



# Driftless Prairies: Native Ecosystems

Search for:

- [Home](#)
  - [Our Journey](#)
  - [Citizen Science](#)
  - [Driftless Area History](#)
- [“50 Ways” to Manage](#)
- [Tools & Techniques](#)
- [Research and Science](#)
- [Bio Inventory](#)
- [Blog](#)
- [E-mail Us](#)

# Think Like a Seed

Our management plan is simple: remove the invasives and increase diversity. One way we increase diversity is by propagating plants and planting them into various areas. How many we plant out in a year varies. It depends on my success rate at getting the native seed to germinate and then how many plants survived the overwintering process. Every year is different.

Growing these plants has taught me a great deal about them. Not only about the individual plant but about how to think like a seed. Seeds have many ways to stimulate and delay germination. In the restoration world, we are amazed at how certain plants are abundant during certain years. If we are tracking the weather (temperature, rainfall, etc) we might find a few clues about why those plants are enjoying that particular year. It's not all weather related though. Anthropogenic reasons must be included especially knowing what type of disturbance might have occurred. At our place, storms also create disturbance when trees are toppled.

Understanding how to propagate requires an understanding of how the seeds germinate and a base concept of seed dormancy. Dormancy is how a seed protects itself from sprouting up at times when it isn't conducive to their continued existence, such as in the middle of a cold, snowy winter. Seeds are regulated by chemicals, hormones to be exact, that determine their dormancy requirements and their germination requirements. This physiological dormancy allows for flexibility, which is advantageous since nature is not predictable.

The first rule for germination is to create the environmental conditions required for the seed to germinate. Initially, I had to learn what it takes to penetrate the seed coat to get

moisture inside to the embryo; they must take up liquid faster than they lose it. This very basic rule is the most important. It is why the substrate that you put the seed into for germination is critical and it drives the pre-germination process, too, explaining why most native seeds require a cold, moist period of time rather than simply a cold one. There are a number of seeds that need more intensive procedures, such as alternating from warm to cold to warm with each temperature period requiring a certain number of days. Chemically altering the seed coat can be effective as well. I have successfully used Giberellin Acid (GA-3), a natural plant hormone, to induce germination. Not every seed responds to this though. Norman Deno's books are excellent references for this.

Just about every aspect the seed determines their germination requirements: small seeds, location of the seed on the plant, and time of seed maturation. The environment under which the plant grew will affect the seed: temperature, light, day length, drought, and soil nutrients. There are many variables that determine germination and dormancy. I think this is why I'm always surprised, amazed, awed when I've successfully gotten a seed to sprout!



From this...*Sanguinaria canadensis* (Bloodroot Seed)



to this...





Resulting in this. And the cycle starts over.

## Resources

Deno, Norman C. 1993. *Seed Germination Theory and Practice*. Pennsylvania: Norman C. Deno. This has a couple of supplements that update the info and add new species to the original publication.

Fenner, Michael and Ken Thompson. 2005. *The Ecology of Seeds*. Cambridge UK: The Press Syndicate of the University of Cambridge.

Loewer, Peter. 1995. *Seeds: The Definitive Guide to Growing, History, and Lore*. Portland, OR: Timber Press.

Young, James A. and Cheryl G. Young. 1968. *Collecting, Processing, and Germinating Seeds of Wildland Plants*. Portland, OR: Timber Press.

# Subscribe to Blog via Email

Enter your email address to subscribe to this blog and receive notifications of new posts by email.

Email Address

Subscribe

Join 217 other subscribers

- [Garlic Mustard \(\*Alliaria petiolata\*\)](#)
- [Poison Ivy – Live and Let Live](#)
- [Aquatic Insects as Indicators of Water Quality](#)
- [Confluence, our Water Ways in art](#)
- [Gypsy Moth Treatment](#)
  
- [Birds](#)
- [Conservation](#)
- [Fungi](#)
- [General Info](#)
- [Groundwater](#)
- [Insects](#)
- [Invasives](#)
- [Mammal](#)
- [Plants](#)
- [Prairies and Woods](#)
- [Reptiles & Amphibians](#)
- [Soil](#)
- [Wetlands and Streambanks](#)

Driftless Prairies copyright 2024