



Preparing A New Meadow for Native Plants

This guide includes information on:

- Smothering
- Sheet Mulching
- Timed Smothering
- Solarization
- Hand/Mechanical Removal



Why is site prep important?

Good site preparation is the key to long-term success!

A poorly prepared site can limit success because of recurring weeds interfering with native plantings.



What site prep is best for me?

Your site prep approach will depend on many different factors, like target species, soil composition, location, moisture, light, and more. Taking the time to understand your site will inform your decision on what options are most appropriate.



How long will it take?

Some forms of site preparation provide immediate gratification, while others are slower and require more long-term planning. Factors like persistent invasive species and budget should be considered

Smothering

Smothering is a passive method of killing vegetation by restricting light. Smothering with plastic (see sheet mulching on page 3):

- 1. Mow the lawn or non-native plants as low as possible.**
- 2. Lay down black plastic (secure in place) or pond liner**
- 3. Leave down spring through summer, or longer.**
- 4. Lift plastic in early fall to reveal dead vegetation.**
- 5. If you still see non-native plants present, manually remove them or smother longer.**
- 6. After plastic is removed, cover the area with up to 3-6 inches of weed-free soil/or highly degraded mulch.**
- 7. Sow seed (if clean soil) or plant from pot, being careful not to expose weedy soil below.**



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Sheet Mulching

Sheet-mulching refers to using organic matter (mulch) and cardboard (sheet) in layers to smother vegetation. Sheet-mulching can be very effective over smaller areas and can result in a weed-free surface in a single season.



1. Mow the lawn or non-native plants as low as possible

You can also consider smothering ahead (page 2) and then sheet-mulching to ensure a weed-free barrier ahead of seeding or planting

2. Layer cardboard

Begin by laying down 1-3 layers of cardboard, depending on the type of vegetation being smothered. Overlap cardboard to prevent gaps. Large boxes from bike stores and appliance centres are useful (remove tape and staples)

2. Add a thick layer of mulch

We suggest 3"-6" inches of organic matter like manure, degraded leaf mulch or weed-free soil. The cardboard and mulch smothers the vegetation below and creates a weed-free barrier. The cardboard will break down into the soil over time.

4. Sow and/or Plant

You can sow seeds directly onto the top surface if you have topped with soil (and it is the right time of year). If you choose to plant through the cardboard, moisten the cardboard ahead of planting to make it easier to puncture or plant in the rainy season. Use a sharp tool like a hori-hori knife to cut through the cardboard to plant. Make the smallest holes possible to prevent contaminating your clean surface soils with the weedy soil below. When combining planting with seeding, make sure to plant first so that the seeds are not disrupted.

Timed Smothering

Timed/temporary smothering is a technique that can be effective in reducing the cover of **annual plants**. Temporary smothering takes place after fall rains have triggered germination of non-native annuals. Once the undesirable plants have sprouted, you cover them until the new sprouts are dead. They will not re-sprout because they are annuals. Once the sprouts have died, the smothering material is removed. Perennial native plants that persist through underground structures (geophytes), such as the bulbs of Camas, Chocolate Lily, and Shootingstar will respond to the release from competition. **WARNING:** Timed smothering can harm native annuals and other native plants with a fall growing season. Always carefully observe before taking any site preparation actions.

1. **Monitor vegetation:** Begin watching in late summer, so that you will notice when annuals germinate and if there are native fall-germinating species to avoid.
2. **Cover target area with a barrier to light,** such as landscape cloth, black poly, plywood, pond liner, or a deep layer of mulch.
3. **The barrier is left in place for six weeks or until the plants are killed.**
4. **The barrier is then removed, revealing areas of bare ground and releasing suppressed native geophytes.**
5. **Native seeds and plants can be added post-treatment.**

Photos Below: Common Camas released from non-native annual grasses at Playfair Park, Saanich BC. This technique was refined by volunteer Colleen O'Brien.



Solarization

Solarization is a technique that uses clear plastic (e.g 6 Mil poly) to create a greenhouse effect that kills the seed bank in the upper layers of soil through heat. This results in fewer competitive non-native seedlings in exposed soil and eliminates the need to top with clean soil. The **seed bank** is the storage of dormant seeds in the soil. Both native and non-native seeds can be present.

For effective solarization, consider killing the aboveground vegetation ahead (see smothering on page 2).

1. Water soil
2. Place clear plastic poly down on bare soil.
3. Pull tight and seal edges (creates humidity).
4. Carefully remove plastic for reuse.
5. Seed; minimize all soil disturbance (do not add pots).

Best results are achieved by beginning at the onset of the dry season and removing plastic at the end of August. Please note that certain species with very tough seed coats, especially plants in Fabaceae (Pea family), may not be affected by the heat below the plastic. Bottom Left: Large Great Camas bulbs being deeply planted before solarization



Hand & Mechanical Removal

Over small areas, hand pulling and digging can be very effective! If the area is primarily sod, a sod cutter can save time and reduce labour. Assessing invasive non-native plant removal techniques before starting can save time and frustration.



1. Hand dig or rent sod cutter.

It's important not to bite off more than you can chew. Sometimes working systematically, and starting with small areas allows you to build on your successes and learn from your mistakes.

2. Top with weed-free soil or mulch

Starting with weed-free soil is essential. Sometimes saving costs on less desirable soil will result in you having to start over again.

3. Plant or seed

The fun part! Always chose plants that make sense for the spot. Have fun with the experience. You can always move, add, and remove plants. Set time aside regularly for weeding and monitoring. Adaptive managements is key to your success!

