Rx Fire as a Restoration Tool for Savanna Communities

Please see below for answers to questions posted in Q&A.

1. Yellow Oak is an old common name for what we now refer to as Chinkapin Oak. Would that have been a possible candidate for the "yellow oaks" in that transect?

JB Response: Mike Demchik suggested that this is possible. I am curious though, we have several 'black oaks' in Wisconsin that could be possible. Black oak *Quercus velutina* and Hill's Oak *Q. ellipsoidalis* are possible. Perhaps even red oak *Q. rubra*? I am curious which species you think that might be.

2. Can you describe what kinds of soils are found in these areas, both generally in the Driftless area and in the restoration projects?

JB Response: I am not a soils expert but there is a range of soils. The Wisconsin River Valley and some smaller river valleys have high sand components due to glacial outwash (Wisconsin River) or erosion of sandstone rock. Soils with varying degrees of clay occur in the upper parts of valleys where backwaters to glacial rivers occurred. Tops of ridges have soils of various thickness but are often loamy or silty soils, mostly due to loess. Slopes of these same ridges can be loamy, full of cobble, or sandy, depending upon the specific locations where you are. I realize that this doesn't narrow things down very much. The diversity of the driftless is, in part, related to this diversity of soild that we have.

BW Response: For central WI, it's primarily sand based. As discussed in the presentation, there is a lot of diversity from wetlands to trout streams. So, you also get some hydric soils as well.

3. Do KBB colonize restorations where lupine is being planted? How far from established KBB populations are we currently seeing KBB movement to new restorations? I've heard a few conflicting ideas (e.g. if you "build it they will come" vs. not worth the work because they are unlikely to find the new lupine).

JB Response: Brendan can answer this question better than I. Karner blue butterflies do inhabitat restoration areas but, to do so, they need large number of lupine for larvae and large numbers of other forbs for nectaring adults. I do not know how far adults can disperse.

BW Response: Yes, KBB's do colonize new restoration sites over time. Our program has been doing work in central WI since the late 1990's. The last couple of years we have contracted with WI DNR and UWSP to conduct surveys on our legacy projects, and surprisingly out of 38 sites we found KBB's on 31, in which didn't have KBB's before. This was based on our 2022 survey. As we continue this work, we try to connect past projects to current projects. Or connect to other non-profits, state, or federal land that has the KBB or potential to. This then supports the "build it they will come" idea.

4. One of the greatest challenges for private landowners who wish to utilize prescribed fire as a management tool is lack of personnel, IMO.

JB Response: Agreed. The Wisconsin Prescribed Fire Council is working hard to change this. Trainers are minting over 200 people/yr capable of staffing burn crews. We are not currently minting enough squad bosses or fire bosses each year, however. To ameliorate this circumstance, we are not only pursuing a certification program for professional fire

practitioners, but we are developing training materials and training opportunities to enable the people we seek to certify. Importantly, we are also promoting two tracks of certification – NWCG and Wisconsin Standard – the latter being focused solely on prescribed burning in the state, and therefore requiring less training to qualify as squad or burn boss.

BW response: Be creative; recruit your friends, family, students from college, fire departments, contractors, etc. It's just a matter of making connections to get fire on the ground.

5. With the target of 1 million acres to burn in WI

JB Response: Question is incomplete. Here is a guesstimated answer: This assessment comes from a fire needs assessment in Wisconsin, published by Tracy Hmielowski and co-authors (Hmielowski et al. 2016. Prioritizing land management efforts at a landscape scale: a case study using prescribed fire in Wisconsin. Ecological Adaptations 26:1018-1029.

6. If someone wants to start a restoration business that utilizes fire, what are the required certifications (e.g. FFT2, Burn Boss) that are needed in Wisconsin to be able to plan and execute Rx burns?

JB Response: The simple answer is that currently there are none. Within the next two years, no training will be required still, but our certification program will allow certified professional burners to more easily obtain prescribed fire insurance, have greater latitude in the conditions where they implement prescribed fire and have better access to training. Importantly, private landowners will be able to participate in prescribed for training but will NOT be required to have burn boss certification. The reason for this is simple – it is much easier to train a landowner how to burn on their own land than it is to burn any ecological area in the southern half of Wisconsin.

BW response: I second Jeb, you are required to get a DNR permit to be able to burn on private land. Unless it's after a certain time. A burn plan isn't required but recommended.

7. What are the land uses at this time? When is prescribed fire compatible with "working lands"?

JB Response: Prescribed fire can be readily applied to working lands. I burn on potato farms, with beef grazers and with corn growers. That said, we can do much more to access these lands. Most farms in Wisconsin still contain remnants that would benefit from prescribed burning.

8. How does the presence of oak wilt impact decisions about burning?

JB Response: Brendan can address more directly. For me, presence of oak wilt is only relevant where dead trees are positioned near breaks, and as such, creating greater risk for escaped fire or hazards from limbs breaking and falling on crews.

BW: I second Jeb's response.

9. How do you balance pesticide use and seeding? For example, we want to treat post-fire invasive regrowth while also seeding for natives. Are there best practices for this that decrease herbicide risks to newly planted seeds or is it simply a matter or avoiding heavily seeded areas?

JB Response: It is difficult to use broadcast herbicide in planted areas. Pulling or cutting can often help control the early flush of undesirable species – anything to keep them from going to seed. Once two or three years old, stubborn weeds (like knapweed) that cannot be eliminated by mowing, can be spot-treated with herbicide. Fire can also be used to synchronize biennials so that you can then mow them when flowering and that will often kill the plants.

BW response: We typically don't seed until we have the invasive species controlled. Then spot spray or mow, if needed after seeding. We really want to start with a clean slate before investing a lot of money in native prairie seed.