



Trees, animals, birds, plants, forests, mountains, lakes and rivers — everything that exists in Nature are in desperate need of our kindness, of the compassionate care and protection of human beings. If we protect them, they in turn will protect us.

- Amma

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GreenFriends is a global grassroots environmental movement which promotes environmental awareness and local participation in conservation efforts throughout the world.

GreenFriends is one of the projects of [Embracing the World](#), a not-for-profit international collective of charities founded by internationally known spiritual and humanitarian leader, Mata Amritanandamayi (Amma)

To join the Pacific Northwest GreenFriends Litter Project, write Karuna at karunap108@comcast.net

PNW Gardening

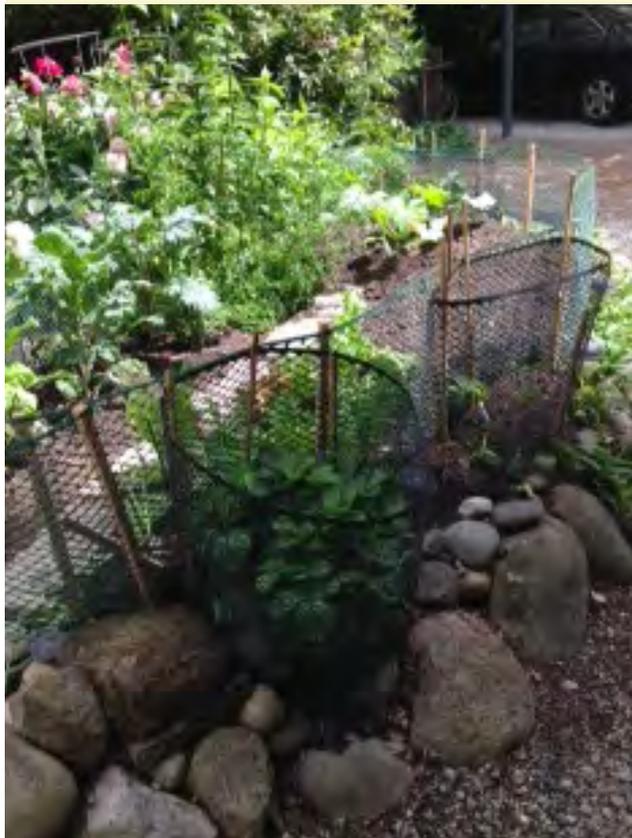
Rabbit Proofing the Garden By Lin Rose

I should have known something was up when I saw a brown bunny watching me. He was less than four feet away as I lovingly dug lettuce starts into my garden. Isn't that sweet, I thought to myself; he isn't the least bit afraid of me. "Hi, bunny," I said softly.

With the job done, I went inside to wash my hands—and when I got back, every lettuce plant had been nibbled to the ground. Duh! Had I forgotten my Peter Rabbit bedtime stories? Anyway, what's a rabbit to do when multiple new house construction ruins his old neighborhood foraging?

I covered the lettuce patch with bird netting and, before long, the plants recovered and put out lovely tender leaves for my salads. As a token apology to the rabbit for removing his buffet, I put a few leaves of store-bought lettuce on the back patio. He didn't touch them. Apparently he has discriminating taste and prefers his organic produce fresh off the farm.

Luckily, he doesn't like chard, kale, or parsley. Those plants have been growing undisturbed, except for holes dug by the squirrels.



My pea vines were another matter. I came out the other day and found them clipped to the level of a bunny nose. I quickly dispensed more bird netting. It does a great job of keeping the critters out, but the trouble is that it keeps me out as well. Harvesting becomes a nightmare of tangles.

Enter Yasas, the guy who does fabulous work in my yard now that I'm too arthritic to do it myself. He sent me off to Home Depot to buy lightweight wooden stakes and a roll of 36" wide plastic fencing that he cut in half for an 18" high fence to surround the garden. With the mesh serving as a retaining wall, he also shoveled in a nice rounded dome of compost-amended topsoil.

