

Growing Wild Plants

The Forest is Dying.

In fact,

It is increasingly difficult to see the forest,

For all of the dying trees.

I stand among them,

Gaze up into them,

And ponder their fate.

A still familiar but somehow newly fragile

Icon of the Pacific Northwest.

Maybe someday they'll stand only as images,

The Cedars of the Pacific Northwest,

Like the Cedars of Lebanon.

The salmon of the Pacific Northwest,

Like the Salmon of the Thames.

The Forest is Dying.

The Forest is Alive.

This is the nature of the forest,

And the wetland, and the prairie, and any other wild ecosystem.

They transcend life

And death,

Even in death they cradle life.

If I look into the forest from one point of view,
I see the plants that did not survive
The summer's drought or the winter's storm.
On closer inspection,
The stubborn ones appear.
The Western Hemlock with just enough needles
To try again next year.
The ancient Red Huckleberry with only
A mantle of delicate green
Held high in the graying skeleton
Of a once vigorous giant.
It is easy to weep
For the death of the old world,
While waiting for the new world to arrive.

Longer observation reveals a lean in the trees.
Wind— Some trees blow down in the wind,
Some have their crowns taken,
But many more simply lean away from the wind.
Sometimes gradually over time, and
Sometimes more abruptly.
And there they stand leaning
There is nothing new about this of course.
You can see the evidence of these events,
And even estimate when they occurred,
In the wiggles and wows of the trunks,
And in numerous leaders replacing
A singular broken tree top.

I live in a forest that seems very old sometimes,
Obscure beneath the living plants and trees
Are massive stumps,
Relics of a world nearly forgotten.
A world that seemed so much closer
Just a couple of decades ago.

This forest is remarkable not for its dominant trees,
Which tower skyward, limbless and slender.
Lichen and moss green flecks against their grey skin.
But for the relatively undisturbed community of plants
That live for now in mottled light beneath them.
Pacific yew and dogwood and hazelnut,
Saskatoon and oceanspray and Osoberry,
A stand of bitter cherry on the sunny side,
Alder filling in a disturbance,
Consuming the light and
Replacing the lost canopy.
Big leaf maple, lanky and sometimes lateral,
Comfortably adapted to life in the shade.

But, these are only the most conspicuous.
Some are concealed in their ubiquity.
The salal is sometimes six feet tall
And huckleberry over ten.
Oregon grape ascend to present their jubilant bloom in spring.
Salmonberry dominate where the water collects in winter,
Thimbleberry where steep terrain sheds it away.

And everywhere sword fern;
Ancient ones, that lived beneath the giants,
And delicate newcomers sheltered in moss.

On the ground emerald strands of twinflower,
Amble over decaying limbs and stumps,
To mingle with Pipsissewa and rattlesnake plantain.

The fair-weather plants of spring should not be forgotten,
Trillium and lily and inside out flower and star flower.

Still, these are only the extroverts.
Many more reside here in obscurity.
Some grow slowly in the shade of the forest,
But are destined to rise high above the canopy,
If only they are given a century or two of good fortune.
Juvenile red cedar, western hemlock and madrone
Nearly invisible in the midst of the diminutive throng.
They may grow to define this place some day
Elders of a future society.
But, for now they blend into the crowd.

In the forest, only on the stillest day
Does debris stop falling.
This community has evolved to endure this abuse.
These battering conditions of existence,
Only deepen their mysterious beauty.

My paths through the forest
Sometimes fall on old railroad grade.
The ties and the tracks are long gone,
But the heavy gravel remains.
Folks devised and built elaborate networks of railroad
To get to those first trees, fell them, and haul them to Mud Bay.
They did it with steam engines, and mules.
And they lived in the woods they were harvesting.

I ask you to keep in mind this kind of human commitment.
They built a steam railroad through the Black Hills.
Not because it was easy,
But because it was the most efficient, reliable, and resilient way
To accomplish their goals.

One night last winter a brief but powerful front rolled through.
At the height of it I was struck by the sensation
That I could feel our planet
Hurling through an empty, hostile universe.
The snapping and breaking and crashing of trees in the distance,
Warned of the next gust.
I braced myself,
But I feared for the trees.
The ominous roar approached.
The slender grey trunks
Disappearing into the abyss of night,
First swung hard overhead,

Then bucked and whipped and yawed
Desperate to escape an invisible grip.
Lichen and moss and bits of tree
Flew through the air.

The sound of the wind
And the forest shattering in the onslaught,
The overpowering smell of pitch,
Punctuated by the toppling collapse of one great, old Douglas fir,
Marked me as indelibly as it marked the trees that early morning.

