TURF HACKER

Ideas about growing grass

SATURDAY, 23 AUGUST 2014

"Grow What Grows"

A few years ago I noticed that what little bentgrass was still around on my greens was seeming to be taking back over.

This got me thinking. Uh oh.

At this time there was very little bentgrass left on my greens. They were almost 100% poa annua. I was in the process of making big changes to my management techniques. The use of a moisture meter allowed me to keep moisture levels controlled during the optimum growing season. I changed over to the MLSN fertility guidelines and my fertilizer rates were changed to be based on the temperature based Growth Potential. I changed the way I mow, cultivate and almost every other aspect of the putting green maintenance.

I started using a moisture meter in 2008. All of a sudden I wasn't guessing on soil moisture levels. Although I wasn't precisely controlling moisture similar to how they do on Tour I was able to keep the greens significantly drier. Some people say that in my climate (West Coast of Canada) it is impossible to keep the greens dry as it rains for half the year. The difference I think is that when temperatures are the most conductive for turfgrass growth I had full control of soil moisture levels. Back when I was guessing the soil moisture we probably consistently applied double the required water for healthy turf growth.

Since I was using growth potential fertility most of my fertilizer applications are made in the summer, again when I have full control of the soil moisture. I wasn't pushing turf growth in the early spring and fall like I used to. Based on my observations I really think that pushing growth during these cool wet times is a big contributing factor to the success of poa vs bentgrass. We are often too eager to get things moving in the spring and I think this causes all kinds of issues. During these cool wet periods the bentgrass looked fantastic and the poa looked hungry, very very hungry.

