

What?

There is Maintenance to No-Mow, Low-Input

Matt Cavanaugh, University of Minnesota

Many newer golf courses have designed areas to be maintained as no-mow areas and many established golf courses have been converting heavily maintained areas to no-mow areas. The vast majority of these areas would have been or once were established with Kentucky bluegrass. The popularity of no-mow areas has been growing in response to reducing the inputs needed to maintain Kentucky bluegrass rough, but also to provide a contrast to the heavily maintained areas of a golf course. Kentucky bluegrass is widely used due to its dark green color, high turf density, recovery potential (through rhizomes) and improved pest resistance with the newer cultivars. However, in order to maintain turf quality and performance, Kentucky bluegrass requires

high levels of water, fertilizer, pesticides and mowing frequency. These inputs have caused turf managers to reduce the amount of mowed Kentucky bluegrass rough. Many no-mow areas are seen around tees, behind greens and in “out-of-play” areas along fairways. When initially established, many stakeholders envision areas that require no inputs, provide aesthetic value through waving grass, no weeds and of course it is easy to find one’s golf ball and play from it. Those of you with no-mow areas know this is not often the case (I can see you shaking your head right now). The resulting information will provide some insight on the issues and maintenance involved with no-mow, low-input areas based on the University of Minnesota research and my person-



Low Input Areas????

University of Minnesota

l experience with these areas.

Species to use in no-mow, low-input areas

Kentucky bluegrass is not ideal for no-mow, low-input areas. Kentucky bluegrass in a no-mow setting will often develop large amounts of rust (not ideal for the individuals that like to wear white), fall over and become difficult to play out of and over time become thin out allowing for weed invasion. In the Upper Midwest, warm-season grasses are slow to start and enter dormancy early in the fall allowing for increased weed pressure (3). Warm-season species are also often too tall for no-mow areas resulting in slow play and frustrated golfers.

Research has shown that in the Upper

Midwest, the cool-season species of fine fescue are the most useful species to use in a no-mow, low-maintenance situations due to their appropriate height and aesthetic value (1). The fine fescue species include Chewing's fescue, hard fescue, sheep fescue, strong creeping red fescue and slender creeping red fescue.

Broadleaf & grassy weed invasion.

Broadleaf weed invasion is often the biggest issue turf managers face in no-mow, low-input situations. Some of the best cultural practices at reducing weed invasion are mowing, fertilization and irrigation, all of which are often not utilized in these areas. Broadleaf weeds seen in no-mow areas include legumes like white clover, black medic and birdsfoot trefoil and other hard to control weeds like Canada thistle and milkweed. Proper timing is critical for weed management. If weeds become too large, successful weed control should not be expected. Getting to these weeds when they are young and actively growing will be crucial. However, weed management is often put on the back burner for more pressing issues allowing weeds to get out of hand. In this case, it is recommended to mow the area down,



Picture perfect placement and well maintained low maintenance turf

let it establish again for 2-3 weeks and then provide proper weed control. This will allow for the weeds to reestablish, but are much smaller and easier to control. Keep in mind that if weed control is done in the spring, tire tracks made when driving through these areas to control weeds may persist and can be unsightly. However, this is often not as bad as the weeds that will develop without a herbicide application. For perennial weeds, fall applications are always best as they will move herbicide down into the roots with movement of nutrient and carbohydrates needed for winter survival. Grassy weeds such as reed canarygrass, quackgrass and orchardgrass are often a problem in these ar-

reas as well. Cool-season grassy weed control in other cool-season grasses is often very difficult to obtain (case in point, poa annua control in creeping bentgrass). However, the fine fescues are very tolerant of two grassy weed herbicides which may allow for controlling these grassy weed species. Sethoxydim and fluazifop are grassy weed herbicides originally developed for use in broadleaf cropping systems like soybeans. Both are from the same family of herbicides, but there are differences between the two that should be recognized before using them to obtain proper weed control. These differences are outlined in Table 1. Pre-emergent herbicides can also be used such as dithiopyr, pendimethalin and



Kentucky bluegrass used as a low maintenance turf tends to initially grow thick and difficult to play from followed by regression and thinning that leaves voids for weed encroachment.