Soon, conditions returned to normal.
But, without question we were changed by the wind,
The forest and me.

I am very fortunate to live among the trees,
To be a student of the forest.
I did not learn about the plants that I grow from books
Or in classrooms,
Or from sources of authority.
Instead I studied Philosophy

Philosophy has led me
Away from research,
And toward investigation,
Away from invention,
And toward discovery,
Away from knowledge,
And toward understanding.

Which brings me to the first in a series of Philosophical Investigations regarding Growing Wild Plants...

This one titled:

Experience, Authority, and The Crowd

So much of what gets done,
gets done a particular way
because that's the way it has always been done.

True

The first rule of any system is, *follow the rules.*

But

The second rule of a system *rooted in empiricism* is,
every rule can be improved.

This, requires a willingness to concede
That I may sometimes,
Not all the time,
But sometimes,
Have room to improve,
Or just be plain wrong.

It is a challenge for all of us sometimes and some of us
seemingly all the time.

Along these lines,

I think there are generally three legitimate sources of knowledge...

The Crowd is sometimes how we solve problems. Some mighty big decisions are made by this method, for better or worse the leader of the free world is chosen this way.

But it is ultimately a house of straw. Muddled and muddied by bias and emotion and all sorts of human imperfection.

Maybe...

In the end,

We shouldn't google it after all.

From the muddle of the crowd we often turn to Authority for answers, and there are tomes and binders full of this canonical truth, but in the end it is only a house of sticks. Stubborn, ideological, and territorial, authorities are loath to adapt to new information at least not rapidly, and too often authority puts its own persistence ahead of the truth. So surprising as it may be, one should almost certainly question authority...

Who knew?

I think...

Experience, ultimately is the house of stone. Not just any old anecdotal reference, but experiential knowledge that is carefully scrutinized and understood within the context that it was discovered.

There is simply no substitute for this kind of experience.

Experience, is after all the substance of empiricism.

To be successful *growing wild plants* it is critical that we understand the forest, or the prairie, or the wetland, or the beach for the plants that are living and dying in them.

There is plenty of second hand knowledge about the forest,
But understanding is only found at the source.

Too often we are students in relation to books, or students in relation to our human teachers, only to behave as if we are the master when we engage with nature. We learn about nature in books or classrooms or God forbid on the internet, and then venture into nature to dictate our terms.

I think we have this all wrong. Integrating ourselves with nature means spending hours and days and weeks and months and years close to the ground, studying the materials and organisms of the earth. Looking for hints and inspiration on how to proceed.

Determining how to grow a wild plant or where it is best established is not an exercise in human will, but an exercise in

human understanding, an understanding that grows out of a deep and abiding reverence for nature, and maybe even a bit of humility.

It is critically important for humans to finally accept that we simply do not know what is best.

It seems to me that the other creatures of the Earth realize
The nature of our interdependence.
We are the ones who deny this connection.

Approaching nature as a student and not as a master is critical to our reengagement with the world, and it is the first step to successfully growing wild plants.

Horticulture has long dictated that plants
Should be changed to meet our needs.

I suggest that there is another discipline.
One that asks us to change, so the plants can remain wild.

Understanding how to preserve the wildness of plants,
May at its foundation be an act of recollection.
Rediscovering the language of nature,
Unpolluted by the noise of vanity and misguided self interest.

I am a witness to the costly efforts in King County,
To undo the damage of an earlier boom in agriculture,

With the tax revenues of this latest one.
But the salmon still decline,
The Orca moan with hunger,
While the people lament and do nothing.

I am witness to the foolishness of the state,
As the oldest growth remaining in state forests
Is sold to fund schools.
At what cost to our children? I wonder.
Yew trees are only obstacles for machinery,
Lilies and orchids disappear beneath gravel roads.
Then rain and wind and landslides follow.
Streams change course and wetlands disappear.
It doesn't take long for the first canary reed to establish,
Probably delivered in the wheels of an ATV,
Recreating in the gravel of a stream.
I no longer wonder how these things happen,
because I have seen them happening first hand.

One day last spring,
I was walking out of the REI in Olympia.
There were two people
Who exited just ahead of me
And we all paused to don our sunglasses,
As they greeted the sun,
Blazing in a clear blue sky.
One, deeply pleased by the light and the warmth,
Joyfully and rhetorically asked the other,
"What did we do to deserve this?"

I wondered, and...
I was afraid I knew the answer.
It was one in a series of eighty degree days,
In May,
In Olympia, WA.
And the humans I encountered could not be more pleased.
I smiled helplessly and stepped off the curb,
Onto the hot black asphalt of the expansive parking lot.
The forests are dying.
The people, quite frankly,
Couldn't care less.