The round enclosures outside the garden fence are strawberries that got their own heavy black plastic mesh enclosures to protect them from squirrels, and from burrowing rats that live in nearby ivy. Netting draped over the enclosures' tops was meant to keep

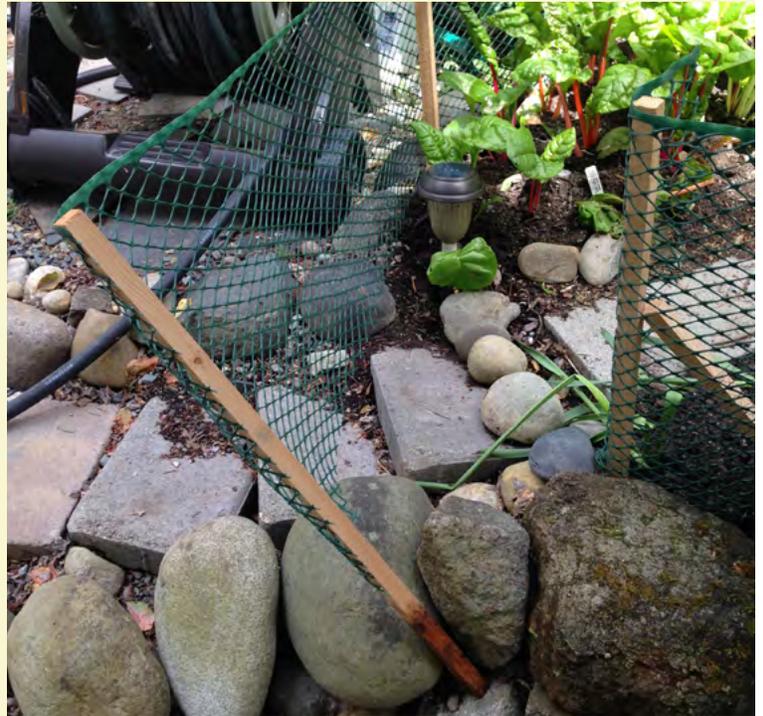
PNW Gardening

the birds out. It didn't work. I found a little gray bird flitting desperately inside one of the enclosures. If it couldn't get out, how did it get in?

The garden gate is a marvel of ingenuity. Yargas cut a length of plastic fencing and secured one end with poly twine to the stake on the left side of the garden opening. The other end he stapled to a loose stake, leaving a length of it sticking out from the bottom. This piece of mesh is then pulled across the garden opening, and the free end of the stake is jammed into a hole in the ground behind a big rock to hold the gate shut. It's lightweight and super simple to use. Brilliant!



Open Gate



Closed Gate

The squirrels must be even more brilliant, because I'm finding telltale holes in the garden soil with no sign of the gate having been used.

Not only that, the one and only ripening strawberry I've been watching has disappeared. There is a perfectly round hole chewed at ground level in the heavy black plastic mesh—about the size and shape of one of those cute little gray rats with the pink ears. My big-brained human intelligence is evidently no match for the hungry wildlife. So now I'm going outside to plant clover for the rabbit.

PNW Gardening

Backyard Herbal Medicine--Most Marvelous Mint by Visala Hohlbein



Hi Friends, time to practice gratitude for the glorious magical, hardy and very useful herb – MINT.

There are literally hundreds of varieties of mint. It is possible that you may NEVER know them all... but here are some of the more common varieties you may find here in local gardens: Peppermint, Spearmint, Pineapple Mint, Lavender Mint, Grapefruit Mint, Calamint, Licorice Mint, and Basil Mint.

Mint is a very common fast-growing herb, one that's perfect to grow in the Pacific Northwest because she makes a wonderful cup of tea on a rainy Seattle day! Mint grows well in full sun to partial shade. Even though some folks consider mint invasive, I don't ever feel that way because I am always ready to use the supply that grows. Also, mint is easy to pull out and remove if necessary.

