SEALOEarth

Serene Environment And Life On Earth

A world in which all people participate in the stewardship of planet Earth.

NEWSLETTER

Earth Day 2015

"The indigenous understanding has its basis of spirituality in a recognition of the interconnectedness and interdependence of all living things, a holistic and balanced view of the world. All things are bound together. All things connect. What happens to the Earth happens to the children of the earth. Humankind has not woven the web of life; we are but one thread. Whatever we do to the web, we do to ourselves."

~ **Rebecca Adam**, founder of the First Nation's Development Institute

INSIDE

We hope that you will enjoy reading this newsletter!

Celebration of Earth

Westford, Massachusetts

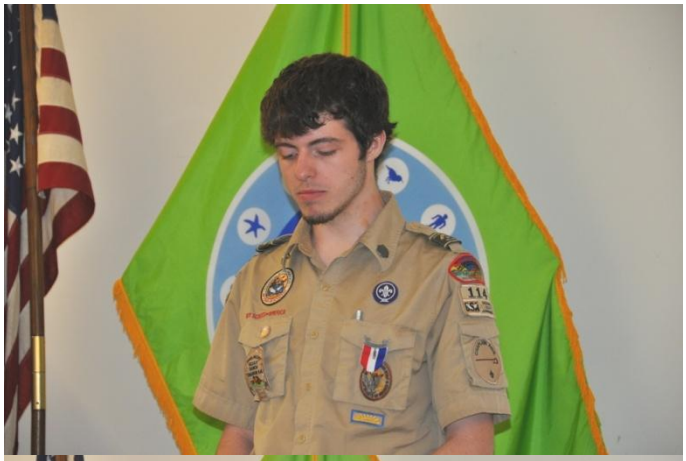
Earth Day was celebrated at the J V Fletcher library in Westford, Massachusetts on Saturday, May 2nd 2015.

The Acapela Men's Quartet sang "Peace on Earth". Ms. Lynn Tyndall was the master of ceremony and she also presented an activity on "Connecting to Places". Eagle Scout Andrew Keir gave a presentation on "International Scouting" and Scout Justin Michael spoke on "Leave No Trace".

The keynote speaker was Ms. Ellen Harde, Moderator, Town of Westford. She addressed the audience about Westford - its natural resources and how the residents can help out. Ms. Harde also gave away the certificates to the winners of the essay contest.

Priya Iyengar of Westford Academy read her essay titled "No Supreme Authority: Just Elaborate Connections".

To heighten the awareness of the bees dying worldwide, a packet of seeds of flowers were given away to all the people who attended the celebration. It also served a dual purpose - enjoying the flowers and being friendly towards the bees at the same time.



Winners of the Global Essay Contest 2015

We had wonderful essays from three countries across three continents. The essays were scored by our international panel of judges.

Youth (ages 9-12)

Manasvi Iyengar (Massachusetts, USA)	1st
Anurag Pathak (New Jersey, USA)	2nd

Junior (ages 13-17)

Priya Iyengar (Massachusetts, USA)	1st
Ethan Mendes (Massachusetts, USA)	2nd

CARE: Cleanup And Recycle Events

San Diego, California

Chelmsford, Massachusetts

Westford, Massachusetts

The cleanup event was during April 18-26, 2015. Volunteers in several towns cleaned up public places such as beaches, parks, and sports fields.

In San Diego, California, the Highland Ranch Park was cleaned up by all members of a family along with grandparents and the baby.

In Chelmsford, Massachusetts, the Mother's Group cleaned up Varney Park.

In Westford, Massachusetts, a group of volunteers cleaned up Edwards Beach, Forge Pond Beach and Hamilton Field. One of the parents who had brought their child to the playground appreciated the cleanup work and said "Thank you".

When a volunteer was picking up trash at the beach, a group was fishing and one person asked "Do you get paid for cleaning the beach?" When the volunteer replied "no", he said "You are a good guy. Thank you for doing it."

Connecting with Places

Lynn Tyndall

A short time ago in human history, we were much closer to the places where we live. We named our corners. Here in Westford, MA, I live near Cowdry Corner and there is Elm Corner, Harmon's Corner, Minot's Corner, Tyng's Corner and many more. When we walked or rode horses everywhere, we spent most of our time on the land where we lived or in our town.

As we adopted motorized transportation, our days began to spread over a larger and larger area and now we whiz by most of the places we frequent, barely noticing them. We may take notice of a rose in bloom or a tree ablaze with fall color, but most of the time we hurry by.