Ultimately, the problem of ecological restoration
Is not a problem with plants, or weeds, or salmon.

The problem faced by ecological restoration is us.

More precisely,
What we value,
And what we fail to value.

We cannot settle for building systems that prevent nature from
harming us physically or financially.

But, instead we must adapt our systems to nature,
And invite nature into the systems that we build.

There are many differences between the propagation of plants for the practice of ecological restoration and more traditional forms of horticulture and agriculture.

I refer to this type of plant propagation as simply, 'Growing Wild Plants'.

I think we should distinguish here between the terms "native" and "wild" and beware the confusion, the overlap, and the differences.

A native plant may be wild, or it may be thoroughly tamed and cultivated, whereas a wild plant could be a relatively late arrival in an ecosystem where it has naturalized.

I suppose to be precise my endeavor has been to grow wild native plants, as opposed to cultivated native plants or non-native wild plants.

The circumstances under which a native plant may become cultivated are the steps in which characteristics of that plant are intentionally or unintentionally unnaturally selected for, so the potential of future natural selection is therefore presumed to be limited by this bottleneck of unnatural selection.

Traditionally, the purpose of plant propagation is to modify Plants through breeding and selection,
Making them more agreeable to our terms.

The goal is to produce a seed that easily germinates and grows into a consistent and predictable plant with particular desirable characteristics.

Or even ultimately forgo seeds all together after the characteristics are genetically settled, and propagate the plant vegetatively.

The propagator of wild native plants is guided by very different principles.

First among them is preserving the wild nature of the plant, and therefore preserving the future potential of that plant to evolve under changing and possibly extreme conditions.

It is under these extreme conditions that the broadest genetic pool will be needed to make possible the rapid adaptation of these ecosystems.

Propagation systems for wild native plants, guided by this principle must refrain from intentional selection, but also must work to eliminate the unintentional selection that occurs in many conventional and traditional systems of plant propagation.

As someone engaged in philosophy
I am concerned with language,
And I am concerned with maximizing its precision.

In the nursery, every item whether object or subject has a name.
The subjects with the power of speech of course name themselves.

But, not all subjects have the power of speech,
So those of us with that power
Respectfully name them.

In order for the nursery to function,
We all agree to the meaning of these terms.
Each of the items has a protocol for proper use
And each has a well defined role to play.

As someone engaged with nature,
I am concerned with the terminology
That is used to define and identify our relationship to nature.

The problem for example with the term Environmentalism.

Referring to nature as the environment,
Indicates our long estrangement.
Nature is the source of our lives
And we are inextricably intertwined.
When we try to distinguish ourselves,
Whether by diminishing the value of nature
Or by elevating the value of our own comfort,
We are defying the clear truth
That our fates are the same.

What I hear now
Is not so much talk of the environment,
But talk of Ecological Restoration.

This phrase reminds me of another,
something like: Make Ecology Great Again.

It is ultimately an appeal to authority.
It may be an attractive thought,
And in this case it may even be a valid aspiration,
 But,
It has never been achievable,
And as we move into the future,
It will be patently impossible.

The world is changing too quickly for restoration.

If we are to survive this change at all,
We will reintegrate ourselves with our ecology,
 And,
With one another.

As much as we are concerned with
Restoring particular plants to a project site.
We should be equally concerned with
Healing our personal severance from nature,
And doing everything we can to enable that healing for others.

This kind of ecological restoration becomes something different, It becomes a kind of ecological integration. or reintegration,

As we rediscover a reverence for the natural world,
And aim to make the concerns of nature our own again.

There is in my estimation no deeper reservoir of information about climate and weather, and no more powerful resource for adaptation to change than the annually updated seed banks of the still wild or minimally disturbed wild lands of the earth.

The seeds of plants that have been carefully cultivated by the people for millennia are securely stored in a vault encased in ice to protect them from time and nature and the erratic behavior of their creators.

But little more than obscurity protects the most valuable treasures of this planet; wild seeds of wild plants stored for decades or more just beneath the surface of what little wilderness remains.

These seeds are not metabolically still or static.

They are living and cycling through physiological dormancy, steadily approaching and then achieving release from it seasonally, before drifting back into dormancy if the conditions for germination and growth do not exist.

Plants are Not Objects - Plants are Subjects

Plants and trees commit their lives to defend a particular space, be slow to consider your plans to displace them.

We have grown accustomed in the modern world to convenience and the immediate availability of whatever it is we desire.

