



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

Maltby Farm Autumn Harvest



PNW Gardening



PNW Gardening

The Art of Bonsai #2: Rhythms of the Seasons by Ken

As the trees around us transition into their fall color and winter dormancy, so do bonsai. Bonsai reflect the rhythms of the seasons in a spectacular, if smaller, way. Chlorophyll drains from the leaves of maples, ginkgos and other deciduous trees and the magical colors of fall briefly show their wonder.



The first frosts of the fall signal the evergreens to slow their growth and they begin to set buds for the next spring. As the temperature drops, the bright green takes on a rusty hue as if to tell the maples they are also planning to take a nap.

PNW Gardening



With fall comes new work to be done. The prudent bonsai artist has to think of the coming seasons to prepare trees for healthy growth. Second and third year pine needles can be removed to allow light into the interior of the trees to feed developing buds. Branches can be cut back lightly, especially in strong areas of growth, to stimulate interior buds. Doing so helps pines, hemlocks, junipers (below) and other evergreens to grow full and strong come spring.

PNW Gardening



Mountain Hemlocks have put on long shoots of new growth during the summer and get their first pruning of the year. Shoots are cut back to strong buds and branches that are too heavy for the design of the tree are cut back. Cutting back to smaller branches accents the strength of the trunk. Winter is the time to wire evergreens. Wire is the “paint brush” of the bonsai artist; properly applied it is hardly noticeable. Branches can be positioned to be pleasing to the eye and to allow sunlight to reach all parts of the tree.

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All the trees must experience seasons to be healthy, and this includes the dreamy, sometimes harsh sleep of winter. The larger and hardiest of trees stay out for the winter as they need the cold. The smaller and more tender trees go into the cold frame to protect them from heavy freezes. The goal is to heat the cold frame only to keep it above freezing so they too experience winter. Bonsai should never be brought inside for the winter. They will get weak and sickly if they brought inside. Dormancy gives them the rest that they need to be strong in the spring. Among all my trees only one comes inside in the fall, and that is a Ficus Retusa (“banyan tree”). It is a sub-tropical that is not winter hardy in this region. It will stay inside until spring when the nights are consistently above 50 degrees. It is put in a south facing window to capture what meagre light it can from the Pacific NW winter.

PNW Gardening



Winter will bring re-potting. Records are reviewed and lists are made of which trees need to be re-potted between December and early March. Done properly, repotting is critical to the health of bonsai. Old soil is removed, the roots are carefully combed out and cut back. The tree is carefully positioned, while new soil is added and the tree is secured in the pot. This process assures that the roots have room to grow, as a tree is only as healthy as its roots! Depending on the type and age of the tree, it will not need to be repotted for 1 to 5 years. The next article on bonsai will include photos of the repotting process as it is a part of the art that is not well understood by many.

Part 1 in this series can be found in the [September GreenFriends Newsletter](#)

PNW Gardening

Shawn's P-Patch Garden



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A Visit to Carpinito Brothers Farm in Kent by Sarva and Haley