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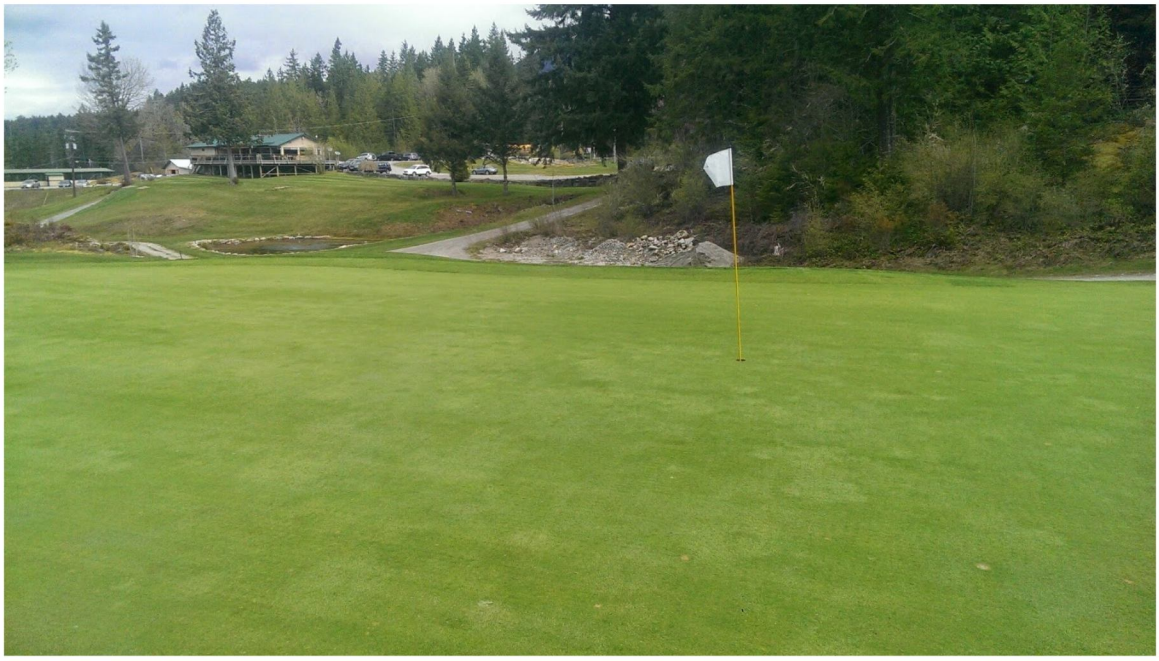
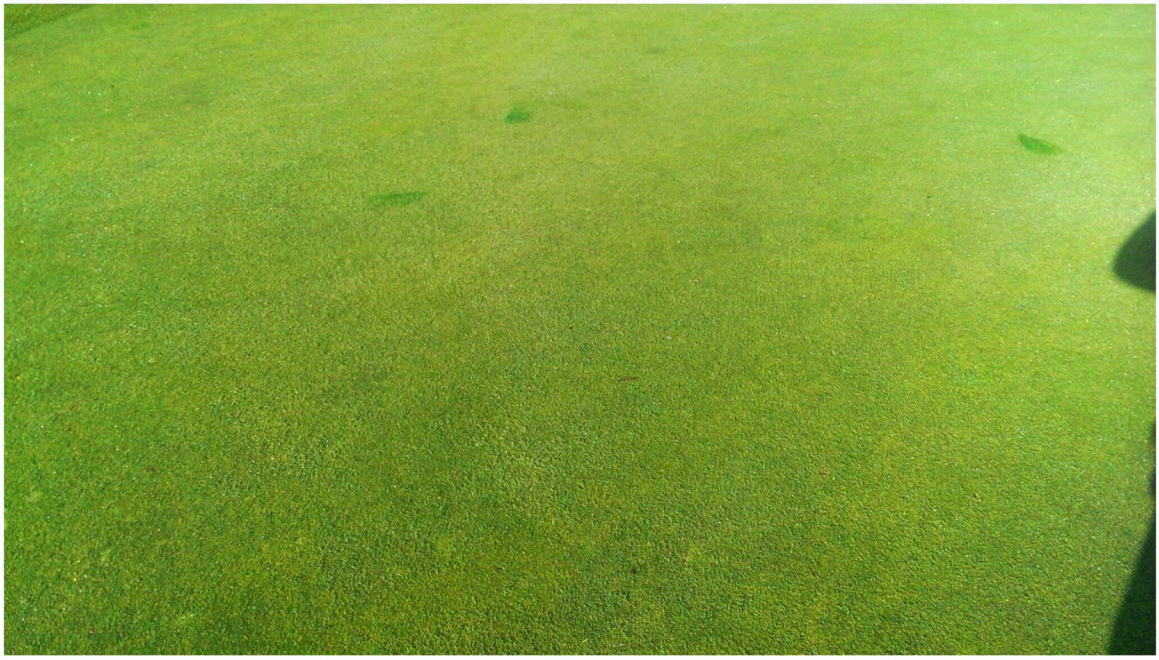


Mid spring the poa is still hungry and the bent grain is starting to show

I also stopped applying fertilizer unless it was shown to be deficient according to the MLSN. I don't have any direct observations that would suggest that this is a major contributing factor but I know that poa loves phosphorous and I haven't applied any in 2 years now. This process has also led to a drop in soil pH which probably also helps the bent. This drop in pH has sure helped my tees as discussed in this post about clover.



Furry bent in early spring doing well under the low/no fertility

I have also been making real progress to reduce the amount of pesticide applied. This summer my poa has suffered an almost constant attack from Cyanobacteria. I have been able to keep it under control, though, with ammonium sulphate applications and by avoiding excessive moisture. This has contributed to a general thinning of the otherwise super dense poa sward and has allowed the established bentgrass to creep in. I just wish I had the budget to afford more than one bucket of bent seed each season so that I could inter-seed into the disease scars. Unfortunately I can only inter-seed into aeration holes once a

year at very light rates.

A rather extreme case of Cyanobacteria has thinned the poa a bit too much.

through the winter has probably also helped. Keeping the higher metabolizing poa at bay during the cool parts of the year when poa is known to make advances can't be a bad thing.

