The Right Seed in the Right Place, at the Right Time Might be a Nursery.

My intention is to persuade land managers to recognize when the cost of installing plants is a wiser course in the Inter-mountain region than using ineffective methods of sowing seed afield simply to meet budget constraints.

Personally observed examples:

- Drilling a seed mix into piles of shale.
- Drilling a seed mix into soil not suitable for planting.
- Sowing seed requiring narrow and specific conditions to germinate in areas lacking those specific conditions.

Two personal encounters with an Inter-mountain state’s natural resource officials, coupled with a personal review of over 200 proposed or ongoing restoration projects in their state, indicate that informally, if not in fact, their state’s policy is to solely utilize seed in land restoration. In my opinion, their budget-driven actions ignore critically fundamental and obvious restoration goals:

- Successful plant establishment
- Maintaining biodiversity and biological functionality
- Maintaining the character of the region.

In short, currently prevailing restoration activities in the Inter-mountain region fail at restoring western landscapes, and therefore are not cost effective.

A thorough search of readily available information resources yielded no organized data supporting my assertion that installing plants in the Inter-mountain region is a more cost effective restoration strategy. Because the region contains threatened species and environments, and is severely stressed by industry, livestock grazing, people, invasive species, climate change, drought, and intemperate usage of water, it is surprising to me that
funds have not been allocated to study and ultimately determine successful restoration strategies for the region.

It is obvious to even the casual observer that sowing seed using conventional methods

- limits where restoration occurs,
- limits species that are to be restored
- and, thereby, eliminates whole genera key to a region

Therefore, methods employing seed predominantly in restoration does not support the stated goals of The National Seed Strategy: “The right seed, in the right place, at the right time.”

To be fair, the chief reason seed is employed cannot be ignored. The ability to cover large areas in need of restoration with seed does fit limited budgets - but does not make it cost-effective restoration. It does allow for needed restoration activities to occur inside annual budgets.

So, we must ask is the right seed in the right place at the right time attainable in light of perpetually tight budgets in the foreseeable future?

I offer that sowing seed in a nursery and then employing the resultant plants in restoration more commonly will more closely fulfill the goals of the National Seed Strategy.

- Planting seed actualized as a plant, one at a time, allows for specifying exactly the type of conditions that should exist in places to be restored - species by species, site by site.
- Planting sites can be modified hole-by-hole with catchment basins, mycorrhizae, bio-char, and other tactics improving establishment.
- Plants afford a competitive edge on weed seeds in the seed bank, which is - in a way - creating our own right time to plant that will always be superior to the calendar under which seeds are sown at a site.
the single greatest strength in utilizing live plants: employing site-sourced genetics - or genetics as appropriately sourced as is obtainable – is possible - today - on nearly any site found anywhere in the western United States.

A sagebrush example:

One PLS pound of sagebrush seed drilled at 2 ounces per acre covers 8 acres - distributing 250,000 seeds per acre, nearly six seeds per foot - wherever a tractor and drill can be driven.

One PLS pound of seed sown in a greenhouse yields 500,000 seedlings – making it possible to plant 1.4 plants per square foot anywhere possible on 8 acres.

If planted 10 feet on center, or 435 seedlings per acre, 1,100 acres can be served with one pound of seed.

A tractor pulling a standard rangeland drill can plant 25-30 acres in an 8-hour day and expend 3 to 4 pounds of seed.

Six men with 2 augurs can plant 3000 plants or 6.75 acres in a day, and expend 3 or 4 grams of seed.

Which method is most cost effective?

The answer depends on our goals:

- place the right genetics in the right place at the right time
- maximize the use of limited genetics from on or near a site
- employ restoration methods appropriate to establishing the plants found on a site.

If those are the goals as stated, then seed should be sent to a nursery first before planting plants at a site.

If the goal is to cover up some ground with a limited range of plants using indiscriminate genetics that germinate well in-situ, then buy a bag of seed.