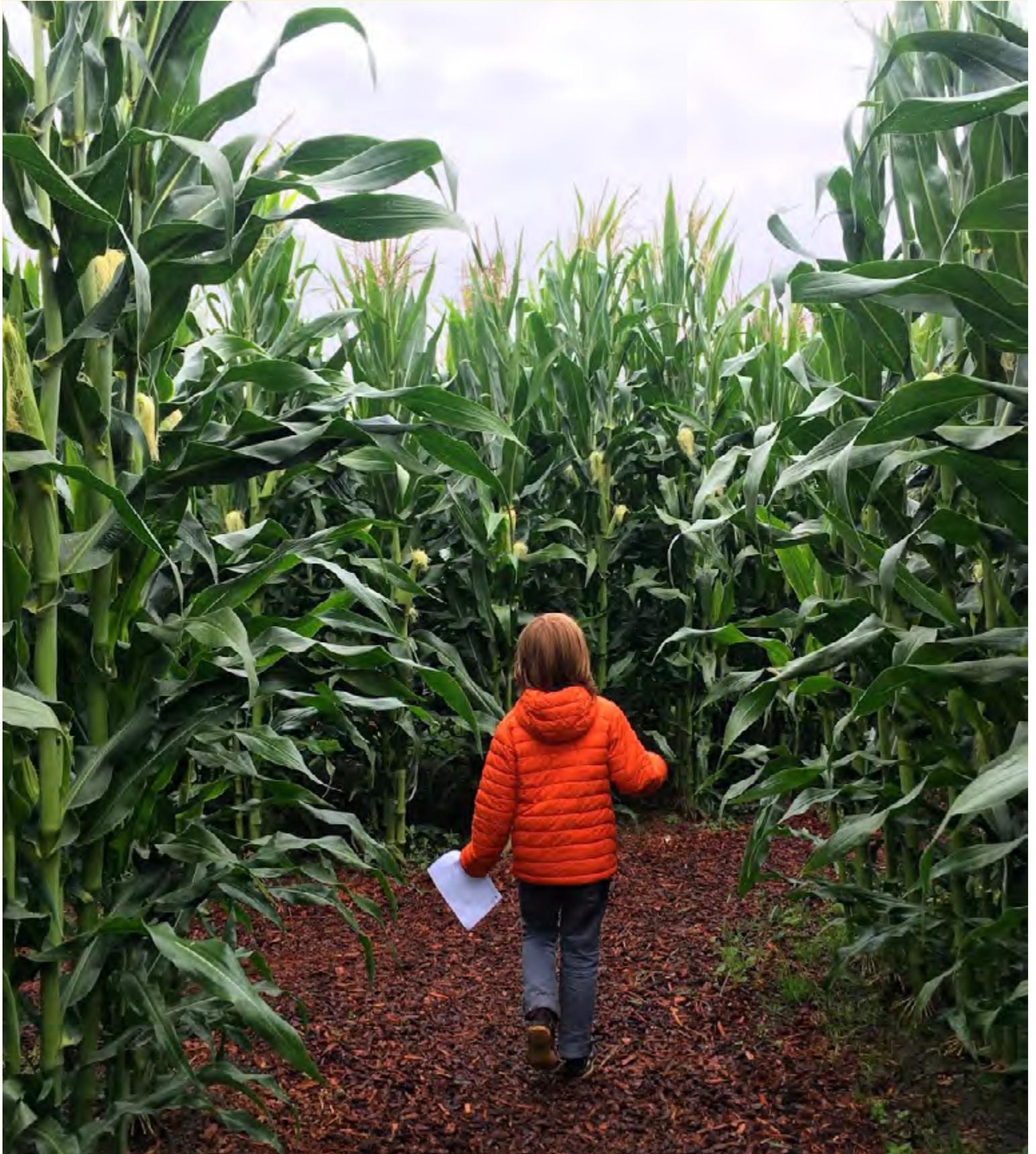
Pumpkin Patch



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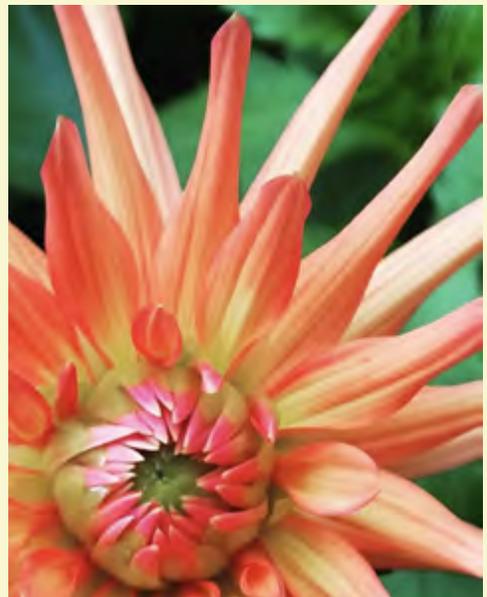
Corn Maize

We only got lost once!



PNW Gardening

Autumn Photos from Kristin's Garden



Nature

Healing Hands for Horses by Jyoti

I do integrated bodywork on horses. Every once in a while there are moments in my job that are truly magic. This morning was one of them.

I was at Tamarack Ranch in Joseph, Oregon, working in a brood mare's pasture on her very stiff jaw. I had forgotten a halter but, surprisingly, she let me walk right up to her and start working on her. Within minutes every other mare in the herd gathered around, peacefully and silently. For the next 30 minutes that I was working on her neck and jaw, every one of them had their nose either on me or on her. We were totally surrounded and supported. The silent, focused healing power of a herd is incredible.

Being a performance horse is a hard job, but the way Tamarack Ranch handles their horses is exemplary (like caring enough to have bodywork for their broodmares). After years of performance, for a horse to be well handled, to be able to be part of a cohesive, free herd on pasture, helps create the magic I saw displayed this morning by happy, powerful, trusting horses. Thanks TR, no wonder your mares' babies are so nice.



Nature



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Autumn Beauty Photos by Kothai in Bellevue



Nature



Nature

How Much Do You Value Your Next Breath? by Diya

Most of us don't spend too much time thinking about oxygen. Unless we experience a respiratory illness or irritant, we inhale and exhale all day long without giving any thought to where our oxygen comes from or how it's produced. It is well known the majority of our oxygen comes from the ocean with the second major source coming from trees. Only recently however, have scientists realized just how critical the Great Whales are to this process.

Last year, I had the opportunity to go out on a small research boat in the Sea of Cortez with Michael Fishbach, founder of the GWC (Great Whale Conservancy) to learn about whales and their contribution to our survival. Also on the trip was Ralph Chami, an Assistant Director at the IMF (International Monetary Fund) who was there to enjoy the whales but more importantly, to gather data for a publication he was writing. As I learned of Ralph's deep love and concern for the whales and his revolutionary financial framework which he hoped to use as a platform to reach the economic and financial communities, I knew he needed to meet Amma to receive her blessing for this work.

In July of this year, Ralph met Amma at the DC program and received her darshan. She sat with him for a long time, looking over his paper and asking questions while Swami Amritaswarupananda translated. She expressed so much joy and told Ralph he had 'a beautiful mind' to think of a way to inspire common ground between the economic and environmental communities. Before you begin reading the article that is now taking the world by storm, take a moment to inhale deeply while thanking the whales for the oxygen. Then while exhaling, ask yourself - how much do I value my next breath?

Saving the Whale: How Much do you Value your Next Breath?

Ralph Chami, Thomas Cosimano, Connel Fullenkamp, and Sena Oztosun

April 2019

(This article is used with permission of Ralph Chami.)

As more people and nations have become convinced that global warming is taking place, and we accept that the consequences of further warming are detrimental to economic growth and our survival, support for policies to combat global warming and mitigate its negative effects has also grown. Scientific research now indicates more clearly than ever that our carbon footprint has become a threat to our ecosystems and to our way of life as we now know it. Many proposed solutions to global warming are high-tech, such as finding ways to capture carbon directly from the air and bury it deep in the earth. But what if a low-tech solution to this problem could be found that is not only effective and more economically practical, but sustainable and ethical as well?