Mint can be eaten directly from the plant (e.g., in a refreshing salad) or made into tea. You can see from the photo that it is very easy to clip and dry mint. If you dry her out, you can use her all winter long during the time when she isn't available in the garden. There will never be a need to purchase tea again! Grow your own!

Mint has sturdy, easy to recognize, broad green leaves. If you are ever in doubt about whether the plant is really mint, all you have to do is gently rub your hands along her stem and leaves and then inhale the scent. If she is mint, you will recognize the fragrance immediately. Mint is a perennial, meaning she returns to the garden spot where planted after the winter passes. Some varieties of mint can grow to be about 16 inches tall in the right conditions. You can see the incredible height in the photograph! She is so very amazing!

Try putting a sprig in a vase on your indoor or outdoor alter and offering it to your beloved deity.

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Mint's Medicinal Benefits

Because mint contains many helpful constituents, leaves, flowers, and stems can be used for herbal medicine. Menthol (provides cooling sensation); Beta Carotene (gives an immune system boost and is also good for eyes); Vitamin B complex (promotes good health); Vitamin C (acts as an antioxidant for cell protection); Potassium (helps maintain healthy blood pressure), and some useful tannins (act as antioxidants.) Mint has so many healing properties, you don't want to miss using her!

- Reduces pain associated with stomach aches, indigestion and cramps
- Can be used to provide relief from stomach spasms
- Is considered a calming/soothing herb
- Can be used as a digestive tonic
- Can be used as an herbal gargle for bad breath
- It makes an excellent tea to soothe a sore throat or cold (because of the Menthol)
- It provides awesome relief from insect bites (you can make a poultice)
- It has one of the highest levels of antioxidants of any herb!
- It contains Rosmarinic Acid which is good for allergy relief

Mint is indeed an important herb for backyard herbalists! It is very easy to get a start of her from a friend who will be happy to share, and she will transplant easily. **This herbalist is happy to share.** If you'd like some, just ask!

Let's get to know our friend Mint better. Take time to talk to her and listen to what she is saying to you! Sing to her! This will help you develop a bond with Mint. She can grow easily in a pot, so if you live in an apartment, no problem. This is a superb herb to plant in a neglected parking strip or alley to encourage an unloved portion of Mother's Earth to become a frequent gathering spot for neighbors. One of my favorite things to do is to pick some and make an herbal bundle to share with a friend. Everyone loves the gift of a sweet bundle of fresh mint!

Two quick and easy ways to start using Mint intentionally and medicinally:

Before you gather the herb, remember to thank the plant, and always give something back when you take something from it. What you give back is up to you. You can give back a chant, song or a simple message of gratitude, or maybe you will return the used portion of the herb back to the base of the plant. That is also a loving action.

1. HERBAL TEA: Cut off small pieces of Mint (2 tsp.) and chop it finely to release its fragrance for making tea. Boil water, add the minced leaves, and let her infuse 10 minutes before drinking. Incredibly refreshing! You can either strain the herb out, or just enjoy the pieces when you drink the water. After all, it is edible. Herbal water is much better tasting and healthier than just plain water. It tastes as great cold as it does hot. Think about filling your water bottle with a sprig of mint or two. It is amazing how fresh and stimulating she is!

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2. HERBAL INFUSED SALAD: Cut a few sprigs of mint and gently add her to your next salad or smoothy. Enjoy the benefits!

As with other herbal plants, please always remember herbs are medicine and must be used with care! Pregnant women should use special caution with herbs.

I hope you will take time to reflect on a new connection to the mint plant, and ultimately to your Mother Earth, by experiencing mint's herbal leaves and drinking mint infused tea water consciously and intentionally. Happy Herbing!



PNW Gardening

Planting Nitrogen–Fixing Plants in Our Gardens and Food Forests

by Netsah Zylinsky



Nitrogen (designated N in the periodic table of elements) is abundant as a form of gas in our atmosphere, yet it needs to be “fixed” in soils to be available to plants. There it creates mutually beneficial relationships between plants and is vital to the success of our gardens.

