

Fundamental Site Examination

This section will determine what decisions you need to make in planting

your Miyawaki method/adapted Pocket forest? Akira Miyawaki, and Shubhendu Sharma, are some of the world's experts on this topic. Yet they state in all their information, that a backhoe is required to mix your soil with your added composted manure, before planting day. We understand that this may be true when your site's soil is quite compacted or degraded. However we believe, that on many potential sites, soil can be regenerated, and successfully forested without ever using heavy equipment. Email PocketForestsOregon.com from our website contact address, if you need help with this decision?

When consulting an OSU urban forester on this subject, the forester, and others as well, have made it clear that there are no two potential forest sites that are exactly alike. So it is OK to be comfortable with that understanding. There is no single right answer to every decision. So doing the best job you can, within your limits is the most important idea.

- **Check a recent land survey of your site for underground pipes, drains, sewer pipes and wires, or other impediments for planting. If not available, call 811 to get a 'locate' done.**
- **Assess clearances for property lines, and sidewalks, driveways, and structures. Provide at least a 20 ft distance from buildings for large canopy like trees.**
- **Check for overhead wires, and ask your city planing office about future projected plans: for underground pipes, or overhead wires, or other planned future construction near your site.**
- Try to find out the history of the land. This may have great significance?
- Is there any presence of standing water, or any existing trees that will can be left in place?
- How much sun exposure will be available at the site throughout the growing season, and in the differing seasons?
- Look for the presence of invasive species?

Soil Depth and Compaction Testing (complete when soil is moist)

1. You can buy a 4 foot long manual probe for about \$45 online. For a simpler test, it has been suggested that you could also use a 12 in screwdriver, checking only the top layer of soil. However this gives you less information.
2. If you like projects, you can also make your own probe out of a 3/8 inch steel rod.
3. Push the soil depth tool you have decided to use down into the ground. Use the weight of your body and arms, until you have found stiff resistance. Mark and measure the depth after each test, and record the result at different places on the site.
4. Do this all over your intended forest site. A good result is 20 inches or more of soil penetration. A poor result is under 10 inches. Firm resistance represents the limit that a root can force itself into the soil, and that water can move through.
5. If you are meeting firm resistance in the top layer of your soil with a screwdriver, you may want to dig a small 2 foot deep hole to see what your soil looks like. Contact us on our website at SustainableEconomiesNW.com if you have any further questions?
6. Plot all your results out on paper inside a book, which you are keeping records in, about your site. This could be your entire site plan book. You can use this book for marking your coordinates, proposed pathways, costs of materials, etc.. And eventually you could use this book to record where all the native trees and plants are located in your forest.

Minimal Fundamental Soil Testing

What we learn from even these limited selection of tests is an understanding of the land itself. Soil that is called 'dirt' is devoid of life inside it. Compost of some kind provides the most life, whether it be composted leaves as Basil Camu uses in his text, or composted manure as used in the Miyawaki Method. If your soil type is predominantly sand, or clay, you might have issues with water retention, which will require you to choose a different selection of native plants.

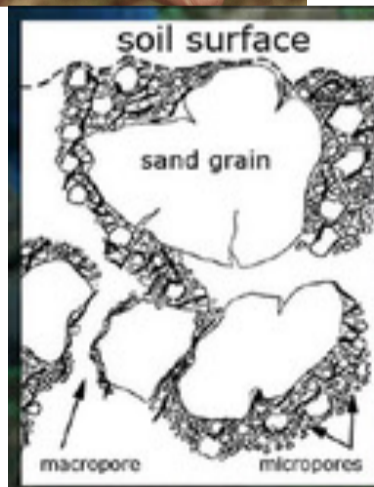
Soil texture

Take all your samples of soil that you want to test, from right below the top layer (or sod layer), and 12 inches below the top layer. If you have any areas of concern from the soil penetration tests, or have some standing water, you may want to collect some extra soil, so that you can do some added tests from different areas.

Most communities in Oregon have soil texture maps, and these can be located online. You can see Salem's ([Here](#)). You can Test for it yourself using the mason jar test, instructions ([Here](#)) You can estimate your soil type manually with instructions. ([Here](#))

We use some soil samples for the 'look, feel, and smell tests'. You will learn quite a bit of what you need to know about the health of your soil from these tests.

- Smell it. A soil that is fertile with ample fungi, will have a sweet earthy smell, while a soil with too many bacteria will have a chemical odor.
- As you dig out your sample, look for worms, insects, and signs of fungal networks or plant roots. Healthy soil will have more signs of life in it.
- Judge the color of the soil. Darker and richer colors indicate higher carbon content in your soil.
- Look for signs of soil aggregates, which are the opposite of mud or dust. Look for kernels of soil, and holes where worms have passed. Note roots, and the wispy fungal mycelia. This indicates high carbon content, and specifically higher living content of fungi.
- Moisten the soil if it is dry, but not soaking wet. Then observe if the soil will form a ball when you squeeze it in your hands. Does the soil stick to itself?
- Rub the soil between your fingers to observe whether it feels like sand, or slippery like clay.
- Press your thumb into the ball and see if it will crumble like sand, or if it acts like sticky clay



High residue and cover crops contribute organic matter to soil, while no-till management helps protect organic matter and allow accumulation. Organic matter provides food for earthworms and other soil biota. All play a role in developing or protecting soil structure and macropores to help soil function at a high level. Inset shows relationship of macro- and micropores to soil aggregates.