But plants are not books on a shelf,
Or bricks on a pallet.

There may be no better way to understand the subjective nature of plants than to consider physiological seed dormancy.

Seed dormancy is controlled by both genetic and environmental factors.

Different genotypes within a species will exhibit different degrees of dormancy.

The same genotype may exhibit different degrees of dormancy based on the environmental conditions in which the seed developed.

So, genotypical, phenotypical, and individual variation can be expected.

The physiological dormancy develops in the seed itself, and is not directed by the parent plant.

Seeds exhibit continuous (non-discrete) phenotypic variation in physiological dormancy.

Seed from the same mother in the same season can exhibit a variety in the type and depth of dormancy depending on what part of the plant or even what part of the flower the seed developed on.

Propagation protocols for species are therefore not highly reliable.

Propagation protocols that work for a given seed lot of a given species should not be presumed to work for future seed lots of the same species until tested.

A protocol that works for a given seed lot that is fresh, may not work for the same seed lot after storage.

I would warn that seed embryos can easily be damaged by elaborate attempts to release dormancy, and the harm is often in excess of the benefit.

Also, I think it could be argued that this is one of many things that is actually de-wilding the native plant.

If an elaborate propagation protocol improves germination results from 30% to 75%, an alternative might be, forgo or limit the seed treatments, and simply increase the number of seeds in a tube. Then the ungerminated dormant seed can travel with the growing plant out into the project area still dormant, contributing to the existing seed bank at the site, and providing a bit of an insurance policy if the first plant should suffer a setback or die before it establishes itself.

Consider that if you are buying bare root plants, you are only getting plants from seeds that willingly germinated under the conditions provided at the nursery. This is a layer of unnatural selection and a sort of de-wilding.

The plugs that we ship always contain a well developed living plant. But, in almost every case they also include multiple dormant seeds nestled at the base of the plant, which remain viable and ready to emerge in the future at the restoration site.

It is better to build systems that let wild seeds germinate in good time, protected from disturbance until the plant has emerged.

It is an incredible thing to realize and a fascinating community of hidden living things to ponder.

In an effort to communicate just how it is that we design evolving systems in the nursery operation at Sound Native Plants, please indulge me while I embark on another philosophical journey.

The secret is, there is no secret.

There is no special gift or patented invention
Necessary to solve problems.
There is no silver bullet or magical elixir.
There is no mechanized god to step in,
Neither is there a devil in the machine.
In the end it is up to us.
Coming to terms with this is a critical first step,
And a terrifying one at that.
As humans appear to be gearing up
To either wipe themselves out,
Or spend the rest of their existence
Lamenting and regretting what was lost.
We cannot let fear stop us,
Because, only we can fix it.

The secret is, never give up.

Hard work and dedication
Are what it takes to solve problems.
The dedication to solving a problem,
And the willingness to innovate,
Even when that means running afoul of the powers that
be, Are what it takes to succeed.
The best way to get permission to do something
Is in fact to succeed at it.
Don't let obstacles,
Real or imagined,
Stand in your way.

The secret is, before you do something a second time, first do it perfectly once.

This is the purpose of a system.

Standardize the process,
Or randomize the results.

With each new execution,
Subtle improvements to the system
Are introduced tested and then either abandoned or
Incorporated into the rules.

Typically, a new system
Will rapidly evolve
As we put it to the test.

With well established systems
It is rare that we find any need for modification,
But we are quick to marvel at the elegance
Of the subtlest new improvement.

The imperative is to work slowly and intentionally
With a laser focus on perfecting the steps of the system.
Speed ultimately comes as a consequence of mastery,
Not haste.

As a result of the systems we have developed, it can be confidently concluded that the plants we ship have not become a vector for exotic soil organisms. Or more accurately, have not become a vector for soil organisms that do not exist at the installation site, whether they are known pathogens or not.

It is categorically imperative that native plant nurseries do not harm the ecosystems they exist to enhance.

It is quite easy to produce a single specimen of a given plant, even a wild one. But the real challenge comes with producing tens of thousands of that plant, from wild seed, on a deadline, so that each one meets the specifications of the order and is ready to be shipped on a particular date, often a couple of years into the future. This is what a system like this enables.

=====

As far as structures and infrastructure, primitive is always best. The less elaborate the system, the less costly it is to maintain and the less vulnerable it is to disturbance. You do not need electricity or artificial heat to grow native plants, you do not even need cement. But you do need structures that can be walked away from for a few hours a day at least, returning to find everything still in order.

Structures must eliminate variables, like wind and rain and birds and most importantly mice. If you do not eliminate these variables then you can really never determine what is wrong when you fail, nor what is right when you succeed.