So here’s the Nitrogen story:

Nitrogen-fixing plants do not pull N from the air on their own. They need help from common bacteria call *Rhizobium* or *Bradyrhizobium*. These bacteria live in the roots of plants such as peas or beans or soybeans and use the plant to help draw N from the air. Within the nodules of the roots, bacteria convert Free Nitrogen to ammonia that the host plant utilizes for its development. This biochemical process can also be detected in decomposing material—although the nitrogen from it is not directly available to plants; it must be converted to ammonia, then to nitrites, and finally to nitrates, which are taken up by plant roots.

The purpose of Nitrogen

- N is an element necessary for plant growth
- Too much or too little N causes productivity decline
- N must be constantly renewed and replaced in the soil
- The right amount of N insures sturdy dark foliage
- N deficiency is indicated by yellow or light green leaves
- Excess N shows up as watery weak plants
- Organic sources of N release slowly and help build up the biomass of organic matter in soils, as opposed to chemical fertilizers that tend to burn plants.

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- N is also available in green manures, crop residues, non-symbiotic N fixation (e.g., blue-green algae), and as a component of manures and compost
- Lastly, and most interestingly, N is responsible for increasing the percentage of protein in our food! Note that any form of amino acid requires one Nitrogen molecule.

All these benefits from Nitrogen provide the reason we include Nitrogen-fixing plants in our PERMACULTURE gardens.

Samples of Nitrogen-fixing plants:

Groundcovers—such as Hairy Vetch, White Dutch Clover, Strawberry Clover, and perennial Sweet Peas.

Lower Story plants and flowers—Silver Buffaloberry, Silver Lupine, Ceonosis, Licorice , or Siberian Pea Shrub (Caragena)

Legumes—such as peas, beans, lupines, peanuts, lentils

Tree Story—tall plants like the Locusts, Autumn Olive (as windbreak, both edible and fragrant), Indigo Bush (needs moisture), Mountain Mahogany (for insecticides and bee foliage). There is a higher protein content in Sea Buckthorne when we have a nitrogen fixer close by.

There are also plants called Nitrogen Dynamic Accumulators which gather nutrients and minerals and store them in their leaves. Some examples of those are:

Comfrey, wisteria, soybean, licorice root leaves, stinging nettle, yarrow and tobacco

So bless this knowledge of Nitrogen-fixing plants and let Divine Grace guide all our plantings...

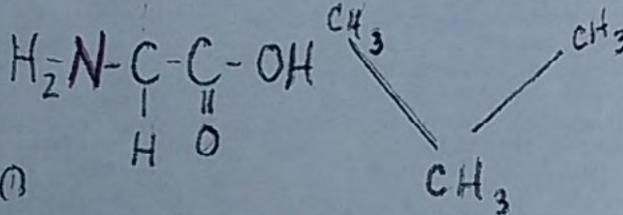
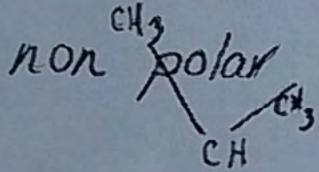


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5-^{*}Amino Acids Essential

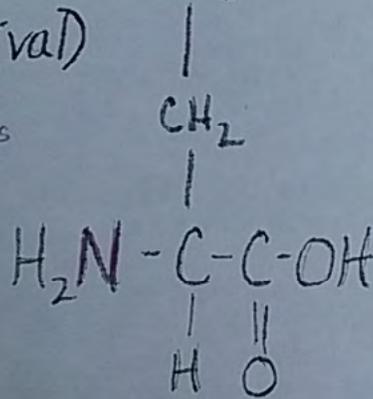
↓ not manufactured by the body
must get from foods

