Rough Mounding - rebuilding habitats in drastically disturbed sites

Ecological damage can have a sort of cascading effect - for example, clearcut logging can remove trees and brush which was holding the soil in place, opening the way for erosion which washes away topsoil until 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 divers 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 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

This is sort of the opposite of modern landscaping which is often focused on re-contouring the land to

make it more even and regular (or aestetic 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.