I have also stopped verticutting my greens. I asked myself why I was doing this and made some measurements. It really made no difference playability-wise and it also contributed to disease spread as observed in this post this spring. There is a lot of talk about the disturbance theory and verticutting only allows poa to establish and spread. I had never verticut deep enough to remove much thatch and honestly thatch on my greens isn't much of a problem. I think this is due in part to my change to temperature based fertility and daily rolling. If conditions aren't waterlogged the soil microbes can better do their job breaking down the soil organic matter. Matching fertilizer applications to temperature might match thatch production to thatch decomposition more closely.

We have been rolling daily and mowing every other day for almost 4 years now. This might also contribute to the bentgrass domination as per the disturbance theory.

Using Primo

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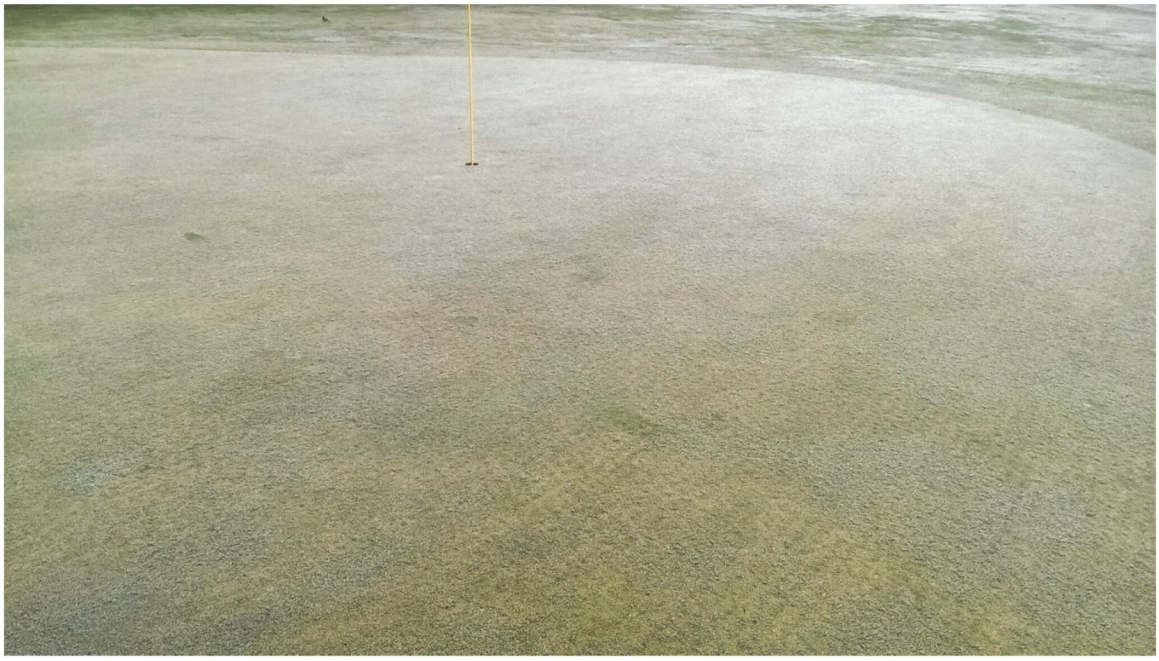


bentgrass is very visible during the winter frosts. The poa is yellow and not very happy.

I now have a very distinct turf grain on my greens but this doesn't bother me. It doesn't affect the ball roll enough especially with my frequent daily rolling. I also feel that bentgrass grain give the bent a competitive advantage over the Poa. The longer leaf blade gives the plant more energy and physically covers over the poa plants.