If you want to connect with a place, you first have to slow down. In fact, connecting works best if you stop and sit.

Every single place on the planet has a history and unique characteristics. No matter how small or large a place you decide to explore, it has a geologic history, a botanical history, a political history, a cultural history, and a social history. John Hanson Mitchell in his book, Ceremonial Time: Fifteen Thousand Years on One Square Mile, explores one square mile of Littleton, Massachusetts, documenting its history from the Ice Age to the present time. He shows us that any place, however small, can be explored deeply.

You connect to a place in three ways: by observing, by learning from others and by exploring with your imagination. All three offer unique opportunities for growing your awareness and connection to where you live or to the common spaces near you. It is best to pick a place that is close enough to your home so that you can visit frequently and at different times of day.

Pick a spot that feels special to you. If it is in your yard, then you have unlimited access to your spot. When you first start to spend time there, start by taking note of what you observe and the time of day and the date. Notice the sounds and smells and note any plants, insects, birds or other wildlife you see or hear. Try to visit your spot for at least 15 minutes multiple times during every week. You can observe the stars in the evening and document any changes you notice season to season. If your spot is in your yard, you can place a comfortable bench or seat there. Take photos. A small notepad with a waterproof cover is helpful for your running observations. If you continue to visit over time, you will find that the same birds and insects appear annually on nearly the same day of the year.

As you get more familiar with your spot, you can begin to learn from others. Wildflower and plant books can help you identify what is growing there and you can learn about the geology and history of where you live, as well. You can learn to identify the insects, birds and mammals that visit you. Your town library will have local history resources. You can reach out to neighbors who have lived nearby for a long time and ask them to tell you what they know about your place.

Finally, and perhaps most importantly, you can connect with your spot through your imagination. Since your spot has a long history, close your eyes and imagine you are traveling back through time. Pick a time to stop and imagine what your place was like at that time. What sounds would you hear? What smells? If there were people there, what did they look like? What activities were they doing?

You can continue back through time in your imagination until you reach a time when there are no humans. What is your place like at that time? How is the air different? How would the sun feel on your skin? You can also take your imaginary time travel into the future.

You will find that the more you use your imagination in a place, the more alive it will seem to you and the more it will mean to you. Capture your imaginary experiences in drawings, stories, songs or dance, or just make a few notes so that you don't forget what came to you.

If your spot is in your yard, I would also like to encourage you to find a second spot within some of the public space that we share, in a park or conservation area, or even on the grounds of your library or town hall. You can't place a bench there, but you can still visit frequently and tend even a few square feet of our common ground. Finding a place in a large park, by a pond or along a trail will provide even more opportunities to encounter wildlife, and if you make time to visit frequently, you will slow down enough to really connect with your heart and come to understand what is truly special about your place and your community.

Post your experiences in your spot:

https://www.facebook.com/communitycarekeepers

No Supreme Authority: Just Elaborate Connections

Priya Iyengar (16)
Massachusetts, USA

A small-statured Egyptian plover bird, with its black crown and white head, was flying around in the air beautifully. Nearby, in a swamp a majestic Nile crocodile was lying with its mouth wide open, revealing the savage dental structure inside. The plover soon flew over towards the open mouth without any apparent fear and the crocodile did not attack it either. Its open mouth invited the bird to pick at the rotten meat stuck in between its teeth and scavenge an entire meal out of it. Not being able to use toothbrushes or dental floss for obvious reasons, the plover was the only way the crocodile could have a tooth cleansing, without which it would be suffering from some pain. After it had its fill, the Egyptian plover flew away completely unharmed; and the crocodile continued its activities. As bizarre as this symbiotic relationship may seem, both advantaged from each other. The little bird and the huge, ferocious crocodile were both on the same level and no end had an upper hand.

Such fascinating interactions between the millions of different species can be seen in several forms on the earth. Even just imagining the complicated, intertwined and unexpected links in the ecosystem exceeds human capabilities, but it must be acknowledged that the links exist and are an important part of life on earth. Individuals of a species could not exist without each other, and different species could not survive and sustain without one other. The profound conclusion reached here is that in the world's ecosystem, all organisms need one another on this pale blue dot, our small home we call the Earth. When such a situation exists, no species can be superior and none inferior. The ecosystem knows no sovereignty or supreme authority, which can be seen through several organisms.

