

Brian talked about the tree canopy, and lan talked about soils, so I am going to take us to the zones in between, to the layers of native plants between soil and canopy that make up a healthy forest community, and how we can incorporate them into our urban and suburban landscapes.

Why native plants?

- Native plants support the wildlife we need and love
- Humans thrive with other life around us
- 80% of landmass modified by human use, so nature actually does need individual landowners to chip in.
- Native plants are resilient
- Natives plants are beautiful





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So first I wanted to start with why care about native plants. Simply put, native plants form the backbone of the living systems that make all life possible, but they also have a lot of specific benefits that we can delve into. Humans thrive when we have a sense of thriving life around us - bees buzzing, birds singing, tree frogs hopping. Also, so much land mass is devoted to housing or agriculture, we can't just assume that nature is somewhere out 'there' doing just fine. In fact, when we invite nature into our yards and urban areas we can actually make a concrete difference and provide much needed habitat. It also just makes sense. Native plants are resilient to local stressors - our wet winters, dry summers, and specific competition and pathogens they encounter. And lastly, native plants are very beautiful, and by using them we can tap into that potential and can bring the beauty of the wilds into our everyday experience.

How? Step 1: Find your plant community

- Identify your setting
- Look for reference landscapes in nearby nature
- Help your landscape be the most beautiful version of itself



So now you might say yes, I'm convinced, I want to play native plants. It can be intimidating knowing where to start. If you look at an A_Z list of native plants, even if its broken out by sun/shade, size of plant, etc., that doesn't really tell you what is going to look good together or grow well together. The key is to forget for a moment about what specific plants you want, and instead take a step back and notice what your landscape is trying to be, and learn about the plant communities that would naturally grow there. Are you surrounded by floodplain forests with lots of Oregon ash trees? Are there rocky outcropping? Standing water in winter? Oaks? Once you have a sense of what nature is trying to do around you, look for local reference landscapes to give you inspiration about how your landscape could look, in its most beautiful form.

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		Fraxines latifolia	Oregon Ash	3		Spiraea douglasii	Douglas' Spirea
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If you like having books to help, I want to point out that the Portland Plant list, which is a pdf available online, has a whole section devoted to local plant communities. Here's an example for floodplain forests - it gives a brief description of this type of plant community, and lists the most common and also less common plants you might find in it. While this won't do the design for you, it is a great starting point for narrowing your focus, and getting to a subset of plants that are suited to your location and like to grow together.



The second trick to designing with native plants is to match the patterns that you see in a landscape to the specific needs of the human occupants of a space. Do you need a privacy barrier? How about a hedgerow with some of our tall and vigorous native shrubs? Do you have a shady corner? Let's look to a woodland understory plant community.

How? Step 2: Match Habitat Types to design needs

- Meadows for open areas, rock gardens for slopes
- Wetlands for rain gardens



If you have a sunny area where you want flowers, and want to keep the plant height low, rocky slopes or meadows can be a good analogue. If you have a wet area, you can use wetland plants. Of course there are lots of types of wetlands, and depending on your needs there are lots of different ways it can look and still reference some type of natural plant community.

Planting in a Changing Climate - What to expect?

- Winter-wet, summer-dry pattern will continue
- Summers will be hotter. More heat = more evaporative stress on plants and soils = more drought
- Fire season longer- more red flag days during shoulder seasons
- When it rains, it may rain MORE. Increase of atmospheric rivers, Pineapple Express storms
- May be longer between periods of rain
- RANDOM AND ERRATIC

A pressing question on many people's minds, is how does climate change play into our planting decisions? Are native plants still a good choice? To address that question, I want to start with a rundown of what changes are looking like and are expected for our part of Oregon in particular. The easiest way to think about it is an intensification on all axis of all of the patterns we are already used to, plus making everything more random and erratic. Our winter-wet and summer-dry pattern will continue. Summers will be hotter, and this increased heat alone means more drought conditions for our plants, as evaporative stress is greater. Fire seasons are getting longer and more intense, which is an important safety consideration for anyone living near an urban wildland interface. When it does rain, more of that water will arrive via atmospheric rivers. In fact we've been seeing a lot of that in the past few weeks. While rain is getting more intense, there may be longer periods of time between rain. This puts stress on plants that would prefer to get their water in a slow steady dose, not all at once. In general, you have probably also noticed the weather being more erratic. So it might quickly shift from warm to cold and back to warm again, more than it used to. As you can imagine, that is also stressful to plants - its stressful to people after all