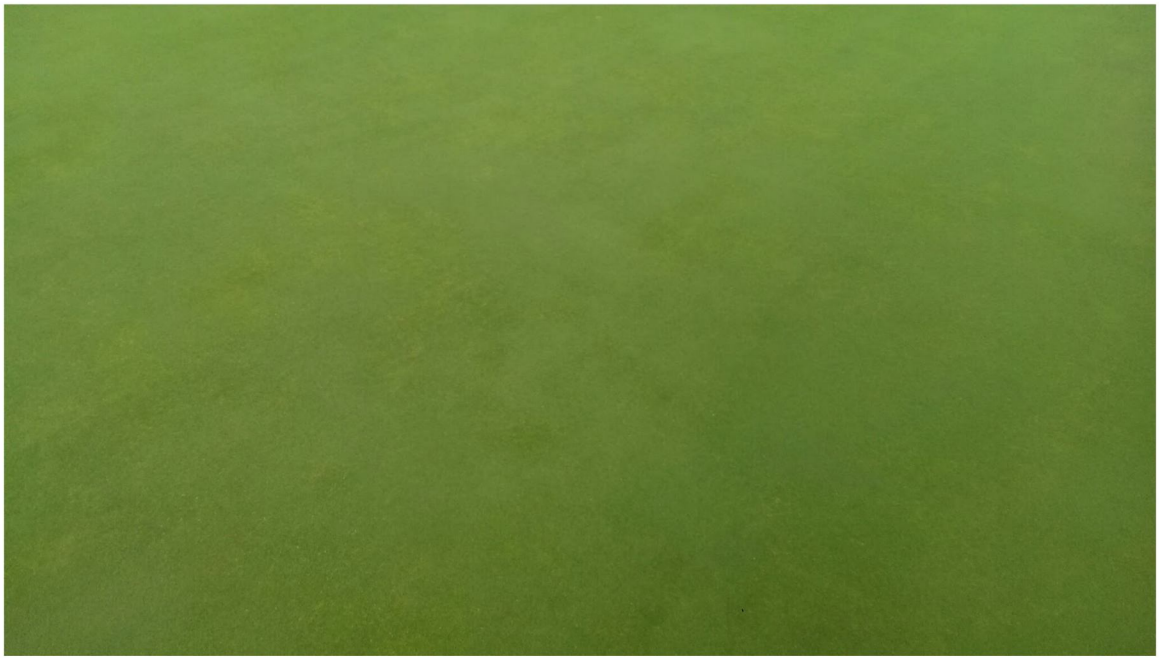
The coarser bent now consistently covers most of my putting greens. The grainy turf covers over the finer poa plant.

The remaining bentgrass was doing so good that I decided to over-seed the greens to get a more uniform bentgrass population established. Starting in 2012 I started lightly over-seeding the greens during the spring aeration at about 22kg of seed/ha per season. I also put down a number of cultivars.

The thinking was this; may the best grass win. With such a drastic change to my management techniques I wanted to see what grass species would do better and provide a bit of insurance in case one species decided to check out. Of course poa will always be here but if my new management techniques favored the bentgrass I want there to be as much bent out there as possible.

This summer the bent has really started to flourish and it now covers significant portions of most of my putting greens. In some areas it has coalesced into dense patches but for the most part it is evenly established alongside the poa. I know you might be thinking that these patches are just different varieties of Poa but they aren't. Before I started over-seeding I had a very pure stand of poa with almost no mottling.

On some greens the bent has done better than others and as time goes on I will shift my over-seed rates higher on the greens with less bent and probably stop over-seeding altogether on the other greens that have a good population of bent established.



Bent has quickly become the dominant turf species in a few short years. Only speckles of poa remain on this green.

I am not interested in extreme measures. In a lot of people's efforts to "manage for the sustainable turf" they end up throwing more money, resources, stress and suffer less than ideal conditions than is probably needed. I'm not aggressively acidifying the soil. I'm just not applying calcium unless it's needed. I'm not drying down the greens to extreme levels. I'm keeping a constant soil moisture in the 20%-30% range. I'm not pounding any kind of chemicals. I'm using pesticides as a last resort allowing the natural susceptibility of the different turf species to fungal disease to weed things out. Maybe my pesticide use could be considered extreme with a yearly EIQ goal equivalent to two light chlorothalonil applications.

