

Refugia

I've been thinking a lot about refugia. Maybe because it's spring and the [burn](#) season is upon us. Each year we tour our land and review our management strategy. Revisions are generally made because we can't outguess nature. As I work on these management plans, I realize I'm hearing fewer discussions today about refugia than 15 years ago.

Our native ecosystems are more than plants. In fact, plants make up a very small percentage of the biota found in prairies, savannas, woodlands, and wetlands. Of the biota, if we solely look at insects, we have names for about 20% but we do not know the biology for all those 20%! This lack of knowledge makes it imperative that we ensure a safe place (aka refugia) remains when planning all management activities.

Dictionary.com defines refugia as "an area where special environmental circumstances have enabled a species or a community of species to survive after extinction in surrounding areas." These surrounding areas of refugia are how insects repopulate the managed area.

When refugia is considered, it's normally been in the context of prescribed fire but we include it in other management activities, such as herbicide applications and mowing.

Planning refugia when mowing and [herbiciding](#) is easier, but planning for refugia when burning is more difficult. At Driftless Prairies, we divide our ecosystems by soil moisture and shade type in order to maintain similar refugia. We have full sun prairies, partial shade in the oak savanna, and a shady woodland area. Within these there are soil moisture levels that grade from dry to wet mesic. We work in sections so no more than half of an ecosystem is affected by the disturbance. When managing our plantings, we divide management areas within that particular planting. Several areas have

similar sun and soil moisture levels as other areas but they are different ages and in some cases supports different plants. We feel it's prudent to not assume these different areas support the same insects.

We live in the Anthropocene (a geologic time when humans are the principal force on climate and the environment) and are experiencing wildlife extinctions at a quickened pace. We can only count extinctions for those we know about, yet what about those unnamed, unidentified species. We don't know what we don't know.

We provide this native habitat for the wildlife, therefore we make land management decisions to protect them. Balancing management activities and refugia takes time and planning but we want both the habitat and the wildlife healthy and reproductive.

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These photos from Winona County, MN reflect the hard work of caring for our wildlife and ensuring there is a safe place for them to survive and repopulate the area. This burn break was painstakingly put in with a brushcutter and a backpack blower. Gabe Erickson took these drone photos.



Gabe Erickson

The patchiness of this burn is valuable to the wildlife as well.



Gabe Erickson

A great view of the steepness of this slope. The tan area is the unburned refugia while the patchy blackened area is where it was burned.



Gabe Erickson

The dedication of folks that walked up that steep slope with a brushcutter and backpack blower to create that burn line is to be applauded.