with other governmental and non-governmental organizations.

Prohibited species cannot be transported, transferred, or introduced into the state, or, if already present, into another location. Species designated as prohibited are deemed to either not yet exist in the state or exist as small populations which are amenable to eradication. Restricted species are those designated as invasive but already widespread: they may be possessed, but cannot be moved or transferred without a DNR permit.

The rule allows the DNR to inspect, sample, and control prohibited species on private lands, either with the owner's permission or a warrant. The DNR can order

responsible parties to control or manage prohibited species-noncompliance may result in control by the DNR, for which the responsible party will be billed. Control of restricted species will be encouraged but not required. Fines will only be levied after repeated instances of non-compliance with the rule.

Target Species

The current list contains 206 plant species being considered for invasiveness. About one-third have been reviewed so far, and listed as either prohibited or restricted. Many of them are relatively unknown to most people, such as yellow iris and Siberian pea shrub. Other species are better known, though not necessarily desirable due to their effects on human health,



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such as wild parsnip and giant hogweed (sap causes severe burns). A fair number are species that have been intentionally planted, or at least otherwise maintained, on golf courses and landscaped areas. These include Scotch pine, Norway maple, black locust, glossy buckthorn and even some native willows. There are also a fair number of grasses. Some of the grasses are starting to show up on golf course properties in the state, despite never having been intentionally planted. Examples include common reed (*Phragmites* spp.), some cattail species, and reed canarygrass (*Phalaris* spp.). Common reed and cattails are typically found around ponds and creeks; populations of reed canarygrass often start in wet areas but can be found in somewhat drier sites such as infrequently mown slopes.

Kentucky bluegrass (*Poa pratensis* L.), Canada bluegrass (*Poa compressa* L.), and tall fescue (*[Schedonorus phoenix* (Scop.) Holub], formerly *Festuca arundinacea* Schreb.) are all on the list, waiting to be classified as either prohibited or restricted. If prohibited, the land manager will have to eradicate them. Given the widespread distribution of Kentucky bluegrass, and perhaps tall fescue, a prohibited designation is unlikely. Even a restricted designation, though, makes the sale, transport, and planting of seed illegal. The rule currently allows for restricted species to exist on a property, but is unclear if management intended to help them thrive would be allowed (e.g., fertilizing, mowing, irrigating). Creeping bentgrass shows up on some other lists of invasive species (e.g., The Nature Conservancy, which has a representative on Wisconsin's Council, has creeping bentgrass listed as invasive), although Wisconsin currently does not have it listed for review.

What has UW done?

Dr. Chris Williamson and I have given extension presentations on invasive species since about 2000. My involvement began in autumn 1999 when I attended a meeting of the American Seed Trade Association in Chicago. In 2005 I proposed a symposium on invasive species for the national Crop Science Society of America conference to raise awareness among researchers. One of the guest speakers was Dr. Mandy Tu of The Nature Conservancy, who pleasantly informed the audience that all we had to do was substitute creeping bentgrass, Kentucky bluegrass, perennial ryegrass, and fescues with other grasses that weren't listed as invasive. I've given talks to both the Crop Science Society of America and the Weed Science Society of America on what little research actually showed or didn't show regarding the invasiveness of turfgrasses. I've also spoken at turf conferences in CO, MT, OH, IN, PA, and WI to highlight the issue for the industry, and written several trade journal articles. When Wisconsin started developing the invasive

species list, perennial ryegrass was included. It was removed after I provided information about its biology, including lack of cold tolerance and bunch type growth habit. Beginning in 2008, I've served on the Species Assessment Group for the DNR, which collects and reviews scientific information to validate a given invasiveness designation. Earlier this winter, several of us from UW-Madison reviewed a draft of the proposed NR40 rule and suggested some revisions which helped to shape the actual rule. These revisions included de-emphasizing the use of fines for land managers who happened to have invasive species on their sites.

Early on in the process it became clear to me that most of the so-called information used to justify listing of turfgrasses as invasive was anecdotal, not scientific. One of the most galvanizing events was the publication of a book titled *Invasive Plants of the Upper Midwest*. Shortly after publication, it received an award from the Weed Science Society of America, despite containing obvious misinformation such as statements that Kentucky bluegrass can take over wooded sites. (Wouldn't we all like to have a Kentucky bluegrass that is so shade tolerant!) Several years ago I started



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writing grants to fund studies of the invasiveness of turfgrasses, finally receiving a four-year grant in 2006. The grant was used to hire a graduate student, Mark Garrison, and a part-time undergraduate student. So far we've completed three studies (Garrison and Stier, 2008). The first investigated the survival of turfgrasses on defunct (closed) golf courses. A manuscript describing the results is currently in review for publication in the *Journal for Invasive Plant Science and Management*. A second study, conducted on restored prairie areas at two Wisconsin golf courses, evaluated the ability of numerous turfgrass species and varieties to grow and survive in prairie settings. The article has recently been accepted for publication in *Crop Science* and will be a useful document for showing how turfgrasses struggle to survive in prairie settings. A third project was concluded last summer. Natural areas bordering twelve Wisconsin golf courses, representing southern, central, and northern Wisconsin ecosystems, and a range of age (0-15, 25-35, and over 75 years old), were surveyed for the presence of turfgrasses. The project was designed to answer a question posed to me by the U.S. Department of Agriculture—"Does creeping bentgrass spread from golf courses into natural areas?" We are currently analyzing thousands of data points, and plan on submitting the results to an ecology journal sometime this summer.

The results of these studies have already begun to be shared with the Wisconsin DNR. While it's often difficult to understand why we need to do research that might not have an immediate use for turf management, part of the UW turf group's responsibility is to conduct research ahead of issues so that meaningful, accurate information can be provided in a timely manner. I've appreciated the support we've had from Wisconsin golf course superintendents for these studies—they could not have been completed without it. We'll continue to monitor the progress of NR40 and provide information to the DNR so that any listing of an invasive species has merit.

What superintendents can do

Superintendents and golf course developers should familiarize themselves with NR40, and with species that are deemed prohibited or restricted. Carefully consider if a piece of property is worth purchasing if it hosts a significant amount of an invasive species, as at some point you may be required to control or remove the plants. Check the property on or around your golf course: if you find prohibited species, develop a plan to get them under control. UW Extension specialists are here to help. Finally, as always, I encourage all superintendents to remain active in the Wisconsin Golf Course Superintendents Association so up-to-date information can be received from UW Extension and other sources. The Association should work with other Green Industry organizations and government to provide sound infor-

mation on the presence, identification, and management of invasive species. Show up and have a say at public hearings and don't hesitate to participate in the DNR review process.

To learn more about Wisconsin's invasive species rule, visit the NR40 rule website at <http://ua.dnr.wi.gov/invasives/classification/>

References

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