non polar amino acids



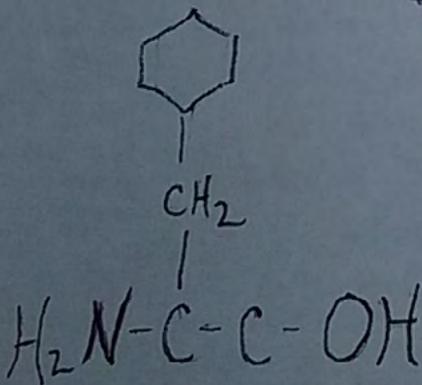
(1) ^{*} VALINE (val)

for building muscles
removes excess N
supports liver +
gallbladder

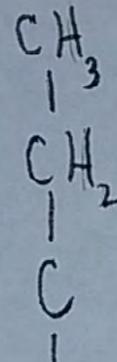


(2) LEUCINE (leu)

↓ for muscles + blood

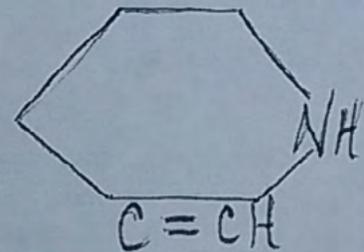


(4) ^{*} PHENYLALANINE (phe)
makes protein + brain chemicals



for regulation of
thymus, spleen,
pituitary + metabolism

(3) ^{*} ISOLEUCINE (ile)



(5) ^{*} TRYPTOPHAN (trp)

↓ for generation of
cells + tissue
gastric + pancreatic juices
optic system

Tree Planting and Habitat Restoration

Nine Ways to Plant Trees (or cause trees to be planted)

by Tirtha Golightly



Amma has been telling us for years to plant trees. However, many of us don't own land... so what to do?

- 1) We can give trees as gifts to others. We can also suggest planting a tree to commemorate friends, family, or community members that have passed on.
- 2) We can ask our city or local school for some space in a park, school or on vacant land -- even a few feet alongside a road -- to plant a community orchard with fruit and nut trees, and/or a community garden with low-maintenance vegetables, berries, edible weeds, etc.
- 3) We can join local conservancy groups that care for publicly owned trees. There is usually some tree-planting involved, as well as weeding out invasive species like ivy, to protect existing trees.
- 4) We can write our municipal, regional and federal governments, urging them to plant and/or conserve more trees. Apparently our letters and emails really do influence politicians, so it's well worth doing. Increasing our trees is one more way we can address global warming, which is already happening. The past three years have consecutively broken world heat records. Trees reduce carbon, provide oxygen, and have a cooling effect on homes and cities.
- 5) We can look up our municipal government's website and do a search to see if they have an Urban Forest strategy. Many cities do. However, their goals may be too far in the future. Write and urge them to plant more trees sooner, as global warming is happening now, and trees take years to grow. Find out if your city has volunteer opportunities for tree planting.

Tree Planting and Habitat Restoration

6) We can also urge our city to protect existing mature trees -- studies show large trees sequester more carbon than younger trees do, and when they are killed, they release a lot of carbon. So it makes sense to keep them alive and healthy as long as possible. Many trees are lost to development and disease, as well as to residents who choose to cut down their healthy trees.

7) We can write letters-to-the-editor to our local newspapers, urging people to plant more trees now, to help mitigate the effects of global warming.

8) We can suggest to property-owning family and friends that that they can cool their homes by planting deciduous trees to the south and west of their houses. Trees lose their leaves in the fall, allowing sunlight to warm the house during late fall, winter and early spring. Evergreen trees planted in the north and northwest can help reduce wind on the house. "Just three trees, properly placed around a house, can save 30 per cent of energy use." ([Source](#))

9) We can donate money to buy trees to be planted in developing countries, such as Africa, where many trees have been cut for firewood. Moringa is a particularly good tree even in drought conditions, and is fast-growing with highly nutritious leaves.

