The Core of the Onion
Cleansing the Weed Bank

If I do clear all the weeds where they have germinated, the seed still remains viable where they have not. For example, when one cuts down a tree, the weeds suppressed by the duff are then dosed with sun and warmth. The duff decays, leaving nitrate behind and up they come! Yep, it's broom, despite 25 years of control in this spot and a burn. Waiting it out is not a long term option here.

The same thing happened here where catch-weed bedstraw *(Galium aparine)* responded to a tree removal. Typically this was close to the driveway where bedstraw first showed up. Broom and several other weeds are in here too.

Feed-forward is a type of control architecture that applies prospective knowledge of how a system will respond to an input as a way to maintain system stability. One applies the input to correct the behavior *before* the system drifts beyond control limits to a catastrophic failure. Only people do that. "Nature" does not "care" what it becomes or what becomes of it.

I have reached the point that I can usually predict what will come up in a particular area on our property if I initiate a disturbance, such as thinning trees or digging out the silt in a channel. What you see here is hedge parsley *(Torilis arvensis*), which was both as predicted and very easy to deal with. Yet there is a reason this kind of knowledge may yet become unnecessary, and a hopeful reason at that, but before we get to that, we need one more example to show you how hard the hand work we did can be.

This is mouse eared chickweed *(Cerastium glomeratum)*. These weeds came up where I removed some bag-seed fescue I'd planted years before. We pulled literally millions of these, this small, by hand (by "we" I am including my two daughters here, who developed remarkable patience and tenacity in doing it). I am certain you are wondering why we bothered. One could easily overwhelm them with other larger plants, declare victory, and no one would be the wiser, here. Elsewhere it can grow to 24" tall and does a very good job of suppressing native annual groundcovers because it germinates early. This was the hard part, by hand. There were millions of them.

Yet if you want native forbs, until you have a more efficient process, this is what you do: pull them, one at a time with the faith that you might learn something once they are gone. On the right you see the native that came in on this spot, slender wooly heads (*Psilocarphus tenellis*). It is said in the botanical literature, that this plant prefers muddy spots. That's because that is the only place botanists find them anymore. This is a hot rocky slope. Since we got rid of most of the Cerastium, the wooly heads are spreading.

And spreading.

And here they are, moving into a grassland, albeit on very poor soil. They got bigger later in the year, starting to form somewhat of a reflective and moisture retaining surface. My purpose in bringing this up is that we don't know what role this plant plays in this system because it has been suppressed by weeds for so long. Like many native plants, *Psilocarphus* germinates rather late, making it easy for weeds to displace from places in which it is less competitive. The Spanish grazed the State widely for over 100 years before Americans arrived in numbers, plenty of time for the landscape to change unrecognizably. We do not yet know what it does.

Nearby, we have another little plantlet starting to make a resurgence. This is “dew cup” or “lady’s mantle” *(Aphanes occidentalis)*. The first individual appeared here in 2006 and it took quite a while for its presence to become noticeable.

And here is dew cup taking it's place among lotuses and clovers in a stand of purple needle grass! Unlike slender wooly heads (which are of the Everlasting family), dew cup is a rose by another name. As a member of the rose family, it may be a symbiote of the actinomyceteFrankiaspp.! In other words, it might be a nitrogen fixer. Nobody knows. Next year, I'll pull some and find out.

So, what did I do to stimulate that weed bank in a controlled fashion so that I can remove them? I pile brush or tree tops and burn them. Just as the fire gets to coals, I spread them with a shovel before the soil gets too hot, effectively spreading charcoal. Do this a few times **weeding carefully every time** in between and voila! Native germination so good that the weeds are easy to pick out. Then comes the hard part, keeping myself from pretending that I have it licked, by hand.