I have had a lot of people tell me that growing bent can't be done in my climate. "Grow what grows." My answer to that is how long have we been completely guessing about what we are doing? How long have we been using moisture meters? Are we applying fertilizer to suit the actual turf needs based on temperature? Are we applying pesticides preventatively? How often do we verticut? How much phosphorous have we applied to our greens this year? Why? Are all our fertility inputs actually needed?

It took 20 years of over-watering, over-fertilizing, and overuse of pesticides for my greens to become almost pure poa annua.

I'm not against poa. It makes for really nice greens. It just so happens that the changes I have made to reduce inputs and eliminate waste and guesswork has lead to conditions that favor bentgrass. If that is "what grows" then it just makes sense to grow it.

My goal isn't to have a pure stand of bentgrass. None of my surfaces are managed for pure perfection. I

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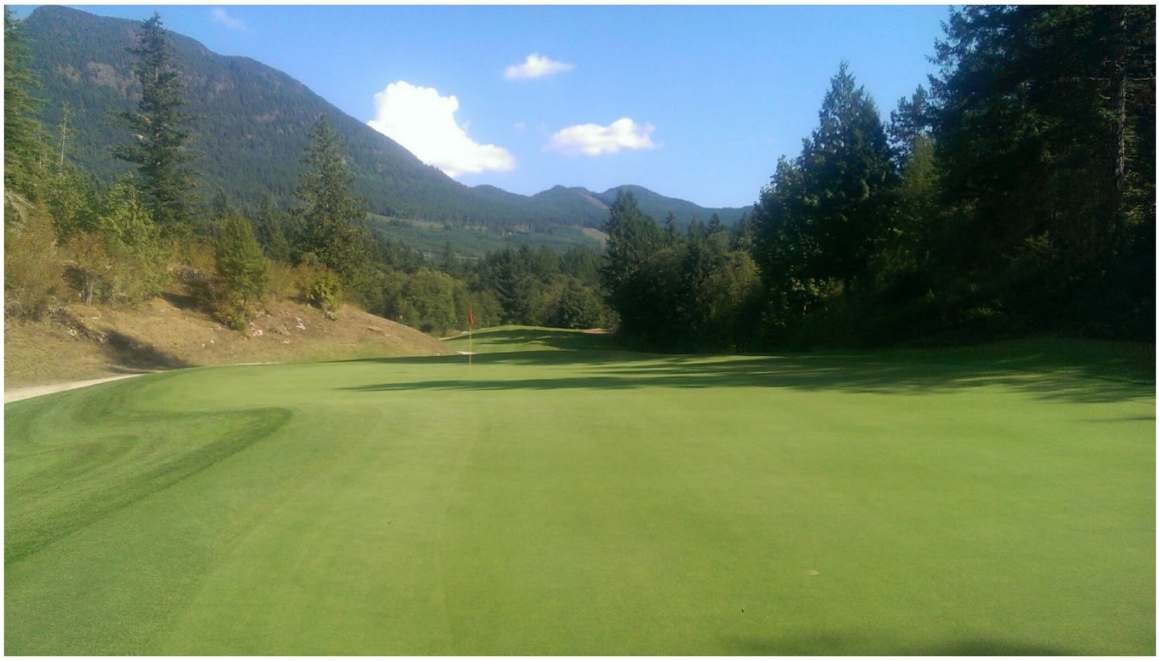
have some weeds, but use no herbicides. Some disease, but use few fungicides. I try and manage for a good playing surface with the lease possible inputs, especially chemicals. With this philosophy and management style I expect that eventually bentgrass will be the dominant turf on my course. It won't be pure. I will always have a lot of poa but I will be able to further reduce my inputs of water, fertilizer, and pesticides without fear of catastrophic green failure.



The bare minimum. Mow, roll, fertilize, water, solid tine cultivation. Not perfect but the price is right!

This is a work in progress and who knows? Maybe I'm completely out to lunch.

Posted by Jason Haines

Labels: Bentgrass, Disease Spread, fertilizer, Growth Potential, IPM, irrigation, minimalist, MLSN, Pesticides, pH, Poa annua, Sustainability, Water Use, weeds

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