Some interesting websites:

[10 Carbon-storing trees and how to plant them](#)

[Forest Man video](#)

[How Trees Fight Climate Change](#)

[Moringa Documentary- the "miracle" tree](#)

[The Best Technology for Fighting Climate Change? Trees](#)

[The Man Who Planted Trees: A Conversation with David Milarch](#)

[Which Trees Offset Global Warming Best](#)

Tree Planting and Habitat Restoration

One-by-One by Ananya Holterman



As I sat on the wall of the old foundation in the restoration lot, a bit of movement in the dirt caught my eye. I looked down, and for one split second the tiny face of a mole peeked out at me from a hole in the dirt. Upon seeing me, it scurried back into its tunnel as quickly as it had appeared.

It seems as though, one by one, new types of critters are appearing in the lot. For example, many types of birds have seemed to enjoy foraging through the debris after each work party. Karuna saw an orange butterfly one day, and then a few days later I saw a yellow one flutter by. Shortly thereafter we both saw the yellow one fly through the area two more times. A week or two later John, another frequent volunteer, saw two butterflies that were different from each other and different from the ones we had seen.



Towards the end of one recent work party, I saw a lone honey bee fly by. It seemed odd, out of place even, since there is not much blooming there now. It is delightful to imagine all the creatures that will call this place home once the native plants are settled and start flowering next spring.

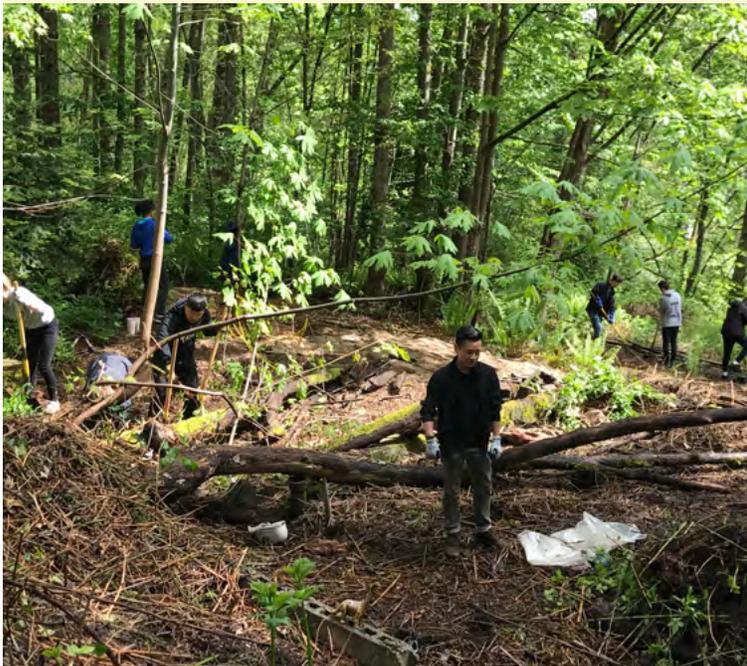
Tree Planting and Habitat Restoration

Greenbelt Restoration Work Party: May 13



Twenty of the 23 participants at our May 13th work party were students from a University of Washington Introduction to Environmental Studies class. The students were enthusiastic and such good workers.

We set up five work stations, and assigned four students to each of them. One group finished their work early so they joined another group for the remainder of the time.



Tree Planting and Habitat Restoration



Most of the work party was spent cutting down blackberry and ivy vines, and digging out blackberry root balls. Once the root balls were removed, we covered the cleared land with burlap bags to reduce weed growth. Then dried blackberry canes and other debris were placed on top of the burlap.

Below are some before and after photos:



Tree Planting and Habitat Restoration



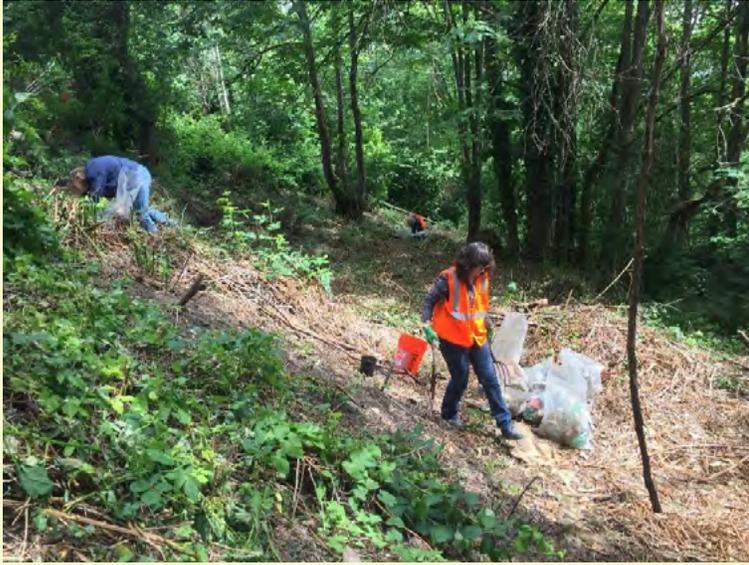
This is the trash we collected during the April 30 and May 13 work parties:



As always, we accomplished so much during this three-hour work party.

Tree Planting and Habitat Restoration

Greenbelt Restoration Work Party: June 14



For three hours on June 14, eight volunteers worked diligently in our Greenbelt restoration site. The week before, Seattle Parks Department staff had cut down another large area of blackberry vines, leaving a lot of debris and uncovering an astonishing amount of trash. We spent the first hour of the work party picking up trash. These two photos show about a third of the trash we picked up.



When we began this project, there were two fields of invasive bamboo on this site. Seattle Parks Department cut the bamboo down last March. We placed the cut bamboo on drying racks so that they didn't re-root. That bamboo is now dry.

During the June 14 work party, we stripped the branches from the dried bamboo canes. The canes were given away to gardeners and the branches are being used as part of our newest drying racks. (You will learn more about the drying racks in another article in this newsletter.)

Tree Planting and Habitat Restoration



We also removed blackberry vines from plants and trees...

... and rescued ferns and a fringe cup plant.



It was another productive and rewarding day. We plan to have more work parties in July so hope you will consider joining us in this work. Accommodations will be arranged for volunteers coming from out of town.

To learn more about the July work parties or to be notified of future work parties write: karunap108@comcast.net.

Tree Planting and Habitat Restoration

The Rack Zone by Karuna Poole

When we cut down blackberry, bindweed and ivy vines, and when we dig up blackberry root balls, it is important that we keep them from touching the ground and re-rooting. We accomplish that by placing them on racks. Being above the ground also allows air to flow through them, which in turns facilitates their drying and in time turning into compost that will enrich the soil.

The base of the racks are made from fallen trees and branches and/or non-native or unhealthy trees that have been cut down.



When we started working to restore the Greenbelt site, there was a section of invasive bamboo. We cut it down, gave the canes to gardeners and put the branches and leaves on the drying racks. As a result, we have a lot of dried bamboo branches. We've started putting a layer of those branches on top of the wood in the racks. That makes it even harder for the vines to re-root. In the photo below, you will see a rack where bamboo branches cover the wood frame. On top of half of the bamboo is a layer of blackberry root balls.

We've been creating these racks since last September. Until now, they have been scattered throughout the site. A few months ago, when Yasas came to see the project's progress, he suggested that we use the cement foundation of a former house on the property to hold the racks. We realized that if we did that, we would be able to plant trees, shrubs and ground covers in the areas where the racks had been, so that's what we did. Ananya dubbed it "The Rack Zone".

There are now 12 racks in The Rack Zone. Some are already being used to dry cut vines and root balls; others are still in the process of being constructed.

Tree Planting and Habitat Restoration



Having the racks on the foundation also decreases the problem of accidental re-rooting. I had recently discovered that six inches under the dirt that had accumulated on the foundation over the years there was a cement floor. If any vines slip through the rack and root in the dirt, they won't go far because of the concrete.

When the materials on the racks are dry, we plan to spread the contents over the floor. We will then reconstruct the racks on top of the new layer of dried debris. In this way, we will be able to build up the soil in the house foundation and eventually will plant flowering ground covers there.



NATURE

Rumpled Mothers? by Lin Rose



As I sit with my chair and laptop stand only a few feet from my big front window, I'm enjoying a more intimate acquaintance with the birds and squirrels. For example, what I initially thought were early hatchlings of Oregon Juncos (the little gray birds with black heads; females have lighter heads) are apparently pregnant females. They're rumpled like baby birds, with sagging undercarriages... perhaps heavy with eggs.

What caught my eye is that during prior years I've seen females feeding their babies on the ground under the feeder, but now it's the male Juncos doing the feeding by bringing bits from the suet feeder to these females. Maybe females carrying eggs are too awkward to cling to the wire housing?

When I saw one of these rumpled fat ladies with nest material in her beak, then I was sure my theory was on track even though I haven't found any similar info online. They're fun to watch. I guess babies will be next.



NATURE

Interesting Facts about Ferns



- Ferns have been on earth for 360 million years.
- The type of ferns we see now have been here for 45-50 million years.
- Dinosaurs ate ferns, conifers, cycads and mosses.
- Ferns were on earth 200 million years before flowers.
- Ferns are helpful in preventing or eliminating pollution because they remove heavy metals from the air and the soil.
- Today's ferns are not edible because of toxicity. [Note: Maybe that is because of the heavy metal mentioned above.]
- Some ferns have a life span of 100 years.
- The height of ferns ranges from 2 inches to 30 feet.
- Compressed ferns turned into fossil fuel and became the basis for oil, gas and oil.
- Ferns reproduce from spores. They don't have seeds or flowers.
- There are at least 12,000 types of ferns on earth today. There may be up to 20,000 different species.
- In North America there are 441 varieties of native ferns.
- Ferns are vascular, circulating water and nutrients through their veins.
- In the past, there were people who believed if they ate ferns they would become invisible. Still others believed ferns protected them against goblins and witches.

You can learn more about ferns from the articles below:

[About Ferns](#), [Fern](#), [Fern Facts \(Casa Flora\)](#), [Fern Facts \(Soft Schools\)](#), [Five Fun Fern Facts](#)

New GreenFriends Feature: Optimism of Nature

In Awaken Children! Volume 9 Amma said:

Look at the optimism of nature. Nothing can stop it. Every aspect of nature tirelessly contributes its share to life. The participation of a little bird, an animal, a tree or a flower is always complete. No matter what the hardships, they continue to try, wholeheartedly.

You are invited and encouraged to send in your photos or stories about the optimism of nature as you see it. If you send a photo, please provide a few sentences or a paragraph to go with it.

The Optimistic Fern by Ananya Holterman

This little fern seems to demonstrate the optimism of Nature. Can you spot it? It is growing in a rocky crevice between a tree and the somewhat barren ground in the restoration area where the surrounding area has been stripped of all the invasive vegetation. The fern found an opportune spot to sprout some fronds amidst the garbage and debris from the site. It must be getting just enough of what it needs to keep going.



PNW Litter Project

PNW Litter Project Stats

In June, 31 Litter Project members and their friends picked up litter for 79 hours. (Average 2.3 hours; Median 1 hour; Range 2 minutes to 15 hours) We have picked up litter for 8733 hours since the project began in July of 2011.

TerraCycle Stats

TerraCycle is an organization that recycles items that are normally considered unrecyclable. They have credited us with turning in 321,224 cigarette butts since 2013. We have also sent them 394 Drink Pouches, 732 Cereal Bag liners, and 2,997 Energy Bar wrappers.



Interesting Information from Our Readers

From Poornima in Shoreline:

[This 'tree' has the environmental benefits of a forest](#)

From Ananya in Seattle:

[Hansen's Northwest Native Plant Database](#)

From Arati in California:

[Comedy Wildlife Photography](#)