Planting in a Changing Climate - What to expect? Winter cold along with ice storms continue to be a factor in our region throughout this century In 2023, this area was reclassified to USDA Zone 9 (instead of 8b) Many Zone 9 plants died during the January 2024 ice storm I recommend Zone 7 if you want to be sure

And then there is the question of cold. Yes, global temperatures are rising, including winter temperatures, but there is still a LOT of cold in the world. In fact, one effect of climate change is that the polar vortex does not always stay put over the north pole like we would like it to. Because of rising temperatures, in 2023, this area was reclassified to USDA Zone 9, instead of 8b. That represents a 5 degree increase in average winter lows. However, lots of zone 9 plants, such as hebes and new zealand flax, eucalyptus, some rosemary, died during the ice storm last January. My observation was that plants that are listed as hardy to Zone 7 or lower did just fine, and personally I would recommend aiming for that.

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Resilient Plant Choices

- 1. Our native plants are already really tough
- 2. Mosaic of regional plant communities
 - a. Meadow plants adapted to sun, Oregon white oak communities
 - b. Rocky bluffs Willamette narrows, Elk Rock Island, Camassia
- Setting plants up for success seed-grown stock. Planting time, establishment watering, soil health
- 4. Microclimate and site context still matters







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So now, how do we respond to all these climate stresses in our plant choices? The first thing is to look to and respect all the toughness and resiliency that already exists within our mosaic of native plant communities. First off, native plants are really tough. In the heat dome of 2021, I felt worried that all the plants were going to die - and they didn't. This makes sense, considering that our plants have evolved over tens of thousands of years of changing conditions in this very region. Second, think about the mosaic of plant communities that already exists in our region, and how pulling from those communities can build a plant palette ready for tough conditions of heat and drought. Think about Oregon white oak communities, or the rocky bluffs of the Willamette narrows, Elk Rock Island, or Camassia natural area. Third - natural resource professionals are really focusing on how to set our plants up for success, and give them a chance to adapt and thrive to changing conditions. If you can, choose plants that were grown from seed, instead of from cuttings. This means there will be more genetic diversity in the plants you are planting, and a greater chance that at least some of the plants will be suited to new challenges. Prepare your site and soil carefully, don't abuse or neglect your plants before they get planted. Think about watering for establishment, be more open to watering than you might have been before. Think about what time of year you plant. 4 microclimate and site context still matter. A tree such as the western red cedar is really struggling through our region, but if you have a site that is still really good for western red cedar, and if you have the attention and resources to water it, it might be worth planting that tree so that we don't lose it altogether.



One question that I get a lot as a designer is 'what about assisted migration?', and 'should we be using native plants from other regions?' This is a complicated topic. In urban gardens, there certainly can be benefits to using plants from nearby regions. Plants like manzanita or ceanothus, that are very often selected from wild California species, often do really well in this area. They are drought tolerant and beautiful and probably have more habitat benefits than ornamental plants from further distances. They are close cousins to native Oregon plants, and can be well suited to urban conditions with reflected heat. However, in natural areas the idea of assisted migration needs to be approached with a lot of caution, and on a species by species basis. Many natural resource professionals are focusing on a form of assisted migration called 'population migration', which is focused on helping the gene flow within one species, for example taking seeds from a more southern population of bigleaf maple and growing those plants out in a more northern forest. Even within these trials, it is not yet clear that plants from other locations necessarily do better than local plants, and some studies have shown the opposite.

Additionally, many of our native plants, especially trees and shrubs, already have really big ranges that that demonstrate the variety of conditions our native species can be okay with. So if your main concern is maintaining healthy local plant populations, our native plants might be already up to the task. Here is the same Oregon white oak map that Brian showed earlier, and also a range map of Douglas-fir. Which brings me to one last point, which is that climate change is more complicated than a simple northward march of climate zones. Our plants need to be able to withstand heat, drought, wet, cold, and overall intense conditions. This is why some researchers are looking further inland, to Eastern Oregon and Idaho, for cues as to how our plant communities might evolve.

Thanks!