With slender and streamlined body, a salmon is going upstream to spawn or reproduce. But in this moment of weakness and visibility, where it is fully out of the water and focused only on going upstream, it is caught immediately off guard by the grizzly bears, looking hungrily for food. Struggling in the hold of the bear between its sharp teeth, it soon dies. Carried out into the woods, about thirty meters away from the river by the bear, the pinkish-orange flesh of the salmon is torn and eaten; the remaining parts are left on the forest floor, amongst tons of other fish carcasses. Soon, the nutrients from the decomposed body of the fish seep into the ground, helping the trees and other plants in the forest to truly flourish. In fact, 85% of the tree materials end up obtaining salmon nutrients; so essentially, the entire forest is made by the ocean. Many animals get shelter and survive off these plants and trees including bears, birds and flying squirrels.

A flying squirrel glides through the forest flawlessly to find truffles, fruiting bodies of fungi, and eat them. With pungent smell and appearance resembling rough-skinned potatoes, the fungi have an excessive network of fungal treads underground that join most of the plants and trees in the locality in a web, exchanging nutrients and interacting in such ways constantly. This network is being made possible by dispersion of its spores that the squirrel brings about while "flying". More trees and plant roots get included in the link

and the fungi gains nutrients from them all. As winter approaches, the trees use fungi like an extension of their roots and the fungal threads help in absorbing nutrients from deeper in soil; all involved benefit in one way or another. Quite similar is the situation with lynx and a snowshoe hare.

A peculiar animal, a snowshoe hare is an expert in camouflaging and turns white in winter, brown in spring, reflecting the color of the environment generally at the different times. It so happens that the stealthy and fast-moving hares form 80% of the lynx's diet, so to lynx's rescue come caterpillars of spruce moths. Of all the organisms that could possibly be thought of helping the lynxes catch their prey, it is very surprising that it is just these tiny, voracious eaters that do so. Devouring parts of the canopy and allowing increased amount of sunlight to fall on the forest floor makes small plants like spruce and fir grow. The plants can then be ingested by the hares; but amongst the green grass and with its undivided attention towards food, it becomes vulnerable and easily attacked by lynx, which can now easily find and attack its distracted prey. The caterpillars provided food, shelter for hare and food for lynx as well.

So, here is the neat connection apparent between all these situations: The salmon was caught by the bears, keeping salmon population in check and it left parts of it to decompose and return to soil, that made the plants grow well. The flying squirrels moved from one tree to another, dispersing spores and increasing the web of the truffle fungi, benefitting all the joined plants and trees. The caterpillars in the trees feed on the leaves, helping sunlight reach ground and grow small plants, on which snowshoe hares feed. During the process, lynx find and attack hares, and even they get their food. So, starting with salmon, we reached the lynx. The connection does not stop, it never does. The entire life support system of the elaborate connections always remains, and it always should, for the welfare of all organisms on earth.

Somewhere in the loop also fall the humans, who have a false pride of being the most special and dominant of all. Overhunting, deforestation, land transformation including desertification, urban development, etc. are all human activities that have impacted the natural ecosystem. When the bear population is decreased due to hunting for instance, the salmon population is not in check and the nutrients do not reach the trees. Eventually, flying squirrels and caterpillars, thus by extension truffle fungi, hares and caterpillars are all negatively affected. The repercussions of the actions of humans are felt greatly by the others in chain. But, nature never intended for humans to be the greatest species of all, to intervene in the links as per whims. While we often benefit by the plants, trees and animals by gaining food, some material for clothing or shelter etc., we cannot make ourselves the authority, as it will in the end hit us back and prove disastrous.

Now, imagine any organism in any corner of the world and its encounters in nature: a plover, crocodile, salmon, bear, flying squirrel, truffle fungi, lynx, caterpillar, snowshoe hare, plants or simply humans. One shall only find that no being has any weight over another and no right to yield authority over other species. In the grand scheme of things, earth is a tiny heavenly body, merely a speck. Yet it houses a myriad of living organisms, and what is more beautiful about it is that there is no end authority, no species has the final say, only elaborate and elegant connections. Therefore, maintaining the fine, strong link between all the species is integral and the entire ecosystem knows no sovereignty, so these several different connections are needed, and should become the responsibility of all beings on earth.

Works Cited

1. BBC Documentary-The Magical Forest. By Wallace Koh. YouTube. Web. 1 Mar. 2015. <https://www.youtube.com/watch?v=z_hrAyK6FDA>.

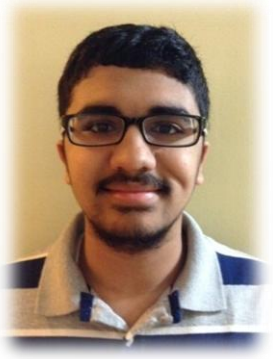
2. Carl Sagan - Pale Blue Dot. By Carl Sagan. YouTube. Web. 1 Mar. 2015. <https://www.youtube.com/watch?v=wupToqz1e2g>.