You cannot determine why a seed has not germinated, if it has been removed from the tube by a mouse or a bird. Structures must exclude these creatures, or nothing else is really possible.

By building these primitive, minimalist systems, we pave the way for what may be a most revolutionary advancement.

As with many human systems, the ecological restoration industry has employed a core and periphery approach, or hub and spoke as I like to call it. This design creates indispensable resources at the center of an operation, and places all of the projects or investments at the end of spokes around the periphery.

All roads ultimately lead through the hub, creating a system wide risk that a catastrophic collapse can effect all of the projects at once. The hub becomes a potential source of contamination for the spokes it serves. Organisms common in one area, travel through this type of system and ultimately contaminate all of it.

A native plant nursery is a perfect example of a hub. Imagine used containers and tools traveling from the hub, out the spokes to the project sites, and then returning to the nursery for reuse. The entire system becomes a vector for contamination with exotic organisms, whether they be weeds or water molds.

If instead we build primitive systems that can exist in situ, constructed at the site of major restoration work, they could ultimately serve smaller nearby projects. If this work was completed and the nursery rendered obsolete, the operation could be rolled up, and the footprint planted. Corridors could be constructed between these nodes, so that the hub and spoke system is replaced by a node and corridor system. Something resembling that railroad I asked you to imagine earlier. Not muscling through the terrain to devour the forest, but muscling through that same terrain to assist in the enhancement and management of it. Maybe in time we build our own railroad, to burrow deep into the wilderness, adapting and learning along the way, mitigating fire threats and reducing the number and type of invasive weeds, while increasing the numbers and variety of native plants.

Finally, I will leave you where I began,
In the forest.

Since 2015, the part of western Washington where I spend most
of my time has suffered unusually deep, seasonal drought.

The relentless summers
Disfigured and killed so many forest plants.
I always thought of winter as the season of degradation,
Spring and summer the seasons of rebirth and growth,
When a fresh living layer of life wrapped the forest in vitality.
But summer of late had become the season of death,
The wait for autumn rain was just too long for many.

This year began with a late winter storm,
The forest plants I had grown so attached to were buried
Flake by flake, beneath more than two feet of heavy snow.
In the final hours of the initial event,
The sound of tree limbs breaking
And falling heavily to the ground
Resounded through the forest.

The cold dry air that set in after,
Held the snow in place for weeks,
And it never really melted.
Instead it slowly evaporated away,
Denying the dry ground below even this compensation.

When the snow was finally gone,
The forest understory, bent and fractured,
Heavily laden with broken branches,
Seemed an unrecognizable shambles of debris.

The creeks had run dry before the snow,
And they did not run again,
Before the hot sun of May
Baked the broken forest into kindling,
And that familiar summer dread set in.

Another summer like last year seemed all but certain,
As the unmistakable bronze of dead Doug Fir
Marked the canopy.

But this summer would be different...

June this year did not resemble June last year,
And by July there was rain,
A rare event for that month,
In our region.

.

What followed in August though,
Was truly extraordinary.
It began with a spectacular thunder storm,
Which hurled bolts of lightening into the Black Hills.
And then rain, heavy rain,
That pooled and flowed
Through the forest.

I have never before witnessed
A transformative event of this scale.

The most memorable weather is destructive.
But this weather was profoundly creative.

In what seemed like a matter of hours
The forest began to grow again.
Every member of the forest community
Enjoyed an extended period of rejuvenation,
Reversing the losses seen over the last few years,
The layer of vitality had returned.

Beneath the burden of deprivation,
The capacity for rejuvenation remained.

The forest is alive.

I have concluded that a successful life begins with a drive to be
indispensable.

It is something we are compelled to do by the nature of
evolution.

But there is more than one impulse, and in time I think that drive
transforms, from a desire to be indispensable to a desire to
become superfluous.

To secure and return all we have gained during the part of our lives when we were driven to outperform others.

I see this in the great, old Western Red Cedar trees who have been nearly undone by the drought and heat of the last few years.

It is not the species that is on the ropes, but those individual trees that are pushed to the brink.

The newcomers will grow and thrive in appropriate places, but those grand old trees are living out the final stage of their lives.

The foliage is sparse and red or brown because the trees are devoting their energy to producing seed, at the expense of the tree itself.

That is what living looks like in two thousand and nineteen.

They are thinking less of themselves, and thinking more of the future, and those little red cedar to come.

Maybe, we can learn something from them, and from the forest, about how to live our one wild and precious life.*

* *The Summer Day* —Mary Oliver