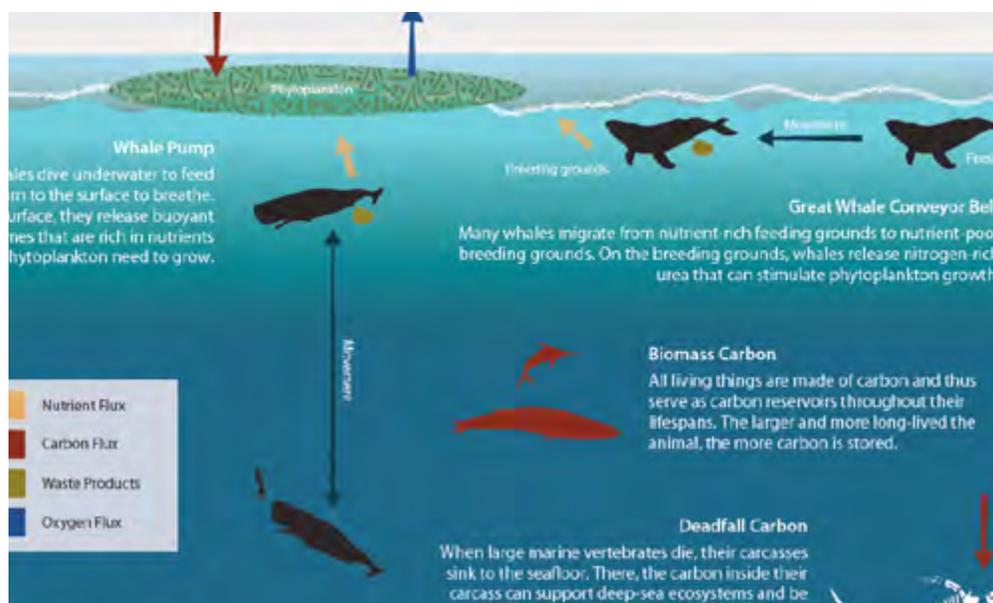
An example of such an opportunity comes from a surprisingly simple and essentially "no-tech" strategy to increase carbon capture from the atmosphere: increase global whale populations. Marine biologists have recently discovered

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that whales—especially the great whales—play a significant role in capturing carbon from the atmosphere. Imagine millions of whales, swimming throughout the global oceans capturing carbon in their large bodies. When whales die, they sink to the bottom of the ocean, each one sequestering 33 tons of CO₂ on average, taking that carbon out of the atmosphere for centuries. In contrast, a tree absorbs up to 48 pounds of CO₂ per year. But this is only the beginning of the story.

Whale Carbon

In recent years, scientists have also discovered that whales have a “multiplier effect” of increasing phytoplankton production wherever they go. Marine biologists have learned that whales’ waste products contain exactly the minerals needed for the growth of phytoplankton. Whales bring minerals up to the ocean surface through their vertical movement, called the “whale pump,” and also through their migration across oceans, called the “whale conveyor belt.” Preliminary modeling and estimates indicate that this “fertilizing” activity of whale adds significantly to phytoplankton growth in the areas that whales frequent.



So, how large is their potential impact? Phytoplankton is responsible for approximately 50% of all oxygen produced—that is, every other breath we take—and for the capture of about 40% of all CO₂ produced. To put things in perspective, that is equivalent to the CO₂ captured by 1.70 trillion trees—4 Amazon forests’ worth—or 70 times the amount of CO₂ absorbed by all the trees in the Redwood National and State Parks, per year! More phytoplankton means more oxygen and more carbon capture.

But the growth of phytoplankton is limited by the nutrients available in seawater. Despite the fact that nutrients are carried into the ocean through dust storms, river sediments flowing into the ocean, and upwelling due to wind and waves, nitrogen and phosphorus remain scarce and limit the amount of phytoplankton that can bloom in warmer parts of the oceans. In colder regions, such as in the Southern Ocean, the limiting mineral tends to be iron. If more

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of these missing minerals became available in parts of the ocean where they are scarce, more phytoplankton could grow, potentially absorbing much more carbon than otherwise possible.

Earth-tech and not only High-tech

This is where protecting the whales comes in. If whale numbers were allowed to grow back to their 4-5 million strong pre-whaling stock, this has the potential to add significantly to the amount of phytoplankton in the oceans and to the amount of carbon they capture per year. At a minimum, even a 1 percent increase in phytoplankton productivity due to whale activity would capture hundreds of millions of tons of additional CO₂ per year, equivalent to having 2 billion mature trees suddenly appear every year. Keeping in mind that whales, on average, live over 60 years, this is truly a gift of life that keeps on giving!

A big reason why protecting whales could add significantly to carbon capture is that the current population of the largest great whales is only a small fraction of what it once was. Sadly, due to decades of industrialized whaling, biologists estimate that overall whale populations have been reduced to less than one fourth of their numbers and for some species, like the blue whales, to only three percent of their previous abundance. Despite the end of commercial whaling, whales still face significant life-threatening hazards including ship strikes, entanglement in fishing nets, waterborne plastic waste and noise pollution. While some species of whales are recovering—slowly—many are not. Thus, because their surviving populations are small, the benefits from the whales' ecosystem services to us and to our survival are much less than they could be. And beyond the loss of carbon sequestration, low whale populations also have a depressive effect on ecotourism and fisheries, two industries estimated to generate hundreds of billions of dollars of economic activity. Given that in many cases the beneficiaries of whale-related industries would be low-income states such as Gabon and El-Salvador, this represents an especially costly missed opportunity for economic development.