3. "Nile Crocodile and Egyptian Plover Bird." Symbiotic Relationships. Web. 1 Mar. 2015. <http://animalsymbiosis.weebly.com/nile-crocodile-and-egyptian-plover-bird.html>.

4. State of the Planet with David Attenborough. Prod. Rupert Barrington. Ed. Jo Payne. By BBC. YouTube. Web. 1 Mar. 2015. <https://www.youtube.com/watch?v=6lkKlv1aWd4>.

5. TED Talks. Allan Savory: How to Green the World's Deserts and Reverse Climate Change. YouTube. 4 Mar. 2013. Web. 1 Mar. 2015. <https://www.youtube.com/watch?v=vpTHi7O66pI>.

Ecosystem: A Natural Symbiotic Relationship with No Sovereignty



Gaurav Pathak (16)
New Jersey, USA

The Earth Is home to 10 million different species and it remains relatively stable in condition due to the interdependence of many of these different living beings. Ecosystems represent a group of interconnected species that rely on one another in order to survive and prosper. Although it may seem odd how two possibly very different living things may actually be dependent on one another for survival, the various ecosystems of the world act in very complex ways so that life can maintain its balance. Many factors such as food, shelter, space and water are universal needs for every life form, and the actions of each individual living being has an effect on these needs. Since the world does not have unlimited resources, (water, food, shelter and space) populations of animals cannot exponentially grow forever. Certain limiting factors, such as predation and disease, can limit these populations and cause species to adapt and/or become dependent on one another for survival. Each of these limiting factors plays a major role in sustaining ecosystems and making sure that a balance of life on earth is maintained. For these reasons, the "world's ecosystems know no sovereignty" because ecosystems are really intricately interconnected relationships between all living things in a given environment.

When analyzing a simple woodland ecosystem, we can see how the balance of life is kept and how it can be jeopardized when wrongful human intolerance occurs. Woodlands areas are common habitats to various animals, but we will consider the white-tailed deer first. The white-tailed deer is a herbivore and its diet changes depending on the type of woodland forest and the season of the year. During the spring and summer months, the deer feasts on green plants and during the winter, it mainly consumes the buds of various deciduous and other trees. A couple of natural predators to the white-tailed deer are mountain lions and wolves. For many years, the populations of these three animals remained relatively stable as they would act as limiting factors on one another, until humans started overhunting and spoiling the woodland habitat (by encroaching upon it, cutting down the trees and dumping waste). This eventually led to a smaller habitat, and more competition for the natural species to survive. Also, the mountain lion and the wolf populations were severely affected, and the populations of both animals dwindled. As a result, the predator-prey relationship in this ecosystem was disturbed, as the predator populations decreased, the prey population (deer) increased. This is so because there are fewer animals to keep the deer population in check. Although one might think this is great for the deer, this may actually be detrimental to the deer population. A larger deer population would mean more competition, and more use of the natural resources of the ecosystem. This increase in deer population will inadvertently lead to the destruction of many green plants (for consumption), and the animals may starve in the end. Thus, this may affect green plant populations and various other populations that were not even directly related to the mountain lion and wolf populations. In addition, a higher population in a limited location means an increased population density, which has its own set of problems (quick spread of disease, even more competition for natural resources). In the end, the deer population may not survive for long, and will destroy the balance of the ecosystem that they live in. A human action (cutting trees and overhunting the deer population predators) can in turn set off a "domino effect" and in the end could only hurt ourselves. As an American Indian Rights Activists and founder of the First Nation's development Institute, Rebecca Adamson once said that," The indigenous

understanding has its basis of spirituality in a recognition of the interconnection and interdependence of all living things, a holistic and balanced view of the world. All things are bound together. All things connect. What happens to the Earth happens to the children of the earth. Humankind has not woven the web of life; we are but one thread. Whatever we do to the web, we do to ourselves." This quote from Adamson shows how a simple action can have many different effects. This shows how interdependent ecosystems around the world are, and how each selfish action (such as deforestation, overhunting) can inadvertently affect us because we too are a part of this intricate web of life.

