

PULLING

Pulling refers to using your hands or simple implements to uproot plants.

These weed species are good candidates for pulling:

- Blue mustard
- Common mullein
- Dalmatian toadflax
- Flixweed
- Green foxtail
- Jointed goatgrass
- Musk thistle
- Oxeye daisy
- Puncture vine
- Russian thistle
- Plumeless thistle
- Scotch thistle
- Bull thistle
- Myrtle spurge



Pulling works best for ...

- Small infestations of weeds that can be pulled one patch at a time.
- Annual and biennial plants (although seed banks will remain for some time).
- Shallow-rooted plant species that do not resprout from any residual roots.
- Plants growing on sandy or gravelly soils. If possible, concentrate pulling when the soil is moist and soft; for example, after a heavy, soaking rain.
- Situations where chemicals, motorized equipment or livestock cannot be used or are undesirable.
- Eliminating or reducing seed production in small infestations.



Pulling has limitations such as...

- Pulling generally does not remove the entire weed root system except under the most favorable circumstances. Thus, pulling is often ineffective for killing rhizomatous weed species such as Canada thistle, field bindweed, Russian knapweed, leafy spurge, or yellow toadflax even if used in conjunction with other techniques. However, if your goal is reducing seed production, pulling may be very effective. If pulled weeds contain seeds, they should be removed from the site and burned or disposed of in a landfill. Don't compost this material!
- Pulling will not reduce a soil seed bank, although it can keep a seed bank in the soil from increasing.
- It is not cost effective for large infestations, due to the labor involved. Pulling may not be cost-effective for small infestations, either, unless plants are easy to pull and a volunteer work force is available.

Pitfalls of pulling include:

- Volunteer burnout from endless hours of boring work.
- Lack of psychological reward if the results of pulling are not apparent.
- Soil disturbance which stimulates germination of weed seeds in the soil, as has been noted with diffuse knapweed.
- Temporarily creating bare soil and providing more sites for weed seed germination and establishment.
- Some weeds produce chemicals that can cause allergic reactions or dermatitis in some people. Always wear work gloves and a long-sleeved shirt for pulling plants. Wash your hands with soap and water afterwards.

Cost of pulling:

- Labor is the primary cost associated with pulling. Labor costs vary widely depending on local conditions. A recent study in Montana found that hand pulling alone was effective at reducing flower production of spotted knapweed, but that it was 70-500 times more expensive per acre than the other treatments tested (Heap 1999).
- Disposal of flowering or post-flowering plants.