If left unchecked, broad leaf weeds such as Canadian Thistle, milkweed and legumes like white clover and black medic will quickly invade low mow/maintenance areas and create long term challenges. BMPs to reduce weed invasion are mowing, fertilization and irrigation, especially during establishment.



Sethoxydim and fluazifop are two herbicides designed specifically to remove grassy weed species, such as reed canary grass, from stands of fine fescue low maintenance turf.

prodiamine. Be aware that benefin plus trifluralin can injure fine fescues. Table 1. Differences in applying the two grassy weed herbicides se-

ted down areas will also inhibit new growth from emerging in the spring. If biomass is not removed, the areas will become thin making it a perfect

Table 1. Differences in applying the two grassy weed herbicides sethoxydim and fluazifop (2).

Sethoxydim	Fluazifop
Apply to small, actively growing plants.	Apply to small, actively growing plants.
Rapidly degraded by UV light. Apply when cloudy.	Not degraded by sunlight
Apply when temperatures are greater than 70°F.	Apply when temperatures are greater than 70°F.
Reduced soil moisture reduces effectiveness.	Ineffective under drought conditions.
In hard water: add acidifier or water conditioning agent to prevent hard water issues.	Not influenced by hard water.
Need for a crop oil surfactant (consult label).	Non-ionic surfactant needed (consult label).
	When mixed with auxin mimic herbicides; grassy weed control is not obtained.

thoxydim and fluazifop (2).

Clipping management:

Although these areas are described as no-mow, they should be mowed once per year in the fall. If the biomass is left on site over the winter, they become matted down by snow resulting in a perfect environment for disease establishment (snow mold). Mat-

environment for broadleaf weed invasion. Mowing should be initiated in the fall (October-November) when the areas are dry. It often works to mow these areas several times starting at a high height (8-10 inches) and lowering the mower deck over several mowings (down to 2-3 inches) resulting in plant tissue being mulched back into the profile. Some cases may allow for one time mowing and blowing the



Clipping management is critical for a solid stand of low maintenance turf

clippings off site or collecting the clippings for disposal elsewhere. Be sure you have enough room for clipping disposal. Burning is not recommended for fine fescues as the growing point is often too high (little protection from soil) allowing them to be damaged by the fire. Warm-season grasses are better in a prescribed burning situation because of the crowns being deeper into the soil surface.

Proper site assessment:

Not all sites are appropriate for no-mow, low-input areas that will be established with fine fescues. Sites with high soil fertility, high soil moisture

or sites receiving irrigation will result in areas that are too thick, become matted down and provide a great site for grassy weed encroachment. Site selection should not be taken lightly. Areas with poor soil and less water often provide high quality no-mow, low-input areas. Keep in mind that it's not as easy as killing off an area, planting some seed and watching it grow.

If you are looking at converting Kentucky bluegrass rough to no-mow areas be sure to convey the correct information on what to expect. Discuss species selection, weed management, mowing issues, water issues and especially proper site selection. There

are different techniques that need to be implemented in order to keep these areas looking their best. The expectations from stakeholders and golfers are often too high and don't take into account the problems that are most prevalent. Be positive, but convey fact based information. Many people consider no-mow, low-input grasses and they get the idea that these areas are "no maintenance". However, I chose to consider these areas as "different maintenance", but have a place within your turf management area.

1. Dernoden, P.H. 1998. Golf Course Manage.
2. Diesburg, K., N. Christians, R. Moore, B. Branham, T. Danneberger, Z. Reicher, T. Voigt, D. Minner, and R. Newman. 1997. Species for low-input sustainable turf in the US upper Midwest. Agron. J. 89:690-694.
3. Tu, M., C. Hurd, and J. Randall. 2001. Weed Control Methods Handbook. The Nature Conservancy.
4. Voigt, T., and J. Tallarico. 2004. Turf and native grasses for out-of-play areas. Golf Course Manage. 72(3): 109-113.



HARTMAN
Golf Course Construction
& Renovation

Quality since 1971...

Specializing in...

Bunkers • Tees • Laser Leveling • Green Drainage • Irrigation • Design • Pump Station Upgrades

8099 Bavaria Rd.
Victoria, MN 55386
952.443.2990

info@hartmancompanies.com
www.hartmancompanies.com