Furthermore, we can understand how interdependent our ecosystem is when we realize how potent invasive species can be. Invasive species can be any animal that is introduced to a new ecosystem that it was not originally from. Invasive species may seem innocuous, and they need not be a carnivore to wreak havoc, however they can completely destroy ecosystems. In fact, "approximately 42% of Threatened or Endangered Species are at risk primarily due to invasive species" (nwf.org). This shows us how interdependent our ecosystems are in its constituents, and the fact that a new invasive species can create such an imbalance proves how interconnected and important each part of an ecosystem is to the health of the ecosystem. Invasive species pose server direct and indirect problems in an ecosystem. For example, they can affect an ecosystem by preying on native species, out competing native species, and spreading diseases. In the long run, "this can destroy food webs, decrease the biodiversity of an ecosystem and change the environmental conditions of an ecosystem" (nwf.org). Invasive species are usually introduced to new niches due to human ignorance. Many invasive species, such as Cogon grass and Zebra mussels, were brought to new ecosystems because of trade from different parts of the world. Although it is impossible to be 100% certain that such species are not transmitted to new environments by trade, we should be more careful in the future in order to preserve and maintain our current ecosystems. In order to display the destructive behavior of invasive species, we can consider Zebra Mussels. Zebra Mussels are freshwater mussels that were first introduced to the US (in the Great Lakes area) from ships from Europe. Since then, these mussels have been multiplying in number quickly and have out-competed many native species for food and space. They also cause much damage to neighboring communities because they often clog water intake and other pipes, and they spread quickly because they attach themselves to ships and transportation (and thus spread to different ecosystems rather quickly). Since most of the predators of the Zebra Mussel do not exist on the North American continent, their populations increase quickly, and they soon out-compete native mussel species for food (as they have no predators to keep their population in check). Many fish species have dwindled since the Zebra Mussel was first introduced, and since the mussels are thought to be the source of avian botulism poisoning, they have led to the death of tens-of thousands of bird species in Michigan. By attaching to other mussels and clams, they suffocate as well as out-compete those animals. Thus, the clam and native mussel species (along with the bird population) has decreased significantly even since the invasive Zebra Mussel species was first introduced to the North American continent. This havoc actually helps explain how important and delicate the constituents of an ecosystem are because as soon as a foreign species is introduced, the ecosystem essentially falls apart. By just affecting the fish and bird population, the Zebra Mussel has altered, and continues to alter, the Great Lakes ecosystem in Michigan. Since animals, plants, bacteria and fungi in an ecosystem are so interdependent and critical to the balance of an ecosystem; invasive species prove to be destructive to the balance. In all, the fact that invasive species are the cause of endangerment of

42% of endangered species shows how interdependent ecosystems are and how small new things can disrupt the balance.

In final consideration, the world's ecosystems truly know no sovereignty. Ecosystems represent a system of interconnected elements that work together in order to keep a balance in the world. The worlds resources are limited, therefore various species must act together efficiently in order to make the best use of the limited resources we have. When evaluating various ecosystems, we can see how human negligence oftentimes destroys ecosystems, and that can inadvertently hurt humans. For this reason, we should carefully consider even some of the simplest decisions we make as they can have as detrimental an effect on an ecosystem as an intrusive species has. In a way, human actions such as cutting down trees, contaminating water and over-hunting makes us humans a type of "invasive specie" in some cases. In order to protect the world, we truly must do our best in order to preserve ecosystems and to try to make the best use of the limited resources our planet has to offer. As one can see, there truly is no one "sovereign" for the world's ecosystems, but a variety of species and several limiting factors that govern the world.

Works Cited/Bibliography

1. "Interdependence Quotes." Doonething.org. TheEmilyFund, n.d. Web. 1 Mar. 2015. <http://www.doonething.org/quotes/interdependence-quotes.htm>.

2. "Interdependence in Ecosystems." Aaas Science Assessment Project 2061. AAAS, n.d. Web. 1 Mar. 2015. <http://assessment.aaas.org/topics/IE#/>.

3. "Invasive Species." National Wildlife Federation. nwf.org, n.d. Web. 1 Mar. 2015. <http://www.nwf.org/wildlife/threats-to-wildlife/invasive-species.aspx>.

4. "Nature Works: Limiting Factors." Nature Works. NHPTV.org, 2015. Web. 1 Mar. 2015. <http://www.nhptv.org/natureworks/nwep12a.htm>.

5. "Zebra Mussel." Wikipedia. Wikipedia, The Free Encyclopedia, n.d. Web. 1 Mar. 2015. <http://en.wikipedia.org/wiki/Zebra_mussel>.

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Contact Us

Editor and Photographer: Dr. Chaitanya Hiremath

Please send your valuable feedback to:

info@sealoearth.org

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World Headquarters: Boston, MA, USA
www.SealoEarth.org