In short, enhancing our protection of whales from man-made dangers delivers benefits to ourselves, the planet, and

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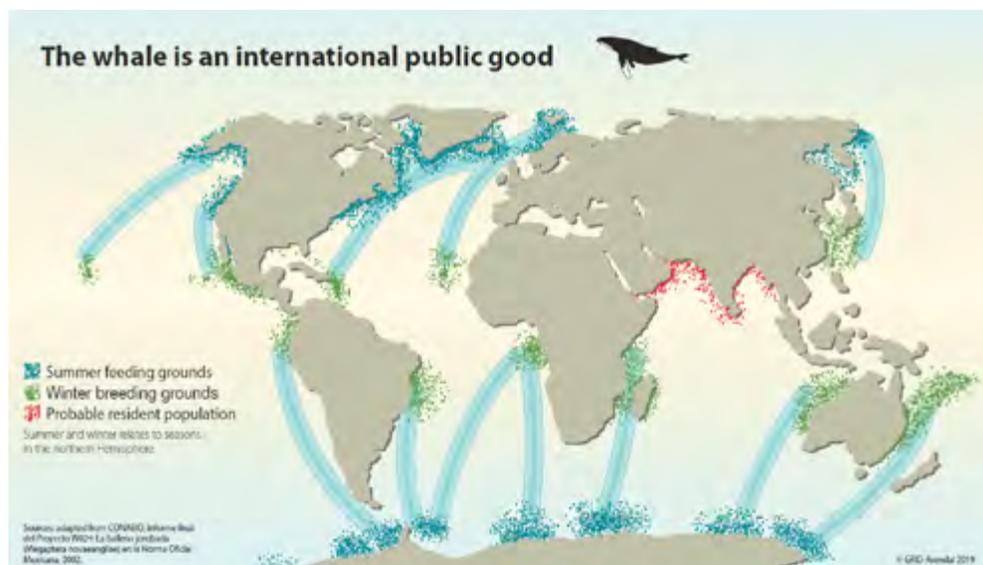
of course, the whales themselves. This “earth-tech” approach to carbon sequestration can also avoid the risk of unanticipated negative effects from untested high-tech fixes. Nature has had millions of years to perfect her whale-based carbon sink technology. All we need to do is let them live.

Now we turn to the economic side of the solution. Protecting whales has a cost. Mitigating the many threats to whales involves compensating those entities causing the threats, a group that includes countries, businesses and individuals. In order to ensure that this approach is practical, we must determine the monetary value of whales.

Whales are an International Public Good

Whales migrate thousands of miles each year between seasonal feeding areas in the high latitudes and their calving areas in the low latitudes. Thus, no one country can claim ownership or responsibility for any specific groups of whales. Indeed, because whales produce climate benefits that are dispersed literally all over the globe, they produce a positive externality for all societies. And because each person benefits from the existence of whales without diminishing the benefits that other people receive from them, they are a classic public good. In fact, they are truly an “international public good” because they visit many countries each year. This means that whales are affected by the classic problem of the “tragedy of the commons” that afflicts public goods and the producers of positive externalities: no individual who benefits from them has enough incentive to pay their fair share to support them.

In order to solve this international public goods problem, we must first ask, what is the monetary value of a whale? With every externality, proper valuation is warranted if we are to galvanize businesses and other stakeholders to save the whales. Our conservative estimates put the value of a single whale, based on its various contributions, at over 2 million US dollars, and easily over 1 trillion US dollars for the current stock of whales. The 2013 market price of a whale’s meat was about 24 thousand dollars, in countries where it is part of the national diet. Clearly, this market price does not factor in the positive externality that whales provide to our own survival. If it did, the price would be prohibitively expensive, likely driving demand for whale meat in those countries to zero.



Nature



But how to tackle the myriad of other dangers to whales, such as ship strikes, entanglements, noise pollution, and plastics in the oceans? Luckily, economists know how these types of problems can be solved. First, incentives in the form of subsidies or other compensation can be given to those who would incur significant costs from making considerations for whales. For example, shipping companies can be compensated for the cost of altered shipping routes or transit times needed to reduce the risk of collisions. Just as the Reducing Emissions from Deforestation and Forest Degradation program (REDD) is designed to promote forest carbon storage in developing countries through financing mechanisms, a financial facility for protecting whales and other “blue carbon” natural assets could also be developed.

How much do we Value Our Next Breath?

These general solutions, however, raise specific questions that are especially tricky to answer. Exactly how much should we be willing to spend on protecting the whales? We estimate that, if whales were allowed to grow back to their pre-whaling numbers, it would cost less than \$13 dollars per person per year to subsidize these whales’ CO₂ sequestration efforts. But how should this cost be allocated across countries, individuals, and businesses? On the other side, how much should each individual, company, and country that must bear some of the cost of protecting whales be compensated? And who will oversee the compensation, and monitor compliance with the new rules? Another important issue is the time frame needed to mobilize our response. With the consequences of climate change here and now, there is no time to lose in identifying and implementing new methods to prevent or reverse harm to the global ecosystem. But this strategy depends on improving the protection of whales so that their populations may grow more quickly. Even if new steps are taken to prevent unintentional killing of the great whales, it would take at least 30-50 years for them to double their current number. Clearly, we have no time to waste. We must get started as soon as possible to promote the recovery of global whale populations. Society and our own survival can’t afford to wait this long.

Nature

A new mindset -

What is needed is a new mindset—an approach that recognizes and implements a holistic attitude towards our own survival, living within the bounds of the natural world. While whales are not “our” solution, having inherent value of their own and the right to live, a new mindset recognizes and values their integral place in a sustainable ocean and planet. Healthy whale populations imply healthy marine life including fishes, seabirds, and an overall vibrant system that recycles nutrients between oceans and land, improving life in both places. The “earth-tech” strategy of enabling whales to return to their previous abundance in the oceans could lead to significant benefits not only to life in the oceans but also to life on land, including our own.

Coordinating the economics of whale protection must rise to the top of the global community’s climate agenda. Since whales play an irreplaceable role in mitigating and building resilience to climate change, their survival should be integrated into the objectives of the 190 countries that signed the Paris Accord in 2015 for combating climate risk. The IFIs, in partnership with other U.N. and multilateral organizations, are ideally suited to advise, monitor, and coordinate the actions of countries in protecting whales. The IMF and the World Bank are well placed to help governments integrate the macroeconomic benefit that whales provide in mitigating climate change, as well as the cost of measures to protect the whales, into their macro-fiscal frameworks. As to how soon this enhanced program to save the whales should begin, the following poignant reminder by the Reverend Martin Luther King, Jr. looms large: “The Time is always Right to do what is Right.”

