

Rough Mounding - rebuilding habitats in drastically disturbed sites

Ecological damage can have a sort of cascading effect - for example, clearcut logging on a slope can remove the trees and brush which were holding the soil in place, opening the way for erosion which washes away topsoil, creating a barren hillside where the forest is not able to re-establish itself, or can't do so anywhere nearly as quickly as it would have otherwise. Similarly, human activities such as mining or topsoil extraction can directly change a healthy habitat into a barren moonscape which will have a hard time recovering, especially in human timescales.

If your story features places like that, and people working to help the native species get re-established, the following resources may be useful to you.

Rough Mounding

Rough mounding is a process of digging holes and building up hummocks/mounds from the soil onsite to create a uneven landscape sort of reminiscent of egg crate foam.





This is done for several reasons:

- It slows water movement, and reduces erosion
- It improves water retention on the slope for the plants (this seems to have some functional similarity to [the construction of swales and berms](#) though the shape of the contouring is different)
- It creates a diverse micro-topography that results in more microsites for a wide variety of plants to grow. Some do well on the tops of hummocks, while the more shade-friendly and thirstier species do well in the hollows.
- It breaks up compacted earth and makes it easier for plants to take root

How it's done

“Rough and loose surface configurations can be achieved by using an excavator to open holes on the slope, dumping the material that is generated from the holes in mounds between the holes. The excavator takes a large bucket full of soil and places it to the left of the hole that was just opened, half a bucket width from the hole so it is half in and half out of the hole. A second hole is then excavated half a bucket width to the right of the first hole. Material from this hole is then placed between the first and second holes. A third hole is now opened half a bucket width to the right of the second hole, with the excavated soil placed between the second and third holes. Care should be taken when excavating the holes to shatter the material between the holes as the hole is dug. The process of making holes and dumping soil is continued until the reasonable operating swing of the excavator is reached. The excavator then backs up the width of a hole and repeats this process, being sure to line up the holes in the new row with the space between the holes (mounds) on the previous row.”

Resources

This short PDF on the method by David Polster, the person who developed the process is very approachable:

<https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:6135d26e-13c8-3bc4-b8c4-daf0f96d8021>

Here's a paper by him

<https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:f5809c2f-419d-3cb3-a14d-d14e7602f4a3>

And another from 2012 <https://open.library.ubc.ca/soa/cIRcle/collections/59367/items/1.0042634>

Theme with other restoration practices

Rough mounding is sort of the opposite of modern landscaping practices which often focus on re-contouring the land to make it more even and regular (for aesthetic or convenience reasons) and on reducing wet areas by channeling any surface water quickly away or even into drains. Ironically this can lead to both erosion *and* worsening drought conditions as less water is retained by the site.

To some extent rough mounding is part of a wider rejection of modern human landscapes. People, at least in the places I've lived, have a tendency to "tidy up" the land around them, if only to make it easier to navigate. They clear away plants and level the ground, or at least smooth it out where they can't remove the slopes altogether. They fill in wetlands and straighten rivers, and add berms or levees to flood plains to keep the water from spreading above its lower banks. Especially in more developed areas, they build complex infrastructure to channel rainwater out of the city and into the ocean as quickly as possible, something that has lead to widespread water shortages. In fact, as we noted in the resource on Beaver Dam Analogs, this collective practice has lead to more severe droughts and the very ground of the continent has dried out significantly since European colonization.

Practices like sponge cities, beaver dam analogs, and rough mounding all focus on slowing the movement of water and catching it in place, allowing it to permeate the ground again. In many ways, this represents an attempt to more closely mimic the way this land and it's habitats were shaped and saturated for thousands of years. Because this is the habitat most native species were evolved to find niches in, it's no surprise that they flourish when we nudge things back in this direction.

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