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Nature



Humpback breaching



Humpback feeding



Blue Whale Fluke

(All photos courtesy of Michael Fishbach, GWC)

Nature

Australian Bird Photos by Nitya

These birds are common in The Blue mountains, a couple of hours West of Sydney.



The yellow and white bird is a sulphur-crested cockatoo; it may live for 40 years. In the foreground is a male king parrot.



The female king parrot is not as brightly colored as the male.

Nature



These kookaburras are kingfishers. They eat mainly small lizards but can also tackle snakes. They are famous for their distinctive laugh.



Nature

Cairns at Fort Worden, Pt. Townsend by Karuna

I had never heard about cairns until I was preparing Shawn's article for the [September Green Friends Newsletter](#). I asked him about them and later looked cairn up on Wikipedia. The description I read on that site said:

A cairn is a man-made pile of stones. The word cairn comes from the Scottish Gaelic: càrn. Cairns have been and are used for a broad variety of purposes, from prehistoric times to the present. In modern times, cairns are often erected as landmarks, a use they have had since ancient times.

Towards the end of September, my brother and sister-in-law visited Port Townsend and I met them there. When we walked towards the Fort Worden lighthouse, we saw some cairns.



While I assume that these were more a form of art rather than a landmark, I enjoyed knowing that they had a name. I especially liked that I had learned about them in the PNW GreenFriends Newsletter!

Nature

Inch By Inch by Lin

The glory of a sunny fall day in Seattle has made me lazy, so I'm not ready to retreat indoors to the chores that are calling. Instead, I've driven to the lake's edge to watch dusk advance. A bird skims low over the water searching for a last snack before bed as my mind drifts back over the day.

It began with a morning walk along Lake Washington with a friend. The crisp air was full of cedar-scent from towering evergreens, and the soothing sound of lapping water. The lake's clarity revealed rounded rocks beneath the surface and pebbles along the shore. Mt. Rainier's snowy peak rose in the distance. Crisscrossing contrails from military planes maneuvering high overhead painted white streaks in a faded blue sky. Autumn yellows and a few reds decorated leafy trees. I zipped up my jacket against chilly breezes when my companion and I stopped to rest on benches now and then along the way. Several adorable dogs were walking their people, making them stop for good smells.



Photo Credit: Sheila Sund on [Wikimedia](#)

My friend and I came across a father and his young children crouched low to marvel at the cuteness of a woolly bear caterpillar inching across the trail. We bent down to join them, enthralled with innocent wonder—wide eyed, just like the kids. The furry maroon band around the caterpillar's middle glowed against its dark fur, front and rear. When I got home, I looked it up on the Internet and learned that folklore says woolly bears forecast the weather.

If the caterpillar's orange band is narrow, the winter will be snowy; conversely, a wide band means a mild winter. And fuzzier-than-normal woolly bear caterpillars are said to mean that winter will be very cold. As temperatures drop, they go into hibernation, choosing a sheltered spot in a fallen log, under a stone, or another good winter hiding place where they can spin a cocoon. Woolly bears produce a kind of antifreeze that protects their organs and other soft tissues while the rest of the caterpillar can freeze solid over the winter. Because of this, they can survive temperatures as low as -90 degrees Fahrenheit. In spring, the caterpillars emerge as Isabella tiger moths—recognizable by their yellowy-orange coloration, black legs, and little black spots on wings and thorax.



Photo Credit: Wildreturn on [Wikimedia](#)

As interesting as this was, I found myself more taken with the innocent awe and fascination I'd experienced on the park's path as our little group hovered over the woolly bear and watched him slowly make his way to the place for metamorphosis that nature had in mind for him. Watching, I had felt a little of that inching along to metamorphosis myself.

Nature

Retirement and the natural slowing down that comes with aging are helping me remember to savor the beauty of nature and small pleasures such as this caterpillar—and to remember that I too am crawling slowly forward in response to life’s rhythm, headed for a metamorphosis I can’t even imagine—one that surely hinges on reclaiming the childlike innocence, the joy and the wonder that are hidden inside each of us as a divine spark.

And now, like the bird flitting along the lake’s surface, I’ll have a snack before bedtime, then tuck myself in for the night like a woolly bear. Perhaps tomorrow morning there will be frost on the neighbors’ rooftops when I open my laptop once again to record and marvel at a new day.

Interesting Information from Our Readers

From Karuna in Seattle:

[Stop recycling plastic bags, Seattle. Also could you do us a favor...](#)

[Bring These Items to a Drop-off Location for Recycling](#)

From Lin in Bellevue:

<http://www.brendapetersonbooks.com/blog/> (scroll down in the blog to read Brenda Peterson’s essay “Orca Choir.”)

[Could We Recycle Plastics Into Roads?](#)

From Poornima in Bellingham:

[As Sea Levels Rise, So Do Ghost Forests](#)

Tree Planting and Habitat Restoration

Portland Satsang Tree Planting Day by Bhagavati



On Saturday, October 12, for the third year in a row, Amma’s Portland Satsang partnered with Friends of Trees and joined in a volunteer effort to get 880 trees, shrubs, and wildflowers in the ground in just 2.5 hours! Sevites spent the morning planting along the beautiful Tualatin River Greenway which runs through Brown's Ferry Park, which is located on the banks of the Tualatin River. Satsang members also helped spread 3 cubic yards of mulch to support the tree babies during the future months of heat starting in June.

Thanks to everybody who supported this TREEmendous effort. Jai MA!



Tree Planting and Habitat Restoration



Tree Planting and Habitat Restoration

One Way to Take Climate Action:

**Ask your city for what you want. You might just get it.
(If not, keep asking!) by Tirtha G.**

If you think talking to city council is a waste of time, I understand. That's how I used to feel.

But in the past year, our local tree advocacy group successfully lobbied Victoria's city hall to change our Tree Preservation Bylaw.

Since 2005, a Victoria homeowner could choose to cut down any tree on his or her property, if it had a diameter of less than 80 cm (31.5 inches). To remove trees larger than that, owners had to apply for a city permit, which might be granted or not, depending on the reason (e.g. to build a house, or because they didn't want to rake leaves).

Our group wanted the bylaw to protect trees starting at a much smaller size. We were amazed when council listened, and a majority voted to change the bylaw!

We have also successfully asked council to increase its Parks budget (to take better care of trees). Later, we were invited to meet regularly with the Parks department staff, and over time we've gained a reputation as a voice for trees in our region.

Our tree advocacy group started just over a year ago, when three strangers were introduced to each other due to our common concern for the urban forest. Over this past year we have grown to an active group with a core of about 10, a mailing list of 260, and a widespread Facebook following of 600.

Our members first lobbied Victoria city council to start protecting trees when they reach a diameter of 60 cm (23.6"). Then we asked them to go farther: to protect trees that were half that size. If the newest proposed change passes fourth reading in mid-November, we will have succeeded. And we will celebrate! Because this was not an instant win. "Don't stop pushing," a councillor from another city once told me. "Your steady pressure is exactly what city council needs from the tree-loving public." She also told me that a tree advocate in her town "has done amazing work to get us to where we are at, and she's by no means finished with us yet."

Over the past year, members of our group have indeed pushed, pretty steadily. We have written many letters to the mayor and council. We have also circulated template letters to all our email contacts so people could copy, paste and personalize their own emails to council. Some of us have spoken to council several times. We have written letters to the editor, one or two op-eds, and sent out media releases on tree issues.

We shared information about the great value and ecological importance of trees, and persistently urged council to enact better tree protection bylaws. Council was courageous enough to make this move -- against the advice of Parks staff, who suggested first undergoing an extensive year-long public consultation. Consultation is seen as a

Tree Planting and Habitat Restoration

wise move in implementing big changes such as this. But we argued that the need for climate mitigation requires urgent action now. Fortunately, the council agreed.

Not everyone will support this change. It will create a huge amount of work for staff, and many residents will be inconvenienced by much longer waits during the permit process. Some people will be angry to find they are no longer legally able to remove their trees if they feel like it.

But this change was long overdue. Nearby municipalities protect trees from diameters of 30 to 60 cm, while Vancouver protects all trees over 20 cm (7.8”), and Port Coquitlam this year moved to 15 cm (5.9”).

Recent studies have shown that planting trees and preventing deforestation are among our best tools for climate mitigation. But trees are worth protecting for so many more reasons than carbon sequestering!

Studies show that living and working near trees benefits our mental and physical health. Trees create oxygen and clean the air. They reduce flooding. They help prevent soil erosion. They buffer sound up to 50 percent. Their presence can greatly reduce the force of wind.

One of our members had long experience working in a regional administration office. “They can’t do anything if they don’t have a budget for it,” she told us. So when budget time rolled around last year, that’s when we pressured council to allocate sufficient money to parks.

We asked them to provide funds to implement Victoria’s detailed and ambitious Urban Forest Master Plan, which had been approved in 2013, and which decorated the city’s website but did little to inform practices. Amazingly, council came through with a \$1 million addition to this year’s parks budget for that purpose.

We’ve also worked in other ways to raise public awareness about the incredible value of trees. We’ve hosted several public tree-related talks, including one by an internationally known professor of urban forestry – Dr. Cecil Konijnendijk from UBC gave a fascinating presentation to a full house. We also inform people about trees being removed, share interesting tree articles, and celebrate wins on our website and Facebook page.

When one beloved tree in the downtown core was removed, despite a great deal of public opposition, one of our members requested a Freedom of Information report. City officials had assured us that all alternatives to removing the tree had been explored. She found little to back up that claim.

However, instead of trying to shame the city about it, she wrote a detailed report and made nine recommendations to increase transparency and detailed consultation with the public. These were shared in a media release, which resulted in a newspaper article and an in-depth radio interview. She has attended some of our meetings with Parks staff to respectfully press for the changes suggested.

Tree Planting and Habitat Restoration

Advocacy can make a difference! We encourage you to step forward and help push your municipality in the direction it needs to go. It's not usually a quick fix. You may not feel you know what you're doing or how to do it. But it may well be one of the most effective actions you can take.

Many people have come to believe that governments don't care what we want. So we stifle our own voices, believing it won't make a difference. Yet governments and councils do actually want to hear what residents want. They spend big money on surveys and public consultations. Opinions received are literally counted and are reported to elected officials. If many people request a particular change, it can indeed affect policy decisions.

More councillors are feeling pulled towards climate mitigation. You have a voice, even if it quakes with fear. It's the council's job to listen to you. And if you are visibly nervous, they will also know this issue is so important that it forced you to speak up.

Things we learned over the past year:

- It can be heartbreaking and rarely works to pit yourself against the removal of a publicly-owned tree that has already been posted for removal. But if you're going to do it, go big. Start an online petition, with nice photos. Share it widely to neighbourhood groups and everyone you know. Write a letter to the editor about it. If you know a reporter, ask them to do a story on it. Door-to-door paper petitions can also be useful, because you can talk to people and may learn useful facts, especially in the immediate neighbourhood of the tree.
- Similarly, trees on private property that are not protected by bylaws can rarely be saved. However, you may have a chance to speak up for the trees when a development application goes to city hall.
- I have come to believe that no effort on behalf of trees is wasted, even if it does not succeed. You are raising awareness about trees. You are planting seeds in the minds of officials and the public. In time, you'll be surprised to find that some will grow and blossom in unexpected places.
- If you are unable to save a tree or trees, try not to despair. You have learned from the experience. That knowledge may well come in handy in the future.
- We have also held a public 'Goodbye and Thank you' for a large group of trees that were removed for development. Somehow it helps to share your feelings, love and appreciation for the trees with others who feel the same.
- Even if you feel sad, angry or frustrated, try to keep in mind that the staff and politicians you are talking to or about are most likely doing the best they know how to do in a challenging job. Persist in gently educating them. Offer win-win suggestions. Ask questions. Be reasonable. Settle (for now) for movement in the right direction.
- Educate yourself about the issues. It helps if you have read the relevant bylaws (usually posted on the municipal-

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ity's website) and can speak somewhat knowledgeably about them – especially when you're addressing council or writing letters, etc. But don't be afraid to admit that you're not an expert.

- Treat people with courtesy and respect. Criticizing people instead of policies is likely to close doors and polarize people. Try to find common ground.
- Spread the word. Make it easy for people who support the same goals to communicate with your municipality. Letters that individuals can copy, paste, and personalize, along with the email addresses to send them to, can be more helpful than simply asking people to write. People want to help, but they're busy.

If your city council does not respond well to your persistent efforts... you might want to think about who you can encourage to run for office in the next election. But in the meantime: speaking up works way better than staying silent!

Tree planting – a “mind-blowing” way to reduce CO2 by Tirtha G

Last summer, scientists released a report saying tree planting (as well as preventing deforestation) is the biggest and cheapest method of removing carbon from the atmosphere.

The scientists estimated that a world-wide planting program could remove two-thirds of the human-caused emissions in the atmosphere today.

“This new quantitative evaluation shows restoration isn't just one of our climate change solutions, it is overwhelmingly the top one,” said Prof Tom Crowther at the Swiss university ETH Zürich. “What blows my mind is the scale. I thought restoration would be in the top 10, but it is overwhelmingly more powerful than all of the other climate change solutions proposed.” Fossil fuel use still needs to be reduced as well, of course.

<https://www.theguardian.com/environment/2019/jul/04/planting-billions-trees-best-tackle-climate-crisis-scientists-canopy-emissions>

So, as the kids at Plant for the Planet say, let's stop talking and start planting!

Read about how to plant trees in the Oct. 2017 issue here: http://www.greenfriendsna.org/Downloads/GreenFriends_Newsletter_October2017.pdf (page 15-17.)

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Greenbelt Restoration Updates



Big things are happening in the GreenFriends Restoration project. This article highlights three of them.

Service-Learning Students

The Carlson Center at the University of Washington coordinates the University's service-learning programs. They describe service-learning this way:

Service-learning combines service in the community with structured preparation and reflection opportunities. Service opportunities are tied to academic coursework and address concerns that are identified and articulated by the community.

We had our first group of service-learning students during Spring Quarter 2019. This quarter, we have another group. The first time we had four students; this quarter we have six. Two of the students are taking ENVIR 100 Introduction to Environmental Studies, and four are taking Engl 121D Composition Social Issues (Environment). The students are working with us three hours a week for seven weeks. They are interested and enthusiastic and have already made a significant contribution to the project.

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Amazing Tree Growth

When we planted alder trees in November 2018, they were about four feet tall. Most of the trees are now around 5 ½ feet. This month we discovered down near the red twig dogwood area where we were working in most of the photos above, there was one alder that is 10 feet 4 inches and another that is 6 feet 5 inches. Astounding growth for one year. How big will it be this time next year?



Capstone Interns

We are in the process of picking two senior students from UW's College of Environment to intern at our site. The Capstone's Program is described this way:

Students majoring in Environmental Studies gain valuable professional experience and explore potential career paths through a 3-quarter Capstone Course Series which includes a quarter-long internship, study abroad experience or research with a faculty member. Students produce a written deliverable and tie this professional and hands-on component with their academic study.

The Capstone is usually centered around an internship with a community site partner. Potential Capstone sites range from local non-profits and government agencies to faculty research projects and private sector initiatives and the Capstone instructor organizes a "Meet and Greet" small career fair with site partners who have pre-selected projects for students to work on.

The interns will start their formal internship program in January 2020, but they will have the opportunity to start gathering required hours with us this quarter. They will become valuable members of our team.

Reduce, Reuse, Recycle

DIY Produce Bag Construction by Amritadivya

We all shop for food—at grocery stores, farmers' markets, and roadside stands. Which puts us in a perfect position to support the M.A. Center's global plastic reduction initiative. Inspired by Amma in India, the initiative strives for a goal of zero waste of material resources and elimination of the awful plastic waste that harms our environment.

There are signs of success. Plastic grocery bags have been greatly reduced or eliminated in many parts of the U.S. and elsewhere.

Next, we can eliminate plastic produce bags for our fruits and vegetables. They're made of "film plastic," a substance that often isn't accepted for recycling and ends up in landfills. Worst case, it washes into the ocean or clogs the world's waterways.

But what to use instead? Cotton muslin and mesh work beautifully.

For example, their use is encouraged by the M.A. Center Ashram at San Ramon, California, when they sell the apples, pears and other fruit grown on their grounds throughout the year.

The bags are sewn by volunteers, using 100% cotton muslin and mesh (costing less than a dollar per bag). Both fabrics are available in the utility fabric section of JoAnn Fabrics (a store that frequently has discount coupons available). A creative "recycle-reuse" cost-cutting approach is to make the bags from old clothing, scraps from other sewing projects, old cotton sheets, or fabric from thrift stores like Goodwill. Bear in mind that the less the fabric and cord weigh, the less weight will be added when a grocery checker prices your produce that's in the bag.

During Amma's summer tour in the U.S., finished bags were sold in San Ramon and Los Angeles. We need more volunteer sewers because the bags were popular and sold out quickly.

They're so simple to make that I'm offering sewing instructions here. For an excellent demonstration on making a quick and easy mesh bag, take a minute to watch this YouTube video. <https://youtu.be/2MTeAm-kAIdk>

My directions are for assembly by sewing machine, but the bags could easily be sewn by hand.



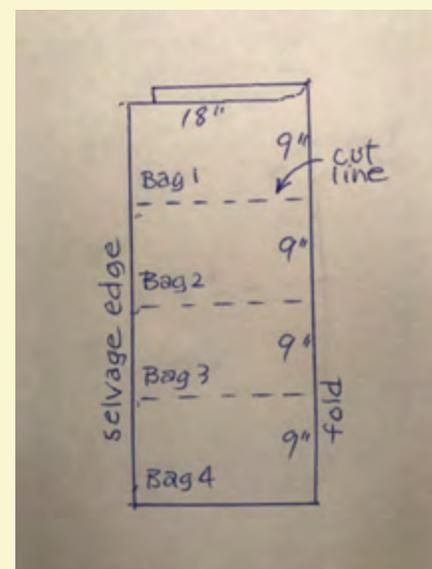
Reduce, Reuse, Recycle

Sewing Supplies – makes 4 bags 8" wide x 17" deep

- 1 yard muslin (36" wide)
- Thread
- 4 ½ yards cording for drawstrings (folded seam binding, ribbon, cotton yarn, embroidery floss, or fabric strips can work too)
- 9" x 18" piece of paper for a pattern (or mark fabric directly with pencil or sewing chalk)
- Pins, pair of scissors, ruler, pencil or sewing chalk, sewing machine, iron and ironing board

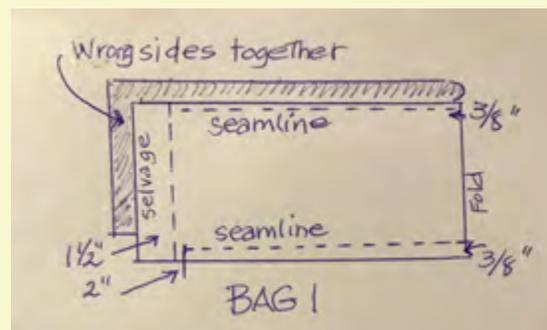
Layout and Cutting.

1. Your fabric will probably come off the bolt already folded lengthwise, with the wrong sides together. Since muslin looks pretty much the same on both sides, you can tell which side is the right side by checking the selvage edges. The more finished-looking weave is the right side. (If you're not familiar with sewing lingo, the right side is the side that will show when the bag is finished.)
2. Place the fabric on a large table or the floor. Check the cut ends to make sure they are straight across—i.e., running along a thread line and not at an angle. Once you've squared up the ends, you may need to stretch the fabric on a diagonal to make it lie perfectly square.
3. Pin the rectangular pattern piece in place horizontally across the fabric from selvage edge to folded edge—or simply measure and mark horizontal cutting lines if you want to omit making a pattern. (The selvage edges will be folded over later to make the casing for the draw string; the fold will serve as the bottom of the bag.)
4. Cut as shown so you'll end up with 4 equal-sized bags.



Construction – side seams.

1. Begin with Bag 1. On the wrong side of the fabric, use the ruler and pencil to mark a horizontal line across each end 1 ½" from the selvage edge. This is the edge that will form the drawstring casing.
2. Turn the fabric over and fold it so the wrong sides are together and make a mark on each side 2" from the selvage. Then draw a 3/8" seamline from that point to the bottom of the bag (the fold-line). Pin across each side-seam.



Reduce, Reuse, Recycle

3. Starting 2" below the selvage, sew the side seams to the bottom of the bag. To avoid dulling your needle, remove pins as you go, rather than sewing over them.
4. Turn the bag inside out and press the seams flat with an iron. Then flatten the bag so the sides are creased along the seamlines. Press again and pin the sides together.
5. Using ruler and pencil, mark a seamline 1/4" from each side of the bag (the object is to make a seam that will enclose the raw edges of the first seam—a French seam in other words).
6. Starting again 2" below the selvage, sew the side seams to the bottom of the bag (beginning and ending with a backstitch to secure each end).
7. Turn the bag right side out and press the seamlines.



Construction – drawstring casing.

1. Hem the flaps' side edges by turning them under and pressing them flat with an iron.
2. Fold each flap down (wrong sides together) to the line you drew 1 1/2" from the selvage. This creates a 3/4" tube for the drawstring. Pin in place.
3. Sew along close to the selvage edge all across each flap. If you wish, sew a second line parallel to the first to reinforce the casing.
4. Where the flaps separate on each side, do a tight zigzag stitch back and forth to protect the side seam from splitting.



Inserting the drawstring

1. Cut two 20" lengths of cord (or whatever you're using for a drawstring).
2. Attach a safety pin to the end of one cord and use it to slide the cord through the casing of each flap so the ends come out facing the same way. Join the ends with an overhand knot.
3. Attach a safety pin to an end of the other cord and thread it through the casing going the opposite direction. Join the ends with an overhand knot. You now have a knot on each side of the casing. When you pull them away from each other, the bag will draw itself closed.

Reduce, Reuse, Recycle

You now have a finished bag.

The M.A. Center would like to have more volunteers making these bags to sell in the Amma Store and at the GreenFriends table during Amma's tours. If you're interested, please contact janelle1@sonic.net.



PNW Litter Project

In October 2019, **32** Litter Project members and their friends picked up litter for **65.9** hours. (Average **2.1** hours; Median **1** hour; Range **2** minutes to 10 hours) We have picked up litter for **10,938** hours since the project began in July of 2011.

TerraCycle Stats

There were **2600** energy bar wrappers in the box we sent TerraCycle in September 2019. That brings our totals to **355,724** cigarette butts, 394 drink pouches, **1,748** cereal bag liners, and **6,747** energy bar wrappers since we started sending items to TerraCycle in 2013. [TerraCycle is an organization that recycles items which